



# Conclusions (9)



- (5) In every speaker, both male and female, V in the open syllable has longer duration (length) than that in the checked syllable, with the ratio 2:1.





# Discussions (1)



## General problems

- It is difficult to find suitable informants for the task, due to a few limitations and conditions:
  - (1) Speakers with the age above 35 do not speak Thai.
  - (2) Kayan women are very busy selling handicrafts and entertaining tourists to earn their living and to be able to live in Thailand.



## Discussions (2)



- (3) Since our informants were reasonably paid for working with us, they wanted their relatives and close friends to replace them when they had other important obligations, therefore, we had less choices.
- (4) No reliable details about the informants since they are not Thai citizens. The Kayan were brought to Thailand 10-15 years ago for tourism business.



# Discussions (3)



- Unpleasant surrounding noises could not be avoided during the interviews and recordings.
- The whole working process made the informants feel bored, so quite often they lost their concentration.



# Discussions (4)



## Technical problems

- Even though the acoustic signals looked alright on the computer screen while recording at the research site, they did not show up well or none at all when they were analysed with Praat. Because of these defects, a few tokens could not be acoustically measured.



# Discussions (5)



- Surrounding noises could not be completely eliminated, this fact could cause some interferences and even small errors in our acoustic analysis.
- The items could not be recorded at random. Without a definite set of words and a definite order of words within the set, the informants found it too hard to say fluently the words we wanted.



# Discussions (6)

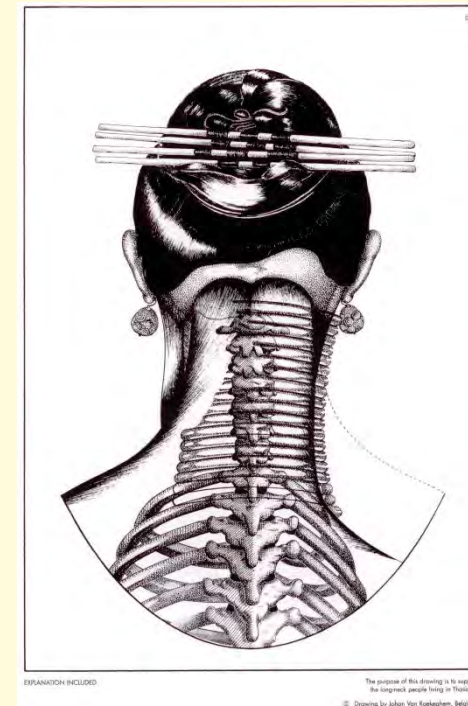
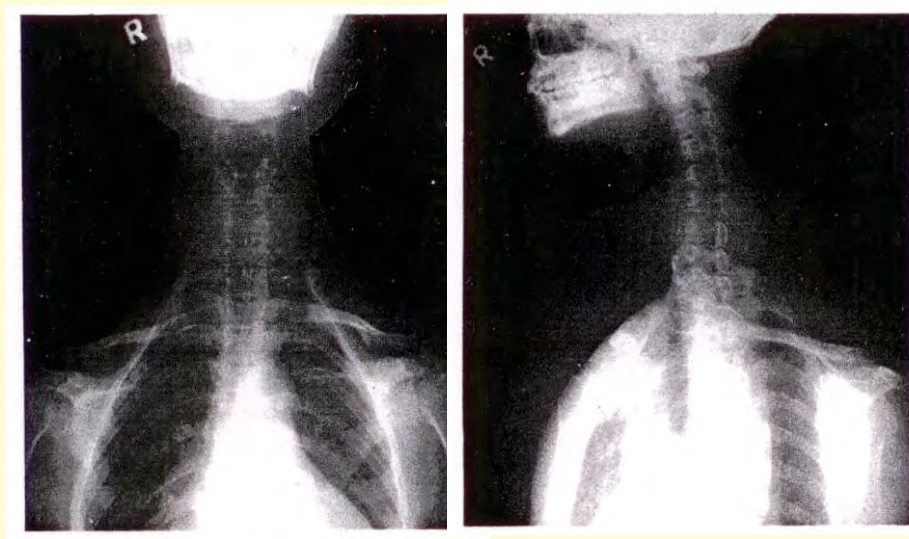


- The results of wearing heavy brass coils around the neck for many years can be:
  - (1) The mandible (lower jaw) is constantly pushed up.
  - (2) The shoulders and the upper areas of the rib cage are pressed down.
  - (3) There is an atrophy of the shoulder muscles.



# Discussions (7)

- (4) The extrinsic muscles being involved in the neck, larynx and tongue moments can be affected due to constantly stretched neck.



**Figure 13** X-rayed pictures showing the skeleton of the neck and the upper thorax (left) and a drawing picture comparing the deformed shoulder with the normal one (right)



# Discussions (8)



- Does the deformity caused by wearing heavy brass coils have any effects on the quality of the Kayan sounds produced by brass-coiled necked female speakers?
- In theory, there should be some effects. A decreased space of the upper thoracic cavity can effect breathing. As we know, speaking is a modified breathing. A suitable volume of lung air is necessary for continuously long and loud speech.



# Discussions (9)



- However, a particular way of synchronisation of the organs of speech and the muscles involved in the speech sound production can compensate for a deformity caused by gradual adding more coils up to 32 at the most.
- When the brass wire is permanently removed, the shoulder muscles can develop and become normal again.



# Discussions (10)



- To obtain solid answers, more detailed physiological studies are needed, especially a longitudinal study, i.e. from having less coils to more coils and then none, of the same group of female speakers.
- More information on the anatomy and physiology of speech can be found in Seikel, King and Drumnigh (2009), Kaplan (1971), McFarland (2008), Raphael, Borden and Harris (2006), Zemlin (1997), etc.



# Acknowledgements



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THANK YOU

## Numerals and Classifiers in Modern Karenic Languages and Proto-Karen

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### ABSTRACT

A word list of 2,000 items was devised after a brief survey of the Karen languages spoken in Thailand. The data on Pa-O, Kayan-Kayah-Kayaw and Pwo-Sgaw, representing northern Karen (NK), central Karen (CK) and southern Karen (SK), respectively, was collected at many locations by the author between March 2009 and May 2011. A tentative reconstruction of Proto-Karen phonology was made to aid in the reconstruction of Proto-Karen numerals and classifiers. Available documents on the numeral systems of Karenic languages and the other Tibeto-Burman languages were also consulted to support the author's interpretation.

The research results indicate that the numeral systems of NK and SK are decimal while those of CK (except Kayan) are more complex owing to the use of mixed systems, e.g. **so**<sup>33</sup> **swa**<sup>55</sup> (3x2) 'six' (base-3 system), **lwi**<sup>33</sup> **swa**<sup>55</sup> (4x2) 'eight' (base-4 system), etc. as in Kayah. Also, there is harmony of the vowel in the word meaning 'one' and the following classifier, e.g. **ta**<sup>11</sup> **ba**<sup>11</sup> 'a piece of flat object', **to**<sup>11</sup> **bo**<sup>11</sup> 'a piece of long object', **to**<sup>11</sup> **plɔ**<sup>11</sup> 'a lump of...', a ball of...' and so forth. This finding suggests that CK numerals and classifiers cannot be separately studied.

The numeral system of Proto-Karen is decimal. The etyma of PK numerals 'one' to 'ten' including 'hundred' and 'thousand' are given. The use of classifiers reflects their world view, i.e. SHAPE is more important than SIZE.



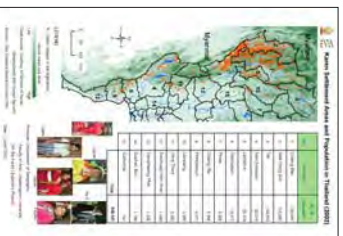
## Numerals and Classifiers in Modern Karenic Languages and Proto-Karen



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## Background (2)



■ Karen population in Thailand: 438,131  
(Ministry of Social Development  
and Human Security, 2002)



## Background (1)



Distribution of the Karen in Myanmar and Thailand



## Background (3)



## Demical system



|       | Pa-O                          | Kayan                               | Pwo                                 | Sgaw               |
|-------|-------------------------------|-------------------------------------|-------------------------------------|--------------------|
| ONE   | ta <sup>221</sup>             | ta <sup>11</sup> ~la <sup>221</sup> | la <sup>11</sup> ~la <sup>221</sup> | ta <sup>33</sup>   |
| TWO   | ni <sup>31</sup>              | ŋi <sup>53</sup>                    | knei <sup>35</sup>                  | kn <sup>55</sup>   |
| THREE | sam <sup>31</sup>             | θa <sup>~</sup>                     | se <sup>35</sup>                    | sa <sup>33</sup>   |
| FOUR  | lip <sup>45</sup> ~ ʔ • • • • | lw <sup>53</sup>                    | lw <sup>11</sup>                    |                    |
| FIVE  | lwi <sup>11</sup>             | ŋe <sup>221</sup>                   | je <sup>35</sup>                    | je <sup>11</sup>   |
| SIX   | su <sup>31</sup>              | chu <sup>53</sup>                   | xon <sup>35</sup>                   | xɪ <sup>33</sup>   |
| SEVEN | ni <sup>21</sup>              | n <sup>4</sup> ɛ <sup>33</sup>      | n <sup>4</sup> ɛ <sup>35</sup>      | nwi <sup>245</sup> |
| EIGHT | se <sup>21</sup>              | cha <sup>245</sup>                  | xo <sup>221</sup>                   | xo <sup>245</sup>  |
| NINE  | ko <sup>45</sup>              | khwi <sup>53</sup>                  | khwi <sup>35</sup>                  | khwi <sup>33</sup> |
| TEN   | ci <sup>31</sup>              | thi <sup>53</sup>                   | chei <sup>35</sup>                  | ch • 33            |



## Combined system (Multiplicative and additive)



|       | E. Kayah                                             | Kayaw                                                |
|-------|------------------------------------------------------|------------------------------------------------------|
| ONE   | ɪ <sup>-11</sup>                                     | ɪ <sup>-11</sup> - 33                                |
| TWO   | mə <sup>33</sup>                                     | kɪ <sup>55</sup>                                     |
| THREE | sə <sup>33</sup>                                     | sə <sup>55</sup>                                     |
| FOUR  | lwɪ <sup>33</sup>                                    | lɪ <sup>55</sup>                                     |
| FIVE  | ŋe <sup>33</sup>                                     | ʔ • ɛ <sup>33</sup>                                  |
| SIX   | sə <sup>23</sup> swa <sup>55</sup>                   | sɪ <sup>55</sup> su <sup>33</sup>                    |
| SEVEN | sə <sup>33</sup> swa <sup>55</sup> ɪ <sup>-11</sup>  | sə <sup>23</sup> me <sup>55</sup>                    |
| EIGHT | lwɪ <sup>33</sup> swa <sup>55</sup>                  | lɪ <sup>33</sup> su <sup>23</sup> - xo <sup>11</sup> |
| NINE  | lwɪ <sup>33</sup> swa <sup>55</sup> ɪ <sup>-11</sup> | sə <sup>23</sup> kn <sup>55</sup>                    |
| TEN   | che <sup>33</sup>                                    | ɛ <sup>55</sup>                                      |



## Vowel harmony and tone sandhi in N+NUM+CLF phrases



|                         | E. Karen                                                                 | Karen                                                                        |
|-------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 'one house'             | hɪ <sup>11</sup> q <sup>11</sup> mɛ <sup>23</sup> (e-e)                  | chɪ <sup>11</sup> q <sup>11</sup> mɛ <sup>23</sup> (e-a.1ML)                 |
| 'one hat'               | hɪ <sup>11</sup> q <sup>11</sup> hɪ <sup>11</sup> (e-e)                  | hɪ <sup>11</sup> q <sup>11</sup> hɪ <sup>11</sup> (e-a. ML)                  |
| 'one dog'               | hɛn <sup>11</sup> q <sup>11</sup> dɛ <sup>23</sup> (ɬ-ɬ)                 | hɪ <sup>11</sup> q <sup>11</sup> dɛ <sup>23</sup> (e-a. 11b)                 |
| 'one bump of clay'      | hɛ <sup>11</sup> hɛ <sup>23</sup> q <sup>11</sup> pɪ <sup>11</sup> (e-o) | hɛ <sup>11</sup> q <sup>11</sup> hɛ <sup>23</sup> (e-a. MM)                  |
| 'one ball of thread'    | hɪ <sup>11</sup> q <sup>11</sup> hɛ <sup>11</sup> (e-e)                  | hɪ <sup>11</sup> q <sup>11</sup> hɛ <sup>11</sup> (e-a. ML)                  |
| 'one patch of cloud'    | hɔ <sup>23</sup> hɪ <sup>11</sup> q <sup>11</sup> hɪ <sup>11</sup> (t-)  | hɔ <sup>23</sup> q <sup>11</sup> pɔ <sup>23</sup> hɛ <sup>23</sup> (e-a. MM) |
| 'one slice of cucumber' | dɔ <sup>23</sup> mɪ <sup>11</sup> q <sup>11</sup> hɪ <sup>11</sup> (t-)  | dɔ <sup>23</sup> mɪ <sup>11</sup> q <sup>11</sup> hɛ <sup>11</sup> (t-1. ML) |



## Proto-Karen numerals (1)



|              |                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------|
| <b>ONE</b>   | <sup>11</sup> ɬɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *-(R)                 |
| <b>TWO</b>   | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *-(R)                 |
| <b>THREE</b> | <sup>11</sup> qɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *-(R)                 |
| <b>FOUR</b>  | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *ɬɪ <sup>11</sup> (R) |
| <b>FIVE</b>  | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *ɬɪ <sup>11</sup> (R) |



## Proto-Karen numerals (2)



|              |                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------|
| <b>SIX</b>   | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *-(R)                 |
| <b>SEVEN</b> | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *ɬɪ <sup>11</sup> (R) |
| <b>EIGHT</b> | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *-(R)                 |
| <b>NINE</b>  | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *-(R)                 |



## Proto-Karen numerals (3)



|                 |                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------|
| <b>TEN</b>      | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *ɬɪ <sup>11</sup> (R) |
| <b>HUNDRED</b>  | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *ɬɪ <sup>11</sup> (R) |
| <b>THOUSAND</b> | <sup>11</sup> hɪ <sup>11</sup> [PTB *ɬ, *ɬɛ, *ɬɛɛ (JML, PBL, PSELTB *ɬɛ, (DB)]<br>PK *-(R)                 |



## Proto-Karen classifiers



- CLF [+human] \*bra<sup>h</sup>
- CLF [-human +4-legged animal] \* dɔ<sup>h</sup>
- CLF [±animate +flat] \* ba<sup>h</sup>
- CLF [±animate +long] \* bɔ<sup>h</sup>
- CLF [±animate +round -big] \*phlo<sup>h</sup>
- CLF [±animate +round +big] \*hma<sup>h</sup>



## Conclusion (1)



- Numerals show various irregular correspondence patterns resulting from vowel harmony and tonal sandhi in NUM+CLF phrases and also from language contact.
- Comparable fresh data collected by one person helps make the reconstruction of PK numerals and classifiers possible.



## Conclusion (2)



- PK numeral system is decimal (Base-10) but decimal and combined systems in modern Karenic languages.
- Small numbers from 1-5 and big numbers: 10,100,1000, have been preserved quite well in all Karenic languages.



## Conclusion (3)



- According to the Karen world view, SHAPE is more important than SIZE.
- With neither [+human] nor [+4-legged mammal], the rest of [+animate] and [-animate] share the same classifiers, i.e. [+flat/1-dimension], [+long/2-dimension] and [+round/3-dimension].



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- We are thankful for the kind co-operation and hospitality of the local authorities and our Karen friends who have helped make our research project possible.
- Many thanks go to my research assistants, Sujinat Jitwityanont, Kamthida Kerdpol and Siwaporn Tuantaisong for their assistance in many different ways.



□□□□ □□□

# **Proto-Karen (\*k-rjaŋ<sup>ʔ</sup>) Fauna**

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A wordlist consisting of 2,000 items with English and Thai glosses divided into 21 sections based on semantic fields was devised. The data on the six Karenic languages spoken in Thailand, i.e. Pa-O (two varieties), Kayan, Kayah, Kayaw, Pwo (two varieties) and Sgaw (two varieties) was collected by the author at many research sites in Thailand from January 2009 – January 2012, sponsored by the Thailand Research Fund (TRF). The cognate words found in the Bwe Karen Dictionary (Henderson, 1997) were added and other available publications were also consulted (e.g. Jones, 1961; Burling, 1969; Shintani, 2003; Manson, 2009, etc.).

To analyse the patterns of sound correspondence, the comparative method was applied with an awareness of areal linguistic features due to language contact. A Proto-Karen (\*k-rjaŋ<sup>ʔ</sup>) phonology and lexicon were reconstructed. With regard to the Proto-Karen phonology, the relationship between the onsets and tones is rather straightforward, so it is not difficult to reconstruct, unlike the rhymes which, in some cases, are problematic resulting from vowel harmony and the loss of final consonants.

In this paper, the reconstructed forms of Proto-Karen and modern Karen animals (about 60 species) will be presented. An appendix with the Proto-Karen tones, onsets and rhymes will be provided.

## Examples of Proto-Karen (\*k-rjaŋ<sup>A</sup>) Fauna

| PK                                               | N. Pa-O                                    | S. Pa-O                    | Kayan                      | Kayah                    | Bwe                       | Kayaw                     | N. Pwo                    | S. Pwo                    | N. Sgaw                    | S. Sgaw                    | Gloss                   |
|--------------------------------------------------|--------------------------------------------|----------------------------|----------------------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------------|-------------------------|
| <b>*jow<sup>B</sup></b>                          | ju <sup>53</sup> (B3)                      | ju <sup>55</sup> (B3)      | ju <sup>11</sup> (B)       | jo <sup>11</sup> (B)     | ju <sup>11</sup> (D3)     | ju <sup>11</sup> (B)      | jou <sup>11</sup> (B3)    | jou <sup>33</sup> (B3)    | ji <sup>11</sup> (B3)      | ji <sup>31</sup> (B3)      | ‘rat, rodent’           |
| <b>*jow<sup>B</sup> <u>wi</u><sup>A</sup></b>    | ~wi <sup>33</sup> (A3)                     | ~wi <sup>53</sup> (A3)     | -                          | ~wi <sup>11</sup> (A3)   | ~wi <sup>33</sup> (A3)    | ~wi <sup>33</sup> (A3)    | ~wei <sup>55</sup> (A2-3) | ~wei <sup>31</sup> (A2-3) | ~wi <sup>33</sup> (A)      | ~wi <sup>33</sup> (A3)     | ‘mole’                  |
| <b>*jow<sup>B</sup> <u>khan</u><sup>A</sup></b>  | ~khan <sup>31</sup> (A1-2)                 | ~khan <sup>31</sup> (A1-2) | ~khan <sup>53</sup> (A1-2) | -                        | ~khɛ <sup>55</sup> (A1-2) | ~khɔ <sup>55</sup> (A1-2) | ~khẽ <sup>35</sup> (A1)   | ~khɔ̃ <sup>53</sup> (A1)  | ~khɔ <sup>33</sup> (A)     | ~khɔ <sup>55</sup> (A1-2)  | ‘bamboo rat’            |
| <b>*khwi<sup>B</sup></b>                         | kwi <sup>55</sup> (B1-2)                   | kwi <sup>33</sup> (B1-2)   | khwi <sup>11</sup> (B)     | khwi <sup>11</sup> (B)   | khwi <sup>33</sup> (B)    | khi <sup>11</sup> (B)     | khwi <sup>33</sup> (B1-2) | khwi <sup>33</sup> (B1-2) | khwi <sup>31~</sup> (B1-2) | khwi <sup>45'</sup> (B1-2) | ‘chameleon’             |
| <b>*blɛ<sup>ʔD</sup></b>                         | plɛ <sup>ʔ45</sup> (D3)                    | plɛ <sup>ʔ45</sup> (D3)    | plɛ <sup>ʔ21</sup> (D3)    | pla <sup>33</sup> (D3)   | bli <sup>11</sup> (D3)    | ple <sup>33</sup> (D)     | ple <sup>ʔ21</sup> (D3)   | phle <sup>ʔ45</sup> (D3)  | phlɛ <sup>ʔ21</sup> (D3)   | plɛ <sup>11</sup> (D3)     | ‘skink’                 |
| <b>*ʔde<sup>B</sup></b>                          | de <sup>55</sup> (B1-2)                    | de <sup>33</sup> (B1-2)    | dai <sup>11</sup> (B)      | di <sup>11</sup> (B)     | dɪ <sup>33</sup> (B)      | di <sup>11</sup> (B)      | di <sup>33</sup> (B1-2)   | di <sup>55</sup> (B1-2)   | de <sup>31~</sup> (B1-2)   | de <sup>45'</sup> (B1-2)   | ‘frog’                  |
| <b>*ʔde<sup>B</sup> <u>sow</u><sup>B</sup></b>   | ~su <sup>55</sup> (B1-2)                   | ~su <sup>33</sup> (B1-2)   | ~θu <sup>11</sup> (B)      | ~so <sup>11</sup> (B)    | ~θu <sup>33</sup> (B)     | ~su <sup>11</sup> (B)     | ~sou <sup>33</sup> (B1-2) | ~sou <sup>55</sup> (B1-2) | ~si <sup>31~</sup> (B1-2)  | ~si <sup>45'</sup> (B1-2)  | ‘toad’                  |
| <b>*row<sup>B</sup></b>                          | ru <sup>53</sup> (B3)                      | ru <sup>55</sup> (B3)      | rəu <sup>11</sup> (B)      | ro <sup>11</sup> (B)     | Ru <sup>33</sup> (B)      | ru <sup>11</sup> (B)      | you <sup>11</sup> (B3)    | you <sup>33</sup> (B3)    | yi <sup>11</sup> (B3)      | yi <sup>31</sup> (B3)      | ‘snake’                 |
| <b>*tham<sup>A</sup></b>                         | tham <sup>31</sup> (A1-2)                  | tham <sup>31</sup> (A1-2)  | than̄ <sup>53</sup> (A1-2) | the <sup>33</sup> (A1-2) | thɛ <sup>55</sup> (A1-2)  | thɔ <sup>55</sup> (A1-2)  | -                         | thɔ̃ <sup>53</sup> (A1)   | -                          | -                          | ‘bear’                  |
| <b>*tho<sup>B</sup></b>                          | -                                          | -                          | thau <sup>11</sup> (B)     | thu <sup>11</sup> (B)    | tho <sup>33</sup> (B)     | thu <sup>11</sup> (B)     | thu <sup>33</sup> (B1-2)  | thu <sup>55</sup> (B1-2)  | tho <sup>31~</sup> (B1-2)  | thu <sup>45'</sup> (B1-2)  | ‘bird’                  |
| <b>*tho<sup>B</sup> <u>lwi</u><sup>B</sup></b>   | ~lwi <sup>53</sup> (B3)                    | ~lwi <sup>55</sup> (B3)    | ~lwi <sup>11</sup> (B)     | ~lwi <sup>11</sup> (B)   | ~lwi <sup>33</sup> (B)    | ~li <sup>11</sup> (B)     | ~lei <sup>11</sup> (B3)   | ~lwi <sup>33</sup> (B3)   | ~lwi <sup>11</sup> (B3)    | ~lwi <sup>31</sup> (B3)    | ‘dove’                  |
| <b>*tho<sup>B</sup> <u>bra</u><sup>ʔD</sup></b>  | -                                          | -                          | ~pra <sup>ʔ21</sup> (D3)   | ~phre <sup>33</sup> (D3) | ~ba <sup>11</sup> (D3)    | ~prɔ <sup>33</sup> (D)    | ~ɕja <sup>ʔ21</sup> (D3)  | ɕha <sup>ʔ45</sup> (D3)   | ~bya <sup>ʔ21</sup> (D3)   | ~pya <sup>11</sup> (D3)    | ‘peacock’               |
| <b>*lek<sup>D</sup></b>                          | le <sup>ʔ45</sup> (D3)                     | lik <sup>45</sup> (D3)     | li <sup>ʔ21</sup> (D3)     | la <sup>33</sup> (D3)    | le <sup>11</sup> (D3)     | le <sup>33</sup> (D)      | lai <sup>ʔ21</sup> (D3)   | lai <sup>ʔ45</sup> (D3)   | li <sup>ʔ21</sup> (D3)     | lai <sup>11</sup> (D3)     | ‘hawk’                  |
| <b>*chjaN<sup>A</sup></b>                        | chja <sup>31</sup> (A1-2)                  | chja <sup>31</sup> (A1-2)  | chi <sup>53</sup> (A1-2)   | cha <sup>33</sup> (A1-2) | ʃi <sup>55</sup> (A1-2)   | ɕhi <sup>55</sup> (A1-2)  | chẽ <sup>35</sup> (A1)    | chɔ̃ <sup>53</sup> (A1)   | chɔ <sup>33</sup> (A)      | chɔ <sup>55</sup> (A1-2)   | ‘chicken’               |
| <b>*chjaN<sup>A</sup> <u>gra</u><sup>B</sup></b> | ~sa <sup>53</sup> (B3)                     | ~ɕa <sup>55</sup> (B3)     | ~ca <sup>11</sup> (B)      | ~khre <sup>11</sup> (B)  | -                         | ~ca <sup>11</sup> (B)     | ~xa <sup>11</sup> (B3)    | ~xa <sup>33</sup> (B3)    | ~xa <sup>11</sup> (B3)     | ~xa <sup>31</sup> (B3)     | ‘chicken louse, insect’ |
| <b>*roŋ<sup>B</sup></b>                          | roŋ <sup>53</sup> (B3)                     | roŋ <sup>55</sup> (B3)     | ro <sup>11</sup> (B)       | rɔ <sup>11</sup> (B)     | -                         | rɔ <sup>11</sup> (B)      | ɣău <sup>11</sup> (B3)    | ɣôu <sup>33</sup> (B3)    | ɣə <sup>11</sup> (B3)      | ɣi <sup>31</sup> (B3)      | ‘weevil’                |
| <b>*hl/ʔlog<sup>B</sup></b>                      | loŋ <sup>55</sup> (B3)                     | loŋ <sup>33</sup> (B1-2)   | lo <sup>11</sup> (B)       | lɔ <sup>11</sup> (B)     | lo <sup>33</sup> (B)      | lə <sup>11</sup> (B)      | lău <sup>33</sup> (B1-2)  | lôu <sup>55</sup> (B1-2)  | lə <sup>31~</sup> (B1-2)   | li <sup>45'</sup> (B1-2)   | ‘maggot’                |
| <b>*t-swa<sup>ʔD</sup></b>                       | ta <sup>ʔ21</sup> wa <sup>ʔ21</sup> (D1-2) | wa <sup>ʔ21</sup> (D1-2)   | θu <sup>ʔ45</sup> (D1-2)   | swa <sup>55</sup> (D1-2) | -                         | su <sup>33</sup> (D)      | wa <sup>ʔ21</sup> (D3)    | wa <sup>ʔ45</sup> (D3)    | su <sup>ʔ45</sup> (D1-2)   | sɔu <sup>ʔ21</sup> (D1-2)  | ‘land leech’            |
| <b>*chwɛ<sup>B</sup></b>                         | chwɛ <sup>55</sup> (B1-2)                  | chwɛ <sup>33</sup> (B1-2)  | chwɛ <sup>11</sup> (B)     | chwa <sup>11</sup> (B)   | ʃwɛ <sup>33</sup> (B)     | chɛ <sup>11</sup> (B)     | chwɛ <sup>33</sup> (B1-2) | chwɛ <sup>55</sup> (B1-2) | chwɛ <sup>31~</sup> (B1-2) | chwɛ <sup>45'</sup> (B1-2) | ‘crab’                  |
| <b>*khey<sup>B</sup></b>                         | ki <sup>55</sup> (B1-2)                    | -                          | khi <sup>11</sup> (B)      | khə <sup>11</sup> (B)    | khi <sup>33</sup> (B)     | khi <sup>11</sup> (B)     | khei <sup>33</sup> (B1-2) | khei <sup>55</sup> (B1-2) | khi <sup>31~</sup> (B1-2)  | khi <sup>45'</sup> (B1-2)  | ‘tick’                  |
| <b>*dəŋ<sup>B</sup></b>                          | thəŋ <sup>53</sup> (B3)                    | təŋ <sup>55</sup> (B3)     | tə <sup>11</sup> (B)       | tɔ <sup>11</sup> (B)     | do <sup>33</sup> (B)      | tə <sup>11</sup> (B)      | thă <sup>11</sup> (B3)    | thə̃ <sup>33</sup> (B3)   | tə <sup>11</sup> (B3)      | tə <sup>31</sup> (B3)      | ‘ant’                   |
| <b>*khe<sup>A</sup></b>                          | ke <sup>31</sup> (A1-2)                    | ke <sup>31</sup> (A1-2)    | khai <sup>53</sup> (A1-2)  | khi <sup>33</sup> (A1-2) | khi <sup>55</sup> (A1-2)  | khi <sup>55</sup> (A1-2)  | khi <sup>35</sup> (A1)    | khi <sup>53</sup> (A1)    | khe <sup>33</sup> (A)      | -                          | ‘tiger’                 |



# Proto-Karen (\*k-rjaŋ<sup>A</sup>) Fauna



SEALS 22, Agay, France  
May 31 - June 2, 2012



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# **Eighteen Karenic Groups in Myanmar (Ethnologue, 2009)**

**Pa-O**

**Lahta**

**Kayan**

**Bwe**

**Geko**

**Geba**

**Brek**

**E. Kayah**

**W. Kayah**

**Yinbaw**

**Yintale**

**Manumanaw**

**Paku**

**Sgaw**

**Wewaw**

**Zeyein**

**E. Pwo**

**W. Pwo**



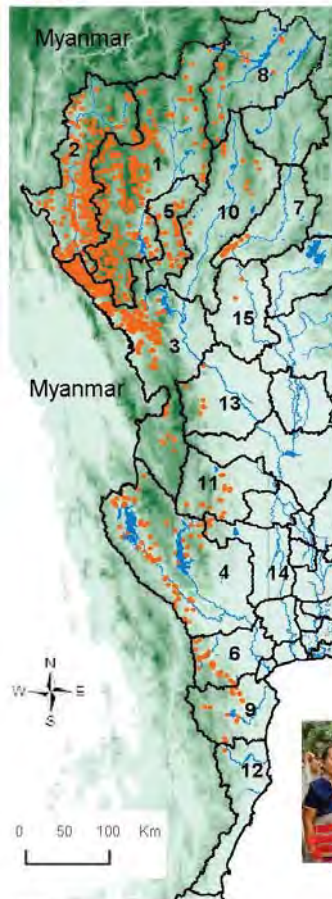
# Six Karenic Groups in Thailand

**Pa-O**  
**Kayan**  
**Kayah**

**Kayaw**  
**Sgaw**  
**Pwo**



## Karen Settlement Areas and Population in Thailand (2002)



| No.   | Province            | No. of population |
|-------|---------------------|-------------------|
| 1     | Chiang Mai          | 138,447           |
| 2     | Mae Hong Son        | 100,983           |
| 3     | Tak                 | 94,334            |
| 4     | Kanchanaburi        | 30,978            |
| 5     | Lamphun             | 29,124            |
| 6     | Ratchaburi          | 13,577            |
| 7     | Phrae               | 8,298             |
| 8     | Chiang Rai          | 6,456             |
| 9     | Phetchaburi         | 4,011             |
| 10    | Lampang             | 3,969             |
| 11    | Uthai Thani         | 3,382             |
| 12    | Prachuap Khiri Khan | 1,339             |
| 13    | Kamphaeng Phet      | 1,335             |
| 14    | Suphan Buri         | 1,159             |
| 15    | Sukhothai           | 741               |
| Total |                     | 438,131           |



## LEGEND

● Karen villages in the highlands

Above mean sea level

Low

High

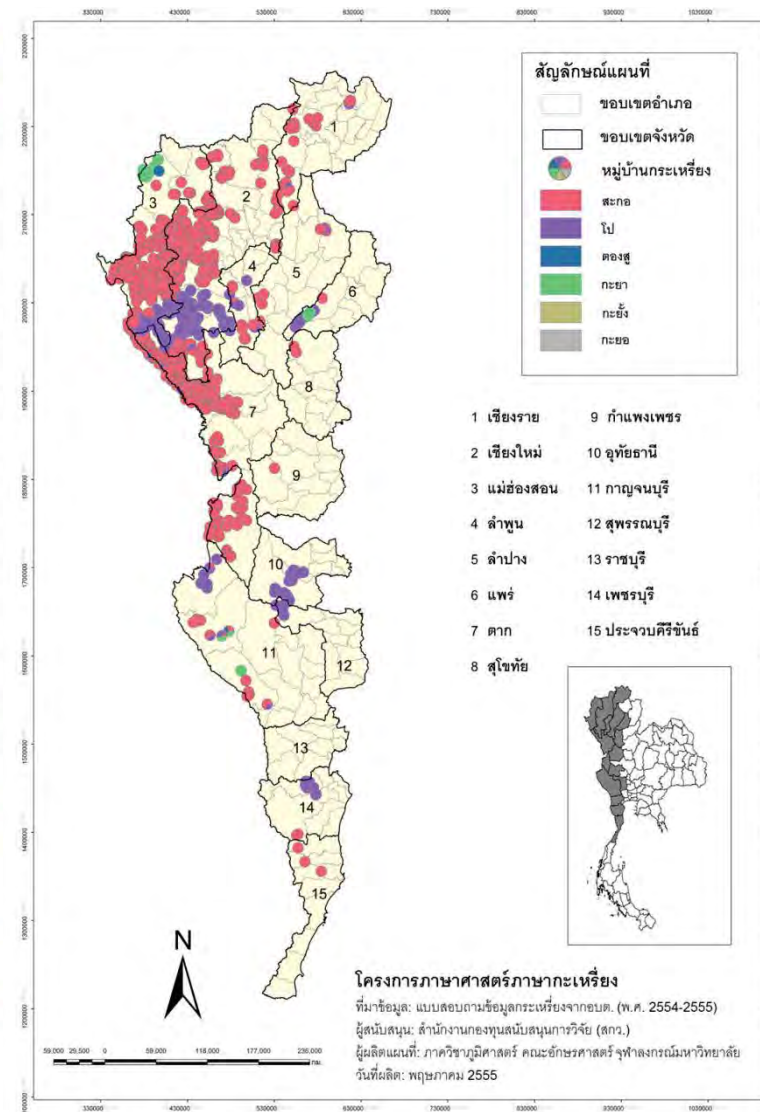
Data source: Courtesy of Ministry of Social Development and Human Security

Sponsor: The Thailand Research Fund (TRF)

Producer: Department of Geography  
Faculty of Arts, Chulalongkorn University  
(for the Karen Linguistics Project)

Date: 1 June 2010

## Karen Settlement Areas and Population in Thailand (2012)





# Previous Works on Comparative Karen

- Haudricourt (1946, 1953)
- Jones (1961)
- Burling (1969)
- Solnit (2001)
- Manson (2009)



## Previous Works on the Classifications of Karen

- Jones (1961)
- Burling (1969)
- Kauffman (1993)
- Bradley (1997)
- Manson (2001, 2011)
- Shintani (2003)



## Obtaining Fresh and Compatible Data

- Choosing languages and varieties
- Devising a wordlist of 2,000 items with English and Thai glosses divided into 21 semantic domains (Fauna = 128 items)
- Eliciting data by interviewing male native speakers at different research sites
- Comparing and reconstructing PK phonology and lexicon



## Representatives of the Three Major Branches (Geographical Base)

### *Northern*

**Pa-O (2 varieties)**

### *Central*

**Kayan**

**E. Kayah**

**Kayaw**

**Bwe (Henderson, 1997)**

### *Southern*

**Sgaw (2 varieties)**

**Pwo (2 varieties)**



## Protoform \*k-rjaŋ<sup>A</sup> (Karen)

**Autonames:** ka<sup>1</sup> jaŋ<sup>53</sup> A1 (Kayan)

**kε<sup>11</sup> jε<sup>11</sup> A3 (E. Kayah)**

**ko<sup>33</sup> jo<sup>33</sup> A3 (Kayaw)**

(pya<sup>33</sup>) ka' ɲo<sup>33</sup> A3 (Sgaw)

**Other names:** ka' raan<sup>21</sup>, ka rian<sup>21</sup> (Central Thai)

**jaan<sup>33</sup> (Northern Thai)**



## Regular Sound Changes of the \*-aŋ Rhyme

*Example:* PK \*laŋ<sup>A</sup> ‘to descend’

Pa-O: laŋ<sup>33</sup> A3 (N.)

Kayaw: lo<sup>33</sup> A3

laŋ<sup>53</sup> A3 (S.)

Sgaw: lo<sup>33</sup> A3 (N.)

Kayan: laŋ<sup>33</sup> A3

lo<sup>33</sup> A3 (S.)

Kayah: le<sup>11</sup> A3

Pwo: lẽ<sup>55</sup> A3 (N.)

Bwe: la<sup>33</sup> A3

lõ<sup>31</sup> A3 (S.)



# Proto-Karen Phonology

- The tones, onsets and rhymes of Proto-Karen phonology with some lexical examples can be found in Figure 1, Table 1 and Table 2 of the Appendix.



# Proto-Karen Tones

- How many tones should be reconstructed, two, three, four or six? There are different opinions, as follows:

|                                 |     |               |
|---------------------------------|-----|---------------|
| <i>Haudricourt (1946, 1975)</i> | 2/3 | A B / A B B'  |
| <i>Jones (1961)</i>             | 2   | ' `           |
| <i>Burling (1969)</i>           | 6   | 1 2 3 4 ?1 ?2 |
| <i>Shintani (2003)</i>          | 4   | 1 2 2' 3      |
| <i>Manson (2009)</i>            | 4   | *A *B *B' *C  |
| <i>Luangthongkum</i>            | 3   | *A *B *D      |



# Tonal Development in Modern Karen

N. Pa-O

|   | *A              | *B | *D              |
|---|-----------------|----|-----------------|
| 1 | 31 <sup>~</sup> | 55 | 21 <sup>'</sup> |
| 2 | 31 <sup>~</sup> | 55 | 21 <sup>'</sup> |
| 3 | 33              | 53 | 45 <sup>'</sup> |

S. Pa-O

|   | *A              | *B | *D              |
|---|-----------------|----|-----------------|
| 1 | 31 <sup>~</sup> | 33 | 21 <sup>'</sup> |
| 2 | 31 <sup>~</sup> | 33 | 21 <sup>'</sup> |
| 3 | 53              | 55 | 45 <sup>'</sup> |

Kayan

|   | *A | *B | *D              |
|---|----|----|-----------------|
| 1 | 53 | 11 | 45 <sup>'</sup> |
| 2 | 53 | 11 | 45 <sup>'</sup> |
| 3 | 33 | 11 | 21 <sup>'</sup> |

E. Kayah

|   | *A | *B | *D |
|---|----|----|----|
| 1 | 33 | 11 | 55 |
| 2 | 33 | 11 | 55 |
| 3 | 11 | 11 | 33 |

W. Bwe

|   | *A | *B | *D |
|---|----|----|----|
| 1 | 55 | 33 | 33 |
| 2 | 55 | 33 | 33 |
| 3 | 33 | 33 | 11 |

Kayaw

|   | *A | *B | *D |
|---|----|----|----|
| 1 | 55 | 11 | 33 |
| 2 | 55 | 11 | 33 |
| 3 | 33 | 11 | 33 |

N. Sgaw

|   | *A | *B              | *D              |
|---|----|-----------------|-----------------|
| 1 | 33 | 31 <sup>~</sup> | 45 <sup>'</sup> |
| 2 | 33 | 31 <sup>~</sup> | 45 <sup>'</sup> |
| 3 | 33 | 11 <sup>~</sup> | 21 <sup>'</sup> |

S. Sgaw

|   | *A | *B              | *D              |
|---|----|-----------------|-----------------|
| 1 | 55 | 45 <sup>'</sup> | 21              |
| 2 | 55 | 45 <sup>'</sup> | 21              |
| 3 | 33 | 31              | 11 <sup>~</sup> |

N. Pwo

|   | *A | *B              | *D              |
|---|----|-----------------|-----------------|
| 1 | 35 | 33              | 45 <sup>'</sup> |
| 2 | 55 | 33              | 45 <sup>'</sup> |
| 3 | 55 | 11 <sup>~</sup> | 21 <sup>'</sup> |

S. Pwo

|   | *A              | *B | *D              |
|---|-----------------|----|-----------------|
| 1 | 53              | 55 | 21 <sup>'</sup> |
| 2 | 31 <sup>~</sup> | 55 | 21 <sup>'</sup> |
| 3 | 31 <sup>~</sup> | 33 | 45 <sup>'</sup> |



## Proto-Karen Lexicon: Fauna (1)

- Cognates were found in all languages and varieties with regular sound changes.

\*dəŋ<sup>B</sup> ‘ant’

\*thwi<sup>B</sup> ‘dog’

\*k-hne<sup>A</sup> ‘honey bee’

\*(tho<sup>B</sup>) lwi<sup>B</sup> ‘dove’

\*p/b-na<sup>B</sup> ‘buffalo’

\*ʔde<sup>B</sup> ‘frog’

\*kwi<sup>B</sup> ‘chameleon’

\*jow<sup>B</sup> ‘mouse’

\*chwe<sup>B</sup> ‘crab’

\*tho<sup>ʔD</sup> ‘pig’



## Proto-Karen Lexicon: Fauna (2)

- Cognates were found in the Central and Southern branches.

\*p-<sup>?</sup>dε<sup>A</sup> ‘rabbit’      \*tho<sup>B</sup> ‘bird’

- Cognates were found in the Northern and Central branches.

\*da<sup>?</sup>D ‘fish’      \*bo<sup>B</sup> ‘ox’

\*jaj<sup>A</sup> ‘serow’      \*s-ŋwi<sup>B</sup> ‘water snail’



## Proto-Karen Lexicon: Fauna (3)

- Could be Austroasiatic loans (Monic, Waic)

\*chjaN<sup>A</sup> ‘chicken’

\*k-chaŋ<sup>A</sup> ‘elephant’

\*k-sre<sup>T</sup> ‘horse’

\*hlaŋ<sup>A/B</sup> k-daʔ<sup>D</sup> ‘vulture’



## Proto-Karen and Proto-Tibeto-Burman (1)

| PK                                   | PTB            | Gloss          |
|--------------------------------------|----------------|----------------|
| *d-khej <sup>A</sup>                 | *d-key, *d-kəy | 'barking deer' |
| *t-khroʔ <sup>D</sup>                | *d-yuk         | 'sambha deer'  |
| *thwi <sup>B</sup>                   | *kwiy, *kwəy   | 'dog'          |
| *kli <sup>A</sup> /kliʔ <sup>D</sup> | *s-liy, *s-ləy | 'flea'         |
| *swiN <sup>B</sup>                   | *sar, *śar     | 'head louse'   |



## Proto-Karen and Proto-Tibeto-Burman (2)

| PK                | PTB              | Gloss      |
|-------------------|------------------|------------|
| *wi <sup>A</sup>  | *bwiy, *bwəy     | 'mole'     |
| *jaj <sup>A</sup> | *kye.l, *kyi[.]l | 'serow'    |
| *row <sup>B</sup> | *b-ru.l          | 'snake'    |
| *hli <sup>B</sup> | *s-ley           | 'squirrel' |



# Discussion (1)

- o Contact relationship

N. Pa-O ——— Shan

S. Pa-O ——— Mon

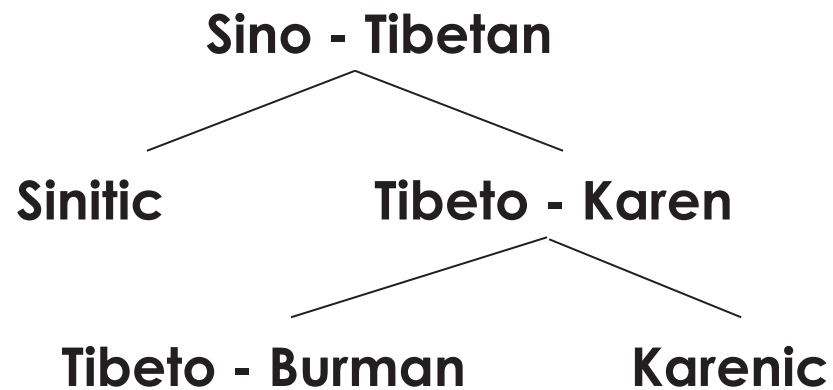
Pwo ——— Mon



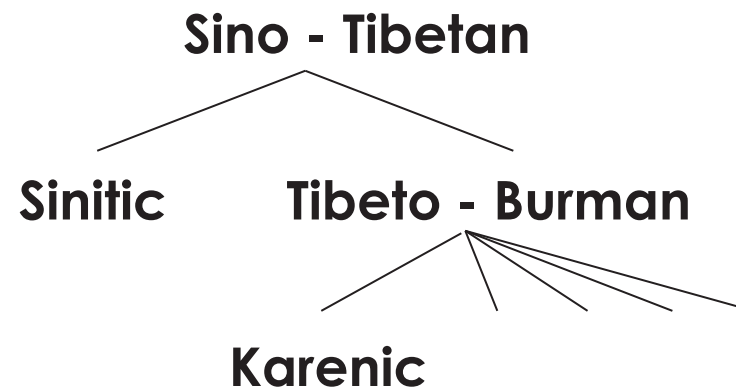
## Discussion (2)

- Genetic relationship

☐ A



☒ B





## Discussion (3)

- The names of some aggressive wild animals, such as no. 4 'bear', no. 68 'tiger' etc., have become taboo words and have been replaced by euphemisms as in Sgaw Karen.
- The Karen language consultants could quickly recognise the animals when the pictures were shown to them during the interviews.



## Discussion (4)

- In the modernised mountainous areas of Thailand, it is noticeable that children remember fewer and fewer animal names in their own languages, especially non-domesticated animals, due to compulsory education with Thai as the medium of instruction, good transportation, the mass media and tourism.



## Discussion (5)

- In the near future, it is likely that only a few Karen animal names will be in the lexicon.
- Sooner or later a similar phenomenon will occur in Myanmar.



## Further Research

- A decrease of Karen words with an increase of Thai loanwords for animal names could provide a good case for studying “language change in progress” or “change in apparent time”, with regard to vocabulary loss and morphological change as well as sound change.



# Acknowledgements

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***Thank You***

## **Language Change in Progress: A Case Study of Southern Pwo Karen Animal Name Words**

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This paper is a continuation of the author's previous paper on Proto-Karen Fauna presented at SEALs 22 in May 2012. Seventy animal names selected from the seventy-three reconstructed Proto-Karen forms were used as a starting point. To conduct field research about 10 days in May and July 2012 for this present study, twenty Pwo men divided into two groups, 45-60 and 20-40, representing old and adult speakers, respectively, and ten Pwo boys (9-15) representing young speakers, were individually interviewed in Thai by the author at I-mat and I-sai villages in Kaen Makrut sub-district, Banrai district, Uthai Thani province. Animal pictures were shown to them during the interviews to ensure their recognition of each animal and its name. The research findings indicated that the two younger age groups (9-15 and 20-40) had lower lexical ranges compared to the older age group (45-60). Nowadays, with a decrease in hunting and an increase in transportation, compulsory education, mass media, rural development, tourism and so on, the younger groups are less and less familiar with wildlife. This contributes to native lexical attrition and lexical shift, i.e. increasing the use of Thai loanwords when it is necessary, since they are bilingual in Pwo and Thai. The research result can be regarded as evidence to support the concepts of “contact-induced language change” and “language change in progress or in apparent time”.



# **Language Change in Progress: A Case Study of Pwo Karen Fauna**

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**Paper presented at ICSTLL45 organized by  
Nanyang Technological University  
Singapore, 26-28 October, 2012**





# Outline of the presentation

- Research objectives
- Conceptual framework
- Field site
- Speech community
- Language contact situations
- Methodology
- Results
- Conclusion



# Research objectives

- To study lexical change in progress by investigating the knowledge of animal names among Pwo Karen speakers in three age groups: 45-60, 20-40 and 10-15.
- To predict the attrition and retention of the animal name words from the present to the future.



# Conceptual framework

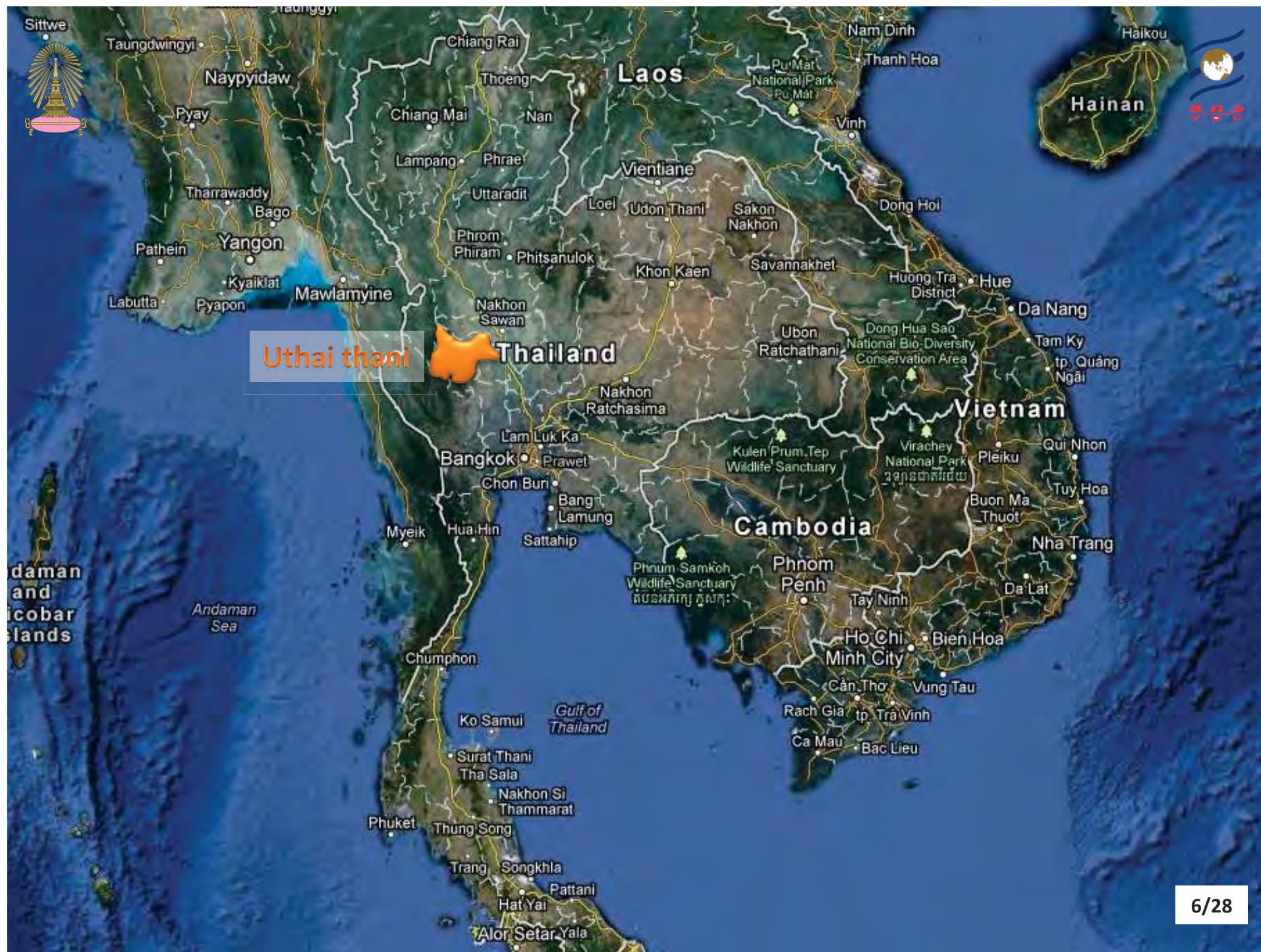
## “Contact Linguistics”

- Weinreich, U. (1968)
- Weinreich, U., W. Labov and M. Herzog (1968)
- Labov, W. (1994)
- Thomason, S.G. and T. Kaufman (1988)
- Thomason, S.G. (2001)
- Thomason, S.G. (2006)
- Thomason, S.G. (2005)
- Sankoff, G. (2004)
- Myers-Scotton, C. (2002)
- Winford, D. (2003)



# Field site (1)

- Uthai Thani is a province in the north-western region of Central Thailand.
- It consists of eight districts. Muang, Nong Khayang, Nong Chang, Thapthan, Sawang Arom, Lan Sak, Huai Khot and Ban Rai
- In the 60's and 70's, the mountains and jungles in the districts of Lan Sak, Huai Khot and Ban Rai were heavily infiltrated by communists.
- The mountainous areas of the three districts have been modernized since the 80's.





## Field site (2)

- **Kaen Makrut, founded in 1917, is one of the eight sub-districts of Ban Rai District.**
- **This mountainous area, where Pwo Karen speaking people live, is part of Huai Kha Khaeng Wildlife Sanctuary, a UNESCO world heritage site.**
- **There is a centre for the promotion of cold-climate plant agriculture.**



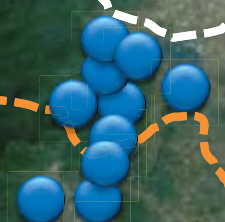
## Field site (3)

- The total population of Kaen Makrut Sub-district is 1,367, mostly Pwo Karen peasants and labourers (95%).
- Every village in Kaen Makrut has electricity, a water supply and public telephone.
- There are three schools (from kindergarten to secondary level), one hospital, one health-care centre, three Buddhist temples and a few tourist attractions.
- Seven Pwo men are members of the Sub-district Administrative Committee.



Huai Kha Khaeng Wildlife Sanctuary (office)

Ban Rai District



Tai  
Mai Khlong Angwa 1  
Khlong Salao  
Chao Wat  
Mai Khlong Angwa 2  
I-Mat  
I-Sai  
Phu Bon Mo Kho

Ban Rai Municipality



# **I-mat & I-sai speech community (1)**



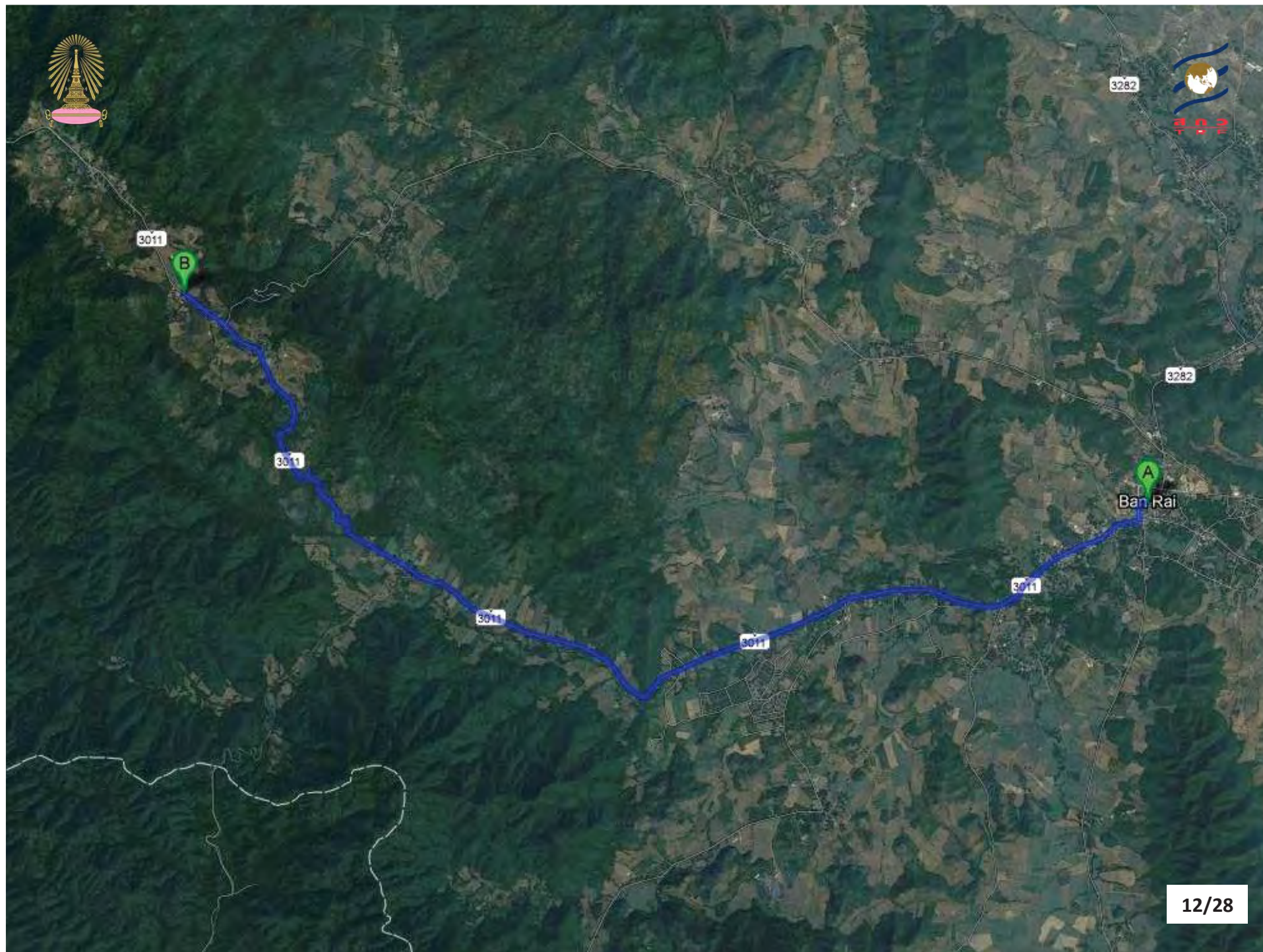
- **I-mat & I-sai villages were selected as the speech community for investigating progressive lexical change, i.e. animal name words.**
- **The Pwo Karen living in I-mat & I-sai, about three kilometres apart, always share administrative, social and cultural activities, so together the two villages are regarded as a single speech community.**



## **I-mat & I-sai speech community (2)**



- **I-mat & I-sai are 27 and 24 kilometres, respectively, from the municipality of Ban Rai District.**
- **They can be reached within half an hour by car, due to good road.**
- **Some families send their children to schools in town.**





## **I-mat & I-sai speech community (3)**



- **The two villages share a school, a temple and a hospital.**
- **The office of the Unit 73 of the Social Welfare Development Department and home stays are located in I-mat, while a centre of Karen cloth weaving is in I-sai.**
- **In December and January of every year, I-mat & I-sai become important tourist attractions.**



## **I-mat & I-sai speech community (4)**



- **Being members of the “Little Guide Programme”, children can earn a lot of money during the high season.**
- **Strawberries and other local agricultural produce and handicrafts are for sale along the road from I-sai to I-mat.**
- **Tulips and lilies are displayed in the garden of the Social Welfare Development (Unit 73) which is located in I-mat.**



## **I-mat & I-sai speech community (5)**



- **The total population is 343(189 + 154).**
- **Four generations of Pwo Karen speakers defined by age group and their degree of bilingualism can be found in this speech community: above 70, 45-60, 20-40 and below 15 years old.**
- **In everyday life, the 70<sup>+</sup> age group (rare) uses more Pwo and the 15<sup>-</sup> age group uses more Thai.**
- **No problem for outsiders in communicating in Thai with the Pwo in the four age groups because they are bilingual.**



## Four generations of S.Pwo Karen speakers

### *I-mat & I-sai speech community*



15+ age group



20-40 age group



45-60 age group



70+ age group



# Language contact situations (1)



- Code-switching between Pwo and Thai is very common.
- Some Pwo men and women are married to outsiders, i.e. Lao Wiang, Lao Khrang and Thais; however, only Pwo and Thai are used in the households.
- Thai is used in classrooms, public places and when outsiders are present.
- Young Pwo married couples speak Pwo to each other but speak Thai with their children.



## Language contact situations (2)



- Young people always visit the downtown of Ban Rai District on Friday evenings and at the weekend for some social activities and special food.
- Watching television is their favourite pastime.
- Mobile shops with loud speakers advertising their merchandise in Thai come to I-mat and I-sai villages almost everyday.
- Many men and women in the 20-40 age group have had an opportunity to work in the towns and cities of Central Thailand.



# Methodology (1)

- A word list with 70 animal name words selected from the reconstructed forms given in my paper on Proto-Karen (\*k-rjaŋ<sup>A</sup>) fauna was devised. (See Appendix in the handout.)
- It was used as a guideline for interviewing 30 Pwo-Thai bilinguals divided into three age groups: 45-60(45-58), 20-40(23-40) and 10-15(9-13), 10 in each group.



## Appendix

### Proto-Karen, Proto-Pwo and Southern Pwo Animal Names

1. ant \*dəŋ<sup>B</sup> [SP: thəi<sup>33</sup>; PP: \*thəuŋ<sup>4</sup>]
2. bamboo rat \*(jow<sup>B</sup>) khan<sup>A</sup> [SP: khə<sup>53</sup>]
3. bat \*pla<sup>A</sup>, \*p/bla<sup>B</sup> [SP: phla<sup>55</sup>]
4. bear \*tham<sup>A</sup> [SP: (pu<sup>11</sup>) thə<sup>53</sup>]
5. bedbug \*jram<sup>A</sup> [SP: phə<sup>53</sup> ~ phəi<sup>53</sup>]
6. bee (*Apis cerana*) \*k(h)wat<sup>D</sup> [SP: kwe<sup>31</sup>]
7. bee (*Apis dorsata*) \*k-hne<sup>A</sup> [SP: ni<sup>53</sup>; PP: \*ne<sup>1</sup>]
8. bird \*tho<sup>B</sup> [SP: thu<sup>55</sup>; PP: \*tho<sup>3</sup>]
9. boar (wild ~) \*thə<sup>D</sup> mi<sup>A</sup> [SP: thu<sup>221</sup> me<sup>31</sup>]
10. buffalo (water ~) \*b-na<sup>B</sup> [SP: pa<sup>221</sup> na<sup>33</sup>; PP: \*pəna<sup>4</sup>]
11. caterpillar \*si<sup>7</sup> ~ (?) [SP: sei<sup>31</sup> mi<sup>23</sup>]
12. catfish \*~ku<sup>A</sup>, \*~ku<sup>B</sup> [SP: (ja<sup>55</sup>) ku<sup>55</sup>]
13. centipede \*ʔda-ʔbaŋ<sup>A</sup> [SP: da<sup>221</sup> bə<sup>31</sup>]
14. chameleon, lizard \*khwi<sup>B</sup> [SP: khwi<sup>55</sup>]
15. chicken \*chjaX<sup>A</sup>, \*chjaN<sup>A</sup> [SP: chə<sup>53</sup>; PP: \*chan<sup>1</sup>]
16. civet cat \*njaj<sup>A</sup> [SP: ja<sup>31</sup>]
17. civet cat \*thu<sup>B</sup> [SP: thu<sup>221</sup> thə<sup>31</sup>]
18. crab \*chwe<sup>B</sup> [SP: chwe<sup>55</sup>; PP: chwe<sup>3</sup>]
19. cricket \*s-ki<sup>A</sup> [SP: kha<sup>221</sup> rai<sup>245</sup>]
20. crocodile \*s-hma<sup>B</sup>, \*s-ʔma<sup>B</sup> [SP: ma<sup>55</sup>]
21. deer (barking ~) \*d-khej<sup>A</sup> [SP: khe<sup>53</sup> bə<sup>31</sup>]
22. deer (*sambha* ~) \*t-khro<sup>D</sup>, \*t-gro<sup>A</sup> [SP: chə<sup>33</sup> xo<sup>31</sup>]
23. dog \*thwi<sup>B</sup> [SP: thwi<sup>55</sup>; PP: \*thwi<sup>3</sup>]
24. dove \*(tho<sup>B</sup>) lwi<sup>B</sup> [SP: (thu<sup>55</sup>) lwi<sup>31</sup>]
25. earthworm \*k-lje<sup>D</sup> [SP: chə<sup>53</sup> ka<sup>221</sup> li<sup>245</sup>]
26. elephant \*k-chaŋ<sup>A</sup> [SP: ka<sup>221</sup> chə<sup>53</sup>; PP: kachan<sup>1</sup>]
27. fish \*da<sup>D</sup> [SP: ja<sup>55</sup>; PP: \*ja<sup>3</sup>]
28. flea \*kli<sup>A</sup>, \*kli<sup>D</sup> [SP: khlei<sup>53</sup>]
29. fox, wolf \*thwi<sup>B</sup> mi<sup>A</sup> [SP: thwi<sup>55</sup> me<sup>31</sup>]
30. frog \*ʔde<sup>B</sup> [SP: di<sup>53</sup>]
31. grasshopper \*ʔdwe<sup>B</sup> [SP: thwe<sup>33</sup>]
32. hawk \*lek<sup>D</sup> [SP: lai<sup>245</sup>]
33. hornet \*phrim<sup>A</sup>, \*phrin<sup>A</sup> [SP: \*phlāi<sup>53</sup>]
34. horse \*k-se( )<sup>1</sup> [SP: ka<sup>221</sup> ʔi<sup>55</sup>; PP: \*kəse<sup>3</sup>]
35. leech (land ~) \*swa<sup>D</sup> [SP: wa<sup>233</sup>]
36. leech (water ~) \*k/s-lej<sup>A</sup> [SP: lei<sup>31</sup>]
37. lemur (flying ~) \*p/ble<sup>D</sup> [SP: phlai<sup>245</sup>]
38. loris \*k-ch( )N<sup>A</sup> [SP: ka<sup>221</sup> chəi<sup>53</sup>]
39. louse(chicken), insect \*gra<sup>B</sup> [SP: (chə<sup>53</sup>) xa<sup>33</sup>]
40. louse (head ~) \*swiX<sup>B</sup> [SP: ʔəi<sup>55</sup>; PP: \*səuŋ<sup>3</sup>]
41. maggot \*hl/ʔlon<sup>B</sup> [SP: lou<sup>55</sup>]
42. millipede \*k/s-waj<sup>A</sup>, \*k/s-waj<sup>B</sup> [SP: wai<sup>31</sup> di<sup>31</sup>]
43. mole \*(jow<sup>B</sup>) wi<sup>A</sup> [SP: wei<sup>31</sup>]
44. monitor lizard (land ~) \*kho<sup>D</sup> [SP: khəu<sup>231</sup>]
45. monitor lizard (water ~) \*~kre<sup>A</sup> [SP: ʔei<sup>31</sup>]
46. monkey \*k-jo<sup>D</sup> [SP: chə<sup>55</sup> ʔəu<sup>231</sup>; PP: \*chəʔəu<sup>25</sup>]
47. mouse, rat \*jow<sup>B</sup> [SP: jou<sup>33</sup>; PP: \*ju<sup>4</sup>]
48. ox \*bo<sup>B</sup> [SP: chə<sup>33</sup> nəi<sup>53</sup>; PP: \*khlaui<sup>4</sup>]
49. pangolin, anteater \*jo<sup>A</sup> [SP: ji<sup>31</sup>]
50. parrot \*(tho<sup>B</sup>) ki<sup>B</sup>/ ki<sup>B</sup> ([SP: dai<sup>231</sup> ja<sup>245</sup> ka<sup>221</sup>])
51. peacock \*(tho<sup>B</sup>) bra<sup>D</sup> [SP: (thu<sup>55</sup>) sa<sup>245</sup> ~ sja<sup>245</sup> ~ ca<sup>245</sup>]
52. pheasant \*(tho<sup>B</sup>) re<sup>D</sup> [SP: (thu<sup>55</sup>) ʔai<sup>245</sup>]
53. pig \*thə<sup>D</sup> [SP: thu<sup>221</sup>; PP: \*tho<sup>25</sup>]
54. porcupine \*sun<sup>B</sup> [SP: chə<sup>33</sup> ʔəu<sup>245</sup> chəu<sup>55</sup>]
55. porcupine (*brush-tailed* ~) \*s-ʔba<sup>A</sup> [SP: ʔə<sup>33</sup> ba<sup>31</sup>]
56. quail \*(tho<sup>B</sup>) hr/ʔrwi<sup>3</sup> (?) [SP: (thu<sup>55</sup>) wei<sup>55</sup>]
57. rabbit, hare \*p-ʔde<sup>A</sup> [SP: pə<sup>31</sup> de<sup>31</sup>; PP: \*padai<sup>2</sup>]
58. serow, mountain goat \*jaj<sup>A</sup> [SP: chə<sup>33</sup> pha<sup>221</sup>]
59. sheep \*so<sup>A</sup>, \*so<sup>B</sup> ([SP: bi<sup>55</sup> 'goat'])
60. skink \*ble<sup>D</sup> [SP: phli<sup>245</sup> phlō<sup>33</sup>]
61. snail (land ~) \*khlo<sup>B</sup> [SP: khlu<sup>55</sup>; PP: \*khro<sup>3</sup>]
62. snail (water ~) \*s-ŋwi<sup>B</sup> [SP: khlu<sup>55</sup> mi<sup>55</sup>]
63. snake \*row<sup>B</sup> [SP: ʔəu<sup>33</sup> ~ ʔəu<sup>33</sup>; PP: \*yū<sup>4</sup>]
64. spider \*gaŋ<sup>A</sup> [SP: khə<sup>31</sup>; PP: \*khan<sup>2</sup>]
65. squirrel \*hl/ʔli<sup>B</sup>, \*hl/ʔli<sup>D</sup> [SP: lei<sup>55</sup>]
66. termite (winged ~) \*bi<sup>B</sup> [SP: phe<sup>31</sup>]
67. tick \*khej<sup>B</sup> [SP: khe<sup>55</sup>]
68. tiger \*khe<sup>A</sup> [SP: khi<sup>53</sup>]
69. toad \*(ʔde<sup>B</sup>) sow<sup>B</sup> [SP: di<sup>55</sup> ʔəu<sup>55</sup>]
70. tortoise \*khli<sup>D</sup> [SP: khlai<sup>231</sup>]
71. vulture \*hl/ʔlan<sup>A</sup> k-da<sup>D</sup> [SP: lə<sup>31</sup> ka<sup>221</sup> tha<sup>245</sup>]
72. wasp \*(dəŋ<sup>B</sup>) ʔde<sup>A</sup> [SP: (thə<sup>33</sup>) di<sup>31</sup>]
73. weevil \*roŋ<sup>B</sup> [SP: ʔəu<sup>33</sup> ~ ʔəu<sup>33</sup>]

#### Abbreviations

SP = Southern Pwo

PP = Proto-Pwo (Kato, 2009)





## Methodology (2)

- Each language consultant was separately interviewed in Thai for about an hour.
- Animal pictures were shown to them during the interviews to ensure their recognition of each animal and its name.
- They were told that the contents of the interview must be kept top secret.
- The data was tabulated and quantitatively analysed.

22/28



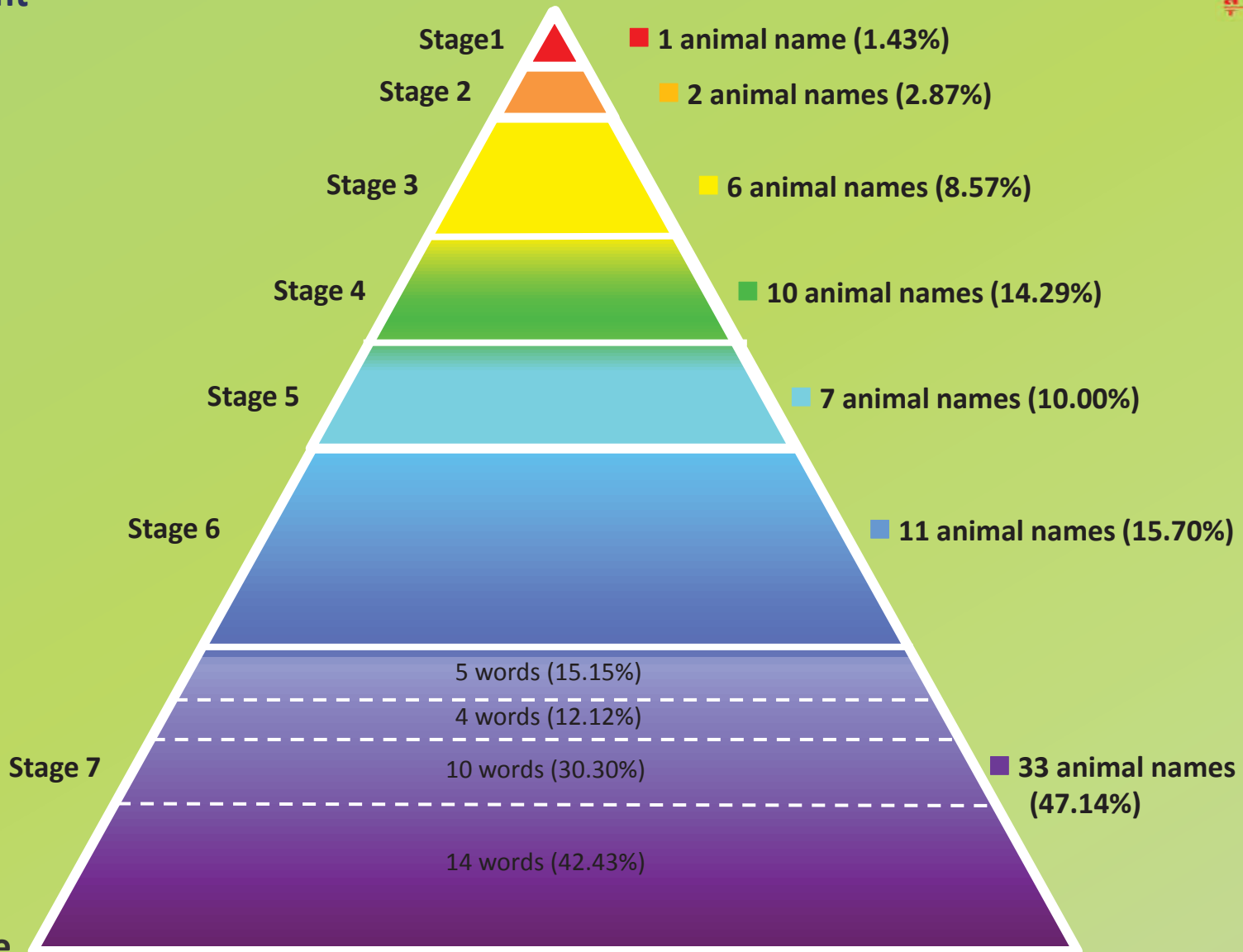
# Progressive lexical change of the 70 animal names (70 words = 100%)



Present

*Lexical change in progress*

Future





## Prediction of progressive lexical change in S. Pwo

### Fauna

Fewer and fewer native words but more and more Thai borrowings

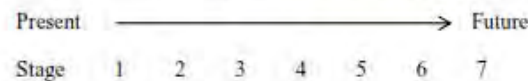
|                       |                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 LC (0%)             | Stage 1: weevil (1 word = 1.43%)                                                                                                                                                                                                                                                                                                               |
| 12-14 LCs (40-46.67%) | Stage 2: water leech, vulture (2 words = 2.87%)                                                                                                                                                                                                                                                                                                |
| 15-17 LCs (50-56.67%) | Stage 3: bedbug, land leech, lemur, brush-tailed porcupine, quail, serow (6 words = 8.57%)                                                                                                                                                                                                                                                     |
| 18-20 LCs (60-66.67%) | Stage 4: bee(Apis cerana), civet cat, sambhar deer, flea, mole, water monitor, pangolin, peacock, pheasant, spider (10 words = 14.29%)                                                                                                                                                                                                         |
| 21-23 LCs (70-76.67%) | Stage 5: crocodile, grasshopper, hawk, hornet, loris, maggot, wasp (7 words = 10.00%)                                                                                                                                                                                                                                                          |
| 24-26 LCs (80-86.67%) | Stage 6: bamboo rat, bear, caterpillar, centipede, barking deer, dove, chicken louse, head louse, porcupine, skink, tick (11 words = 15.70%)                                                                                                                                                                                                   |
| 27-30 LCs (90-100%)   | Stage 7: ant, bat, honey bee (Apis dorsata), *bird, wild boar, *buffalo, catfish, chameleon, *chicken, cicada, *crab, cricket, *dog, earthworm, *elephant, *fish, fox/wolf, *frog, horse, millipede, land monitor, *monkey, *mouse/rat, *ox, *pig, rabbit, snail, *snake, squirrel, winged termite, tiger, toad, *tortoise (33 words = 47.14%) |

**Notes:** 70 animal name words = 100%, see the Appendix

30 Pwo language consultants (LC) = 100%; 0% = none of the LCs remembers the native word

27-30 LCs = 90-100% of the LCs still remember the native words

14 words with \* are still remembered by almost all of the LCs (9-58 years old)





# Conclusion and discussion (1)



- The research findings indicated that the two younger age groups (9-13 and 23-40) had a lower Pwo lexical range compared with the older age group (45-58).
- Nowadays, with the decrease in hunting and the increase in transportation, compulsory education, mass media, rural development, tourism and so on, the younger groups are less and less familiar with wildlife. This has contributed to native lexical attrition and progressive lexical change, i.e. increasing the use of Thai loanwords, since they are bilingual in Pwo and Thai.



## Conclusion and discussion (2)



- In contact with Thai, the official language of the nation or the language of the majority, Pwo as a minority language cannot remain resistant to linguistic change in progress.
- With regard to animal name words, the names of wild animals will be lost more rapidly due to the fact that hunting has been forbidden in the mountainous and jungle areas where they live. At present, hunting is no longer part of Pwo men's daily routine nor hobbies.



## Conclusion and discussion (3)



- In the future, common animals such as ‘chicken’, ‘pig’, ‘dog’, ‘fish’, ‘bird’, ‘crab’, ‘frog’, and so forth, which can be seen around villages, will help remind the younger generation of their Pwo name words. This means that Thai borrowings will have a lower chance of replacing them.
- The research results can be regarded as evidence to support the concepts of “contact-induced language change” and “language change in progress”.



# ***Thank You***



## **Acknowledgements**

**I would like to express my gratitude to the Thailand Research Fund (TRF) for funding the Karen Linguistics Project for three years from 2009-2012. Many thanks go to my Pwo Karen friends and the local authorities for their kind co-operation. I also feel thankful to my research assistants, Sujinat Jitwiriyanont and Siwaporn Tuanthaisong, for typing the manuscript and providing all kinds of assistance.**

## **ผศ.ดร. มณีนทรา ธีรานนท์**

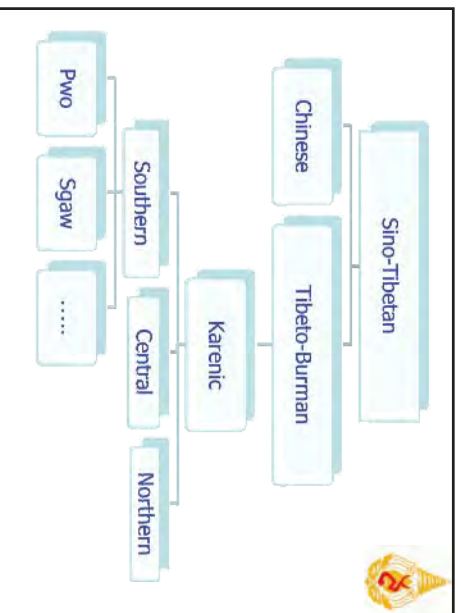
**An acoustic study of clear vowel vs. nasal vowel in**

**Pwo Karen: An implication to tonogenesis theory**



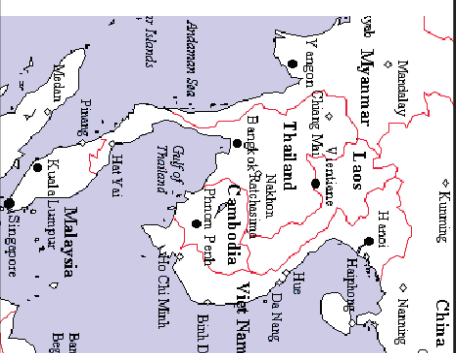
## An acoustic study of clear vowel vs. nasal vowel in Pwo Karen: an implication to tonogenesis theory.

Phanintra Teeeranon  
Mae Fah Luang University



### Language family in Southeast Asia (SEA)

1. Tai-Kadai
2. Austroasiatic: Mon-Khmer
3. Austronesian
4. Miao-Yao
5. Sino-Tibetan



### Pwo Karen

- A minority language
- Pwo Karen in ChiangRai Province, Thailand



Clear vowel /a/ vs. Nasal vowel /a<sup>3</sup>  
ba 'cheap' ba<sup>3</sup> 'bamboo shoot'



### Theoretical background

0. Tone language ex. Thai, Chinese, Vietnamese

maa + mid pitch 'to come'  
maa + rising pitch 'a dog'

1. internal factors to give birth to tones

1.1 initial consonants

| Meaning | 1 <sup>st</sup> period | 2 <sup>nd</sup> period | 3 <sup>rd</sup> period |
|---------|------------------------|------------------------|------------------------|
| 'earth' | pa                     | pa                     | pa + high tone         |
| 'girl'  | ba                     | pa                     | pa + low tone          |

1.2 vowel quality  
long vowel > low F0 > low tone  
short vowel > high F0 > high tone

2. external factors: language contact



# Theoretical background



|                     | Historical Linguistics | Acoustic Phonetics         |
|---------------------|------------------------|----------------------------|
| Initial consonants  | Tones                  | Fundamental frequency (F0) |
| Voiceless /p, t, k/ | High                   | High                       |
| Voiced /b, d, g/    | Low                    | Low                        |

- vocal cords tension, cricothyroid muscles
- various Southeast Asian (SEA) languages

## UNIVERSAL PHENOMENA

# Objectives



- To attest tonogenesis theory
- To investigate fundamental frequency; F0 in Hz
- pa vs. ba
- paꜜ vs. baꜜ

## Methods

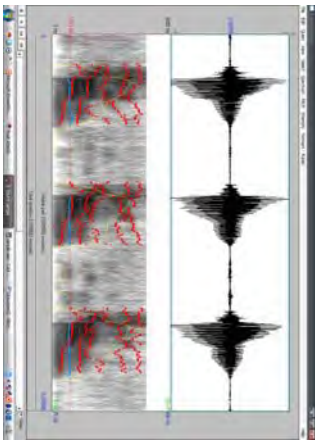


- Pwo Karen in ChiangRai Province, Thailand
- Test tokens
  - voiceless and voiced with mid tone
  - pa vs. ba      7 pairs
  - paꜜ vs. baꜜ    7 pairs
- Informants
  - 3 age groups : 60 (old), 40-35 (mid), 20 (young)
  - 5 subjects each group

## Methods



- Praat



## An acoustic study of clear vowel vs. nasal vowel

| Vowel quality     | Duration | Intensity | F0   | F1   | F2          |
|-------------------|----------|-----------|------|------|-------------|
| Clear vowel /a/   | Short    | High      | Low  | High | High or Low |
| Nasal vowel /aɔ̃/ | Long     | Low       | High | Low  | High or Low |

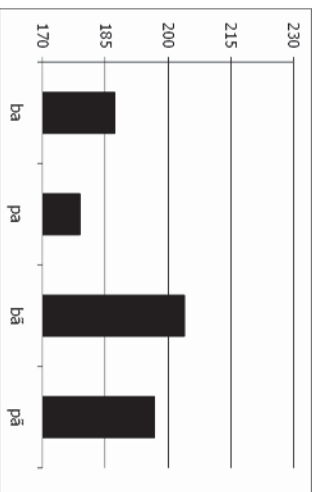


## Results

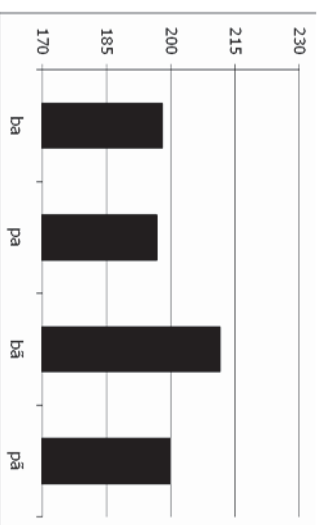
- Li (1977) nasal vowels behave like the voiceless consonants

- tongue position, higher level for nasal vowel and lower level for clear vowel

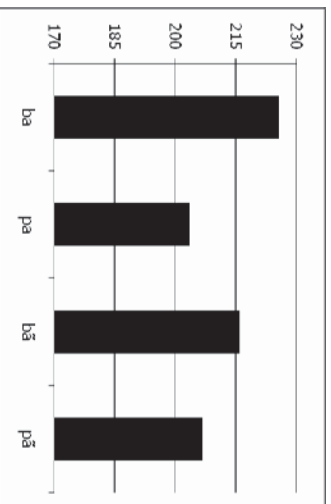
### The old age group



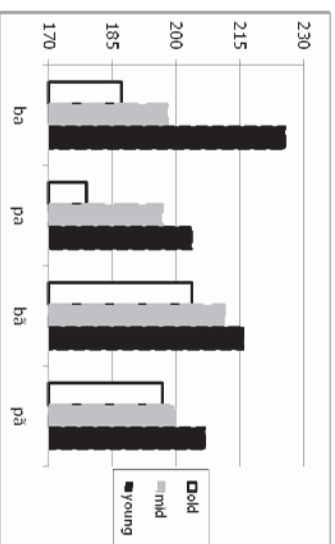
### The middle age group



### The young age group



### The 3-age-group: implications to tonogenesis



### Conclusion

| Initial consonants  | Tonogenesis theory         |  | This study                 |
|---------------------|----------------------------|--|----------------------------|
|                     | Fundamental frequency (F0) |  | Fundamental frequency (F0) |
| Voiceless /p, t, k/ | High                       |  | Low                        |
| Voiced /b, d, g/    | Low                        |  | High                       |

- the same uncommon phenomenon in voicing effect in a dialect of Beijing (Li, 1977)
- uncertain about the cause
- duration : the longer the vowel, the higher the pitch
- Not a universal phenomenon

### Acknowledgements

- Thailand Research Fund; TRF
- Prof. Dr. Theraphan L-Thongkum, Department of Linguistics, Chulalongkorn University
- Karen Informants



## อ.ดร. ชมนาด อินทอาจารักษ์

**Vowel and tone change in Phrae Pwo Karen:**

**Internal and external factors**

# Vowel and tone change in Phrae Pwo Karen: internal and external factors

Chommanad Intajamornrak



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# Introduction

- Pwo Karen is one of the six Karen languages spoken in Thailand, namely, Sgaw, Pa-O, Kayan, Kayah, and Kayaw; Pwo Karen and Sgaw Karen are the two languages with the greatest number of speakers.
- Pwo Karen can further be subdivided into dialects on the basis of classical criteria such as their degree of lexical similarity (or mutual intelligibility) and geographic distribution.



# Introduction

- The three examples below provide a glimpse into cross-dialect differences: presence of some non-cognate words, and differences in consonants, vowels and tones between cognates.

Sangkhla

**ea?**<sup>31</sup>

**na**<sup>21</sup>**kun**<sup>51</sup>

**phlɔ**<sup>51</sup>

Omkoï

**ea?**<sup>32</sup>

**nɛ**<sup>34</sup>

**ke**<sup>31</sup>**ma**<sup>45</sup>

Khangchai

**sa?**<sup>M</sup>

**na**<sup>L</sup>

**?an**<sup>M</sup>**klan**<sup>H</sup>

Gloss

‘heart’

‘ear’

‘to give’



# Introduction

- Khangchai dialect belongs to the Phare Pwo Karen dialect of Pwo Karen, which is also known as North-eastern Pwo (Lewis 2009).
- The speakers of Pwo Karen in Phrae Province have been settled in this area for a long time at least 150 years.
- Pwo Karen speaking people outnumber those of the other non-Tai ethnicities, e.g. Hmong, Akha, Lisu, and Mlabri.



# Introduction

- Khangchai Village is one of fourteen Pwo Karen speaking villages (in two districts); almost all the speakers are bilingual.
- They can speak Tai Yuan or Kham Mueang Phare, with the exception of some elderly speakers who are passive bilinguals.
- The young generation can also speak Standard Thai very well, since they are educated in school.



# Introduction

- The factors which bring about language variation and change can be distinguished into two groups, internal and external.
- Many scholars studied tonal variation and change (Akharawatthanakun 2002 and 2009, L-Thongkum 1994, Teeranon 2002) and found that acoustic characteristics of tones are influenced both by internal factors and by external factors.
- There are also generational differences in acoustic characteristics of vowels (Cox 1999, Decker and Mackenzie 2000).



# Introduction

- As the language used by different generations can provide insights into variation and change, this paper aims to *analyze and compare the acoustic characteristics of the vowels and tones of Phrae Pwo Karen as spoken by three generations.*



# Phonological system

## Phare Pwo Karen (Khangchai Village)

- Fieldwork data collected in 2010-2011 shows that the Pwo Karen dialect spoken at Khangchai Village has 21 consonant phonemes. Only /ʔ/ and /ŋ/ can occur in final position. There are 9 monophthongs and 4 diphthongs, without vowel length distinction. The tonal system comprises 4 tones in non-checked syllables and 2 tones in checked syllables.



# Methodology

- The data was collected at Khangchai Village in Wangchin District, Phrae Province.
- The wordlist of Pwo Karen vowels and tones was recorded directly on to computer using Adobe Audition version 2.
- Fifteen female informants were divided into three groups: over 60 years old, 35-50 years old and under 25 years old.



# Methodology

- The informants were asked to pronounce each test-word three times randomly, with a three-to-five second break between each word. The total number of test tokens was 405 for vowel analysis, and 810 for tone analysis.
- The formant frequencies were measured at every 10 millisecond between 25% - 75% using Praat version 5.1.43. Then, the variation of each vowel within its space was plotted by vowel plot program each graph for each speaker.



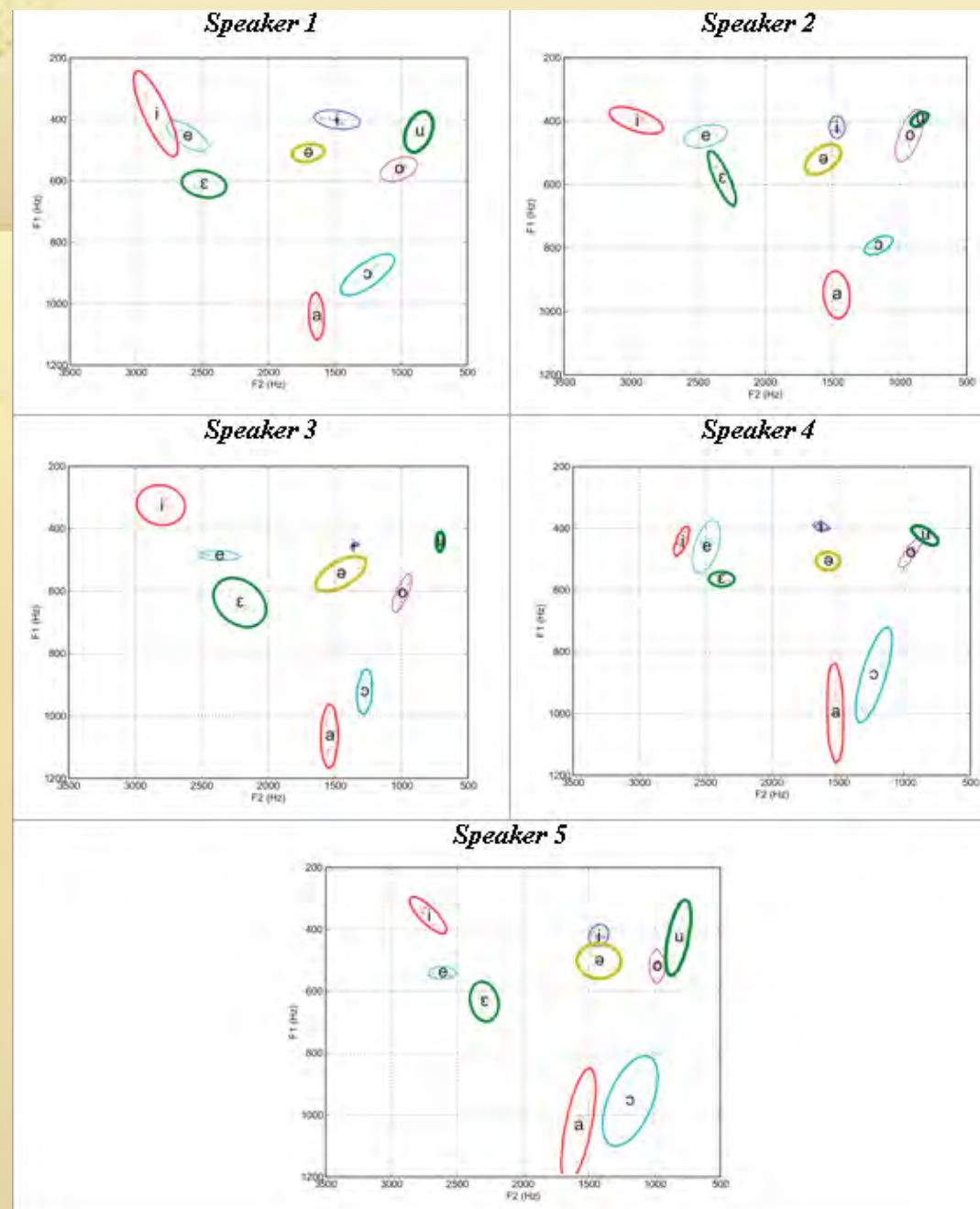
# Methodology

- The fundamental frequencies and formant frequencies were measured at every 10% of normalized duration using Praat version 5.1.43. The measured fundamental frequencies in Hertz were converted into semitones values.
- The formula was  $\text{semitones} = 3.32 \times 12 \times \text{Log} (\text{Hz to be translated} / \text{Hz reference level})$ .
- Microsoft Excel 2007 was used to analyze and plot graphs of the semitone values.



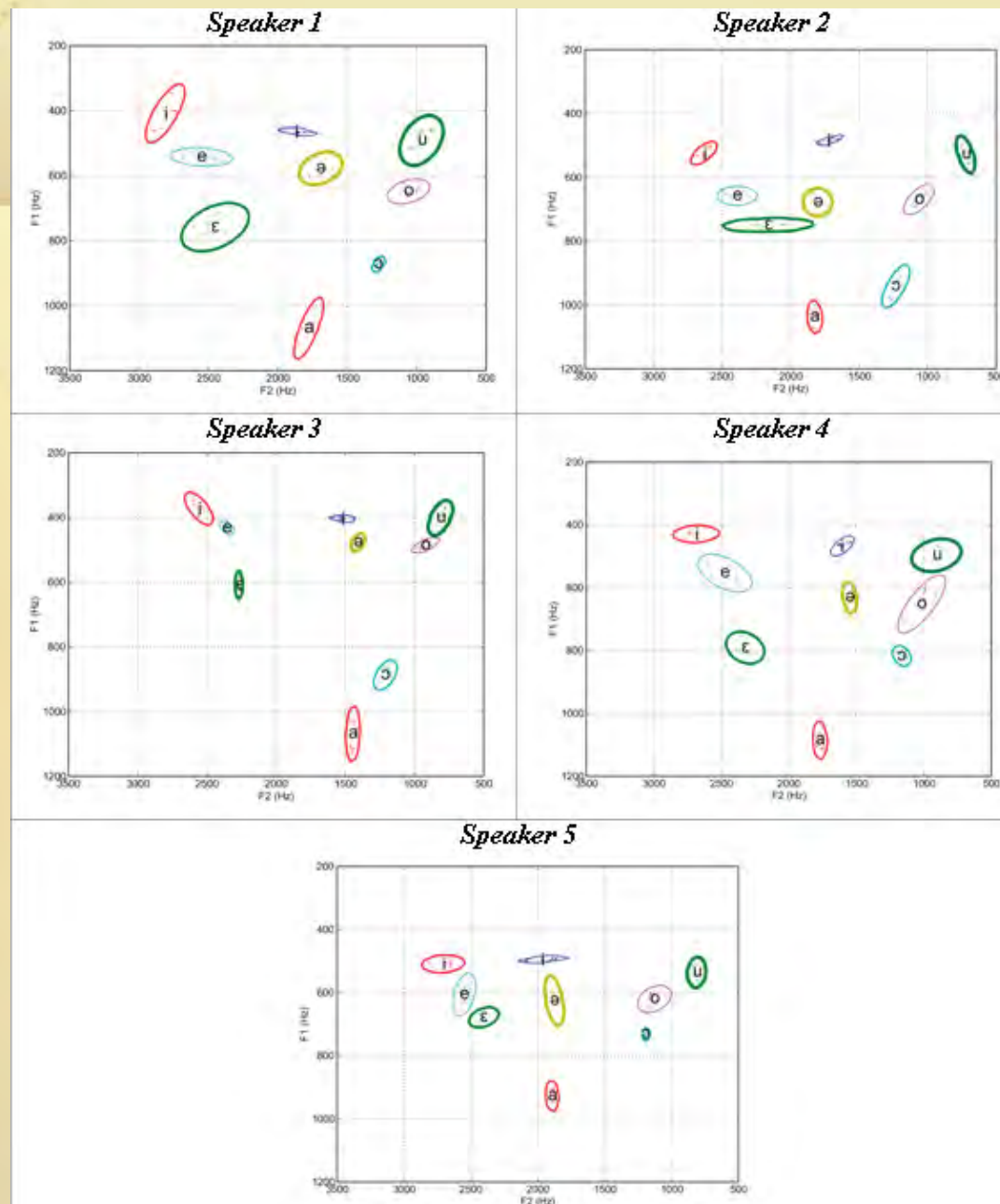
# Results

- **Figure 1** Formant frequencies of Phrae Pwo Karen vowels as spoken by five speakers of the over-60 group



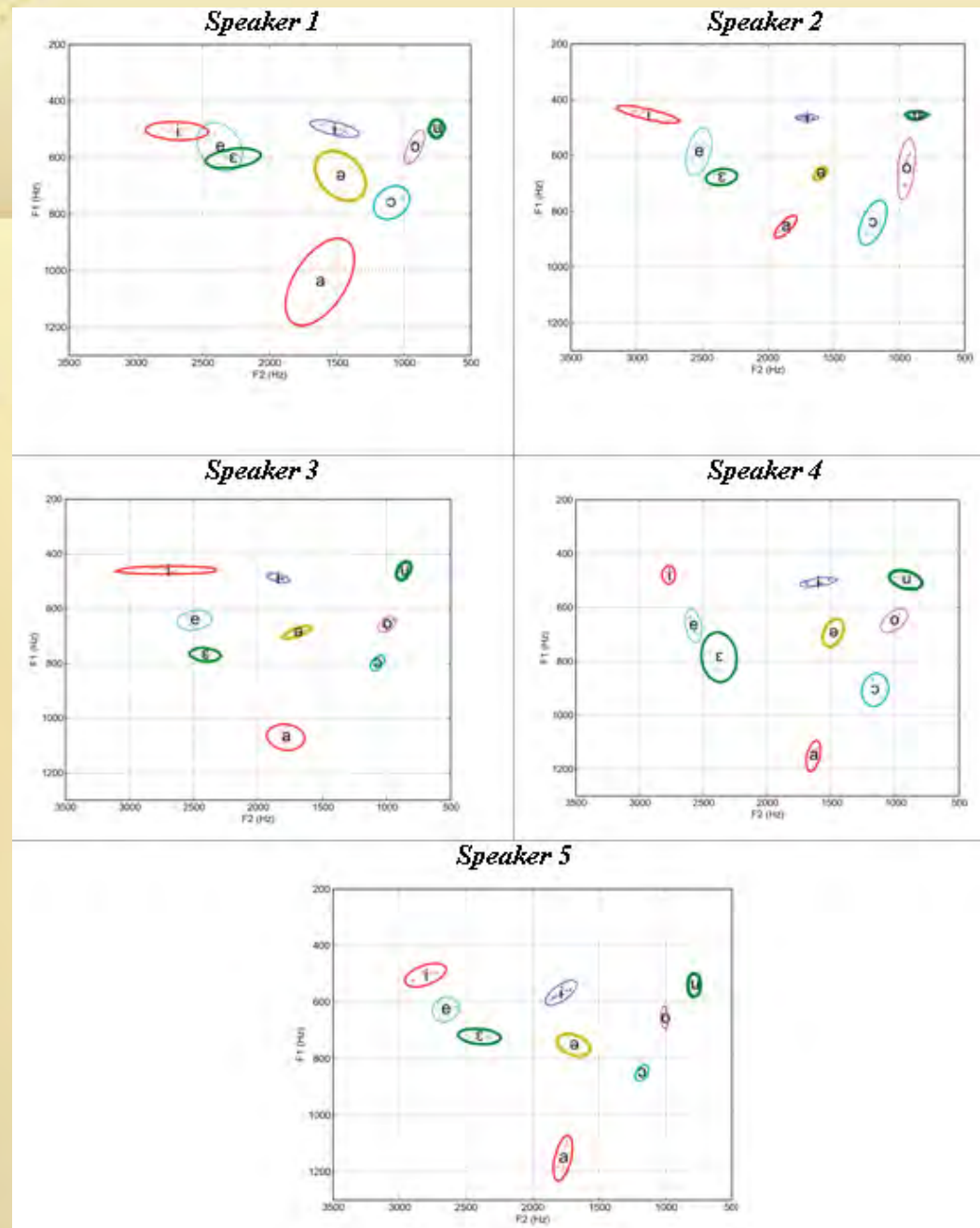
# Results

- **Figure 2** Formant frequencies of Phrae Pwo Karen vowels as spoken by five speakers of the 35-50 group

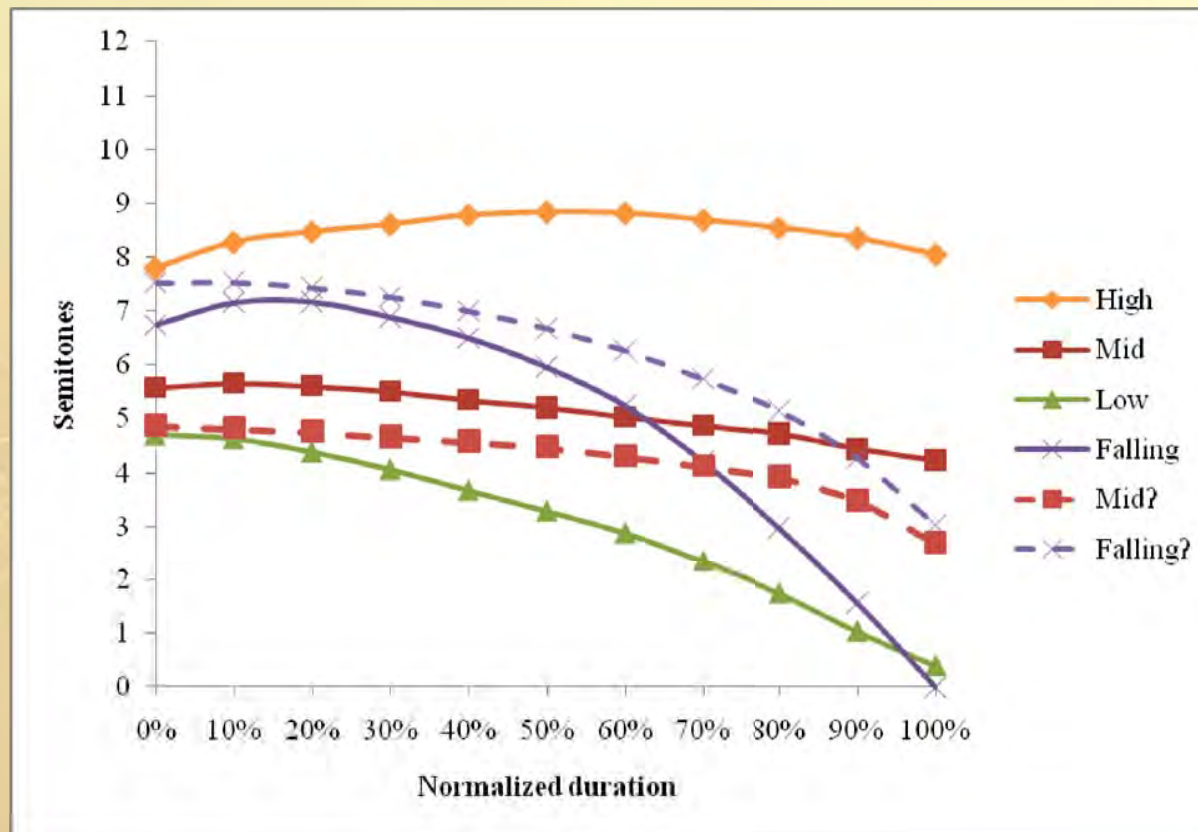


# Results

- **Figure 3** Formant frequencies of Phrae Pwo Karen vowels as spoken by five speakers of the under-25 group



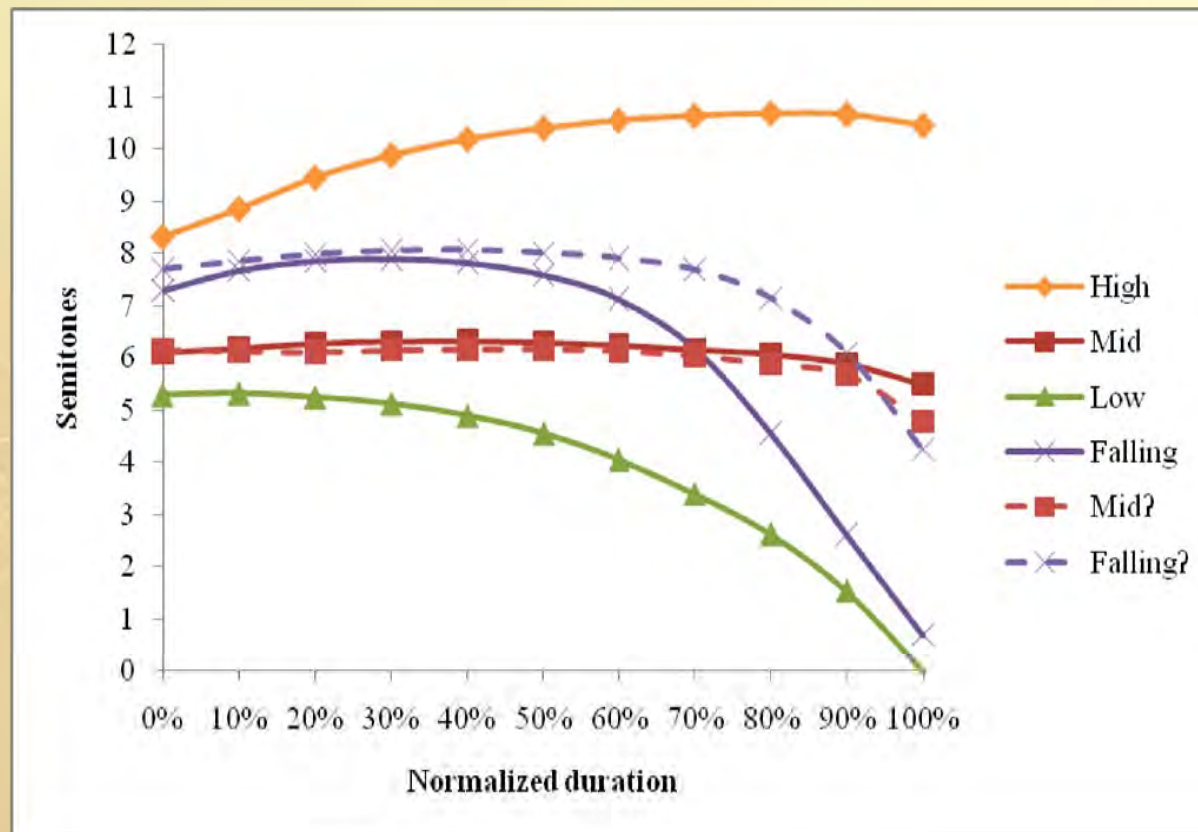
# Results



**Figure 4** Semitones of Phrae Pwo Karen tones as spoken by the over-60 group



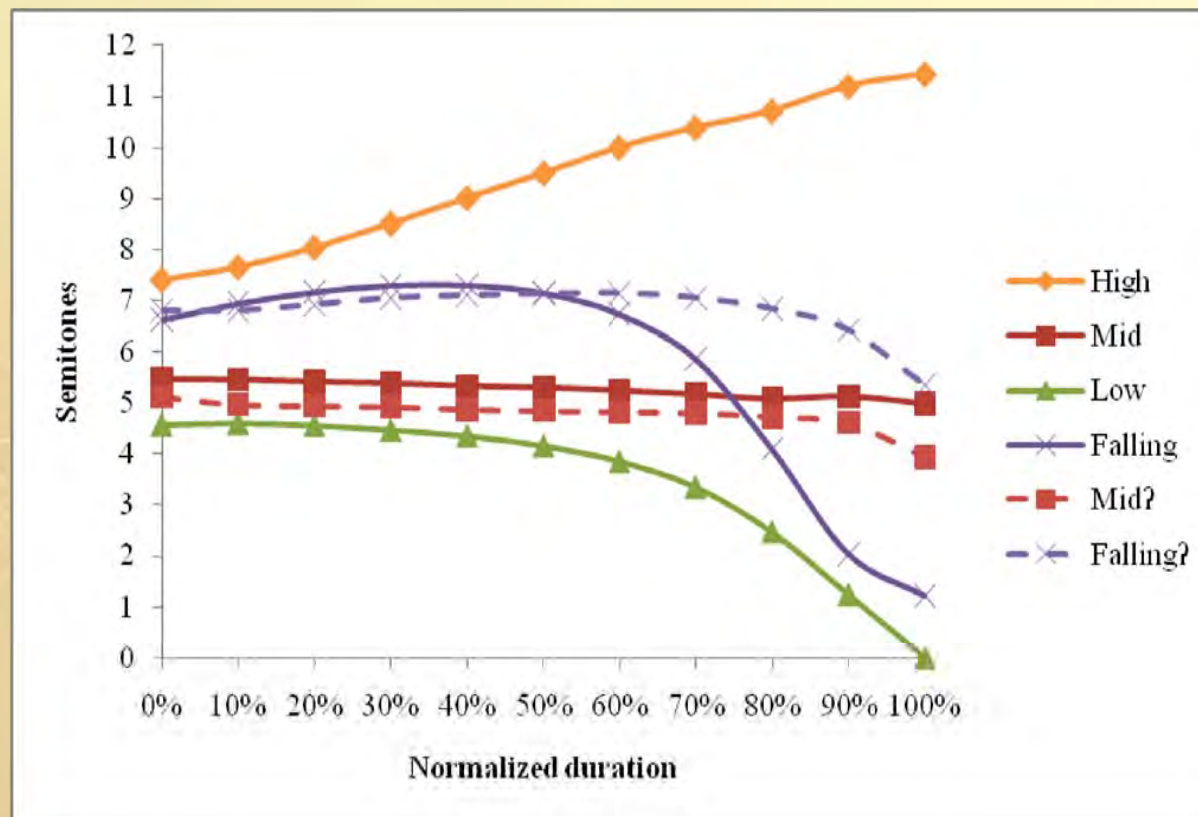
# Results



**Figure 5** Semitones of Phrae Pwo Karen tones as spoken by the 35-50 group



# Results



**Figure 6** Semitones of Phrae Pwo Karen tones as spoken by the under-25 group



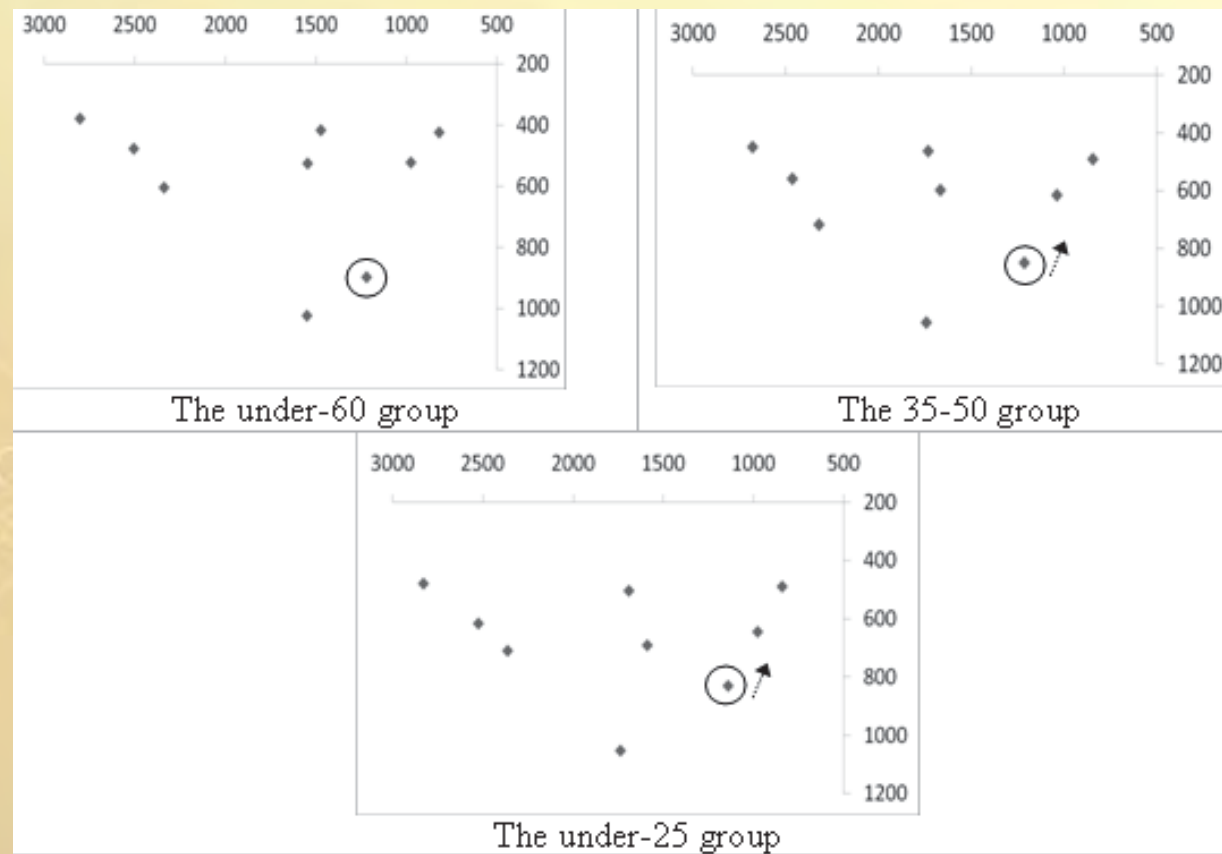
# Conclusion and discussion

## *Vowels*

- As mentioned in the Introduction, there are nine monophthongs in Phare Pwo Karen, without length distinction: /i e ε ɨ ə a u o ɔ/. The front vowels /i e ε/ occur very close to one another, i.e., with only a little difference in tongue height position (F1). The central vowels /ɨ, ə/ and the back vowels /u, o/ occur close to each other, whereas the vowels /a/ appears closely to the vowel /ɔ/.



# Conclusion and discussion



**Figure 7** of Phrae Pwo Karen vowels as spoken by three groups of speakers



# Conclusion and discussion

## *Tones*

- Recall that there are four tones in Phrae Pwo Karen namely the high tone, mid tone, low tone and falling tone.
- However, the acoustic characteristics of each tone reveal that: *the high tone* is high level starting at a high pitch and staying level to the end of the normalized duration; *the mid tone* is mid level starting at a mid pitch and then slightly falling over 75% of the duration; *the low tone* is mid-falling starting at a mid pitch and sharply falling to a low pitch; *the falling tone* is high-falling starting at a high pitch and sharply falling to a low pitch.



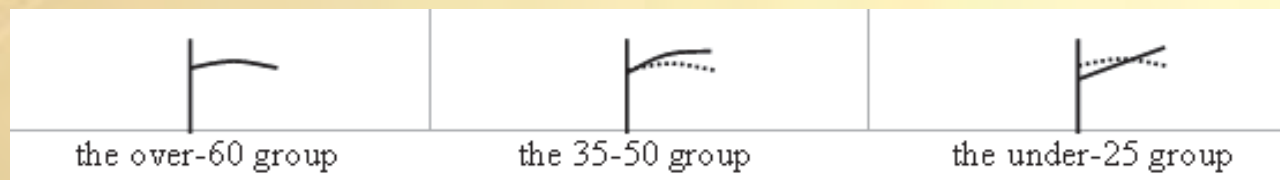
# Conclusion and discussion

- In checked syllables, the mid tone is mid level with the same contour as those in non-checked syllable; the falling tone is high-falling with less degree of pitch change than those occurring in non-checked syllables.
- However, the shape and contour of four tones as spoken by each group of the speakers are very similar except for the high tone. The onset shift of the high tone which changes the overall contour shape can be said to be internal change.



# Conclusion and discussion

- Pittayaporn (2007) proposes three mechanisms of tone change drawing from synchronic studies of tonal variation, i.e., 1) segment-tone interaction, 2) contextual variation, and 3) perceptual maximization



**Figure 8** The high tone as spoken by three groups of speakers



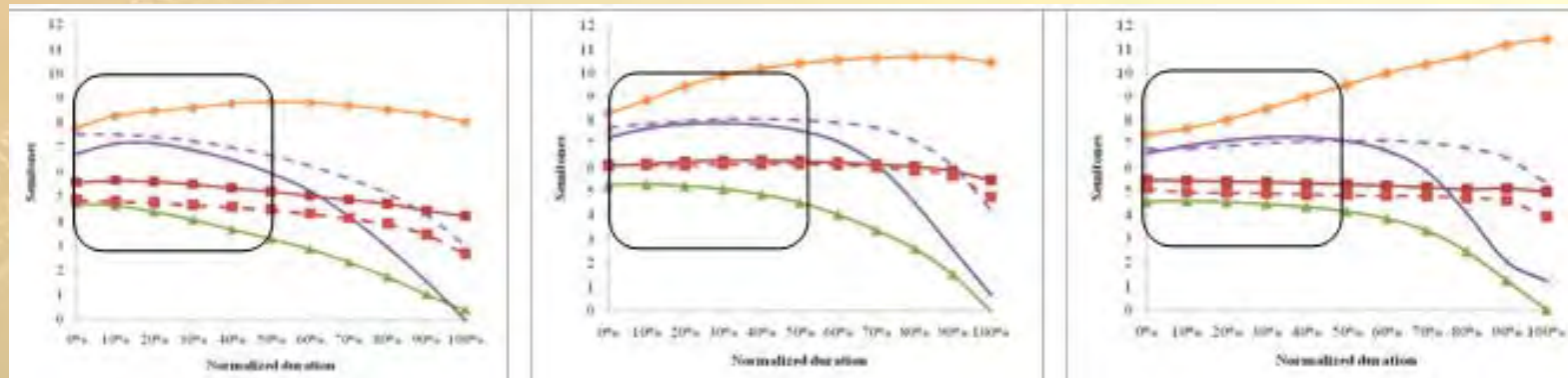
# Conclusion and discussion

- It might be considered that the change of the high tone in Phrae Pwo Karen is caused by perceptual maximization as found in the change of Thai tone 4 (high tone).
- Pittayaporn (2007) claims that the mechanism of change in Thai tone 4 is perceptual maximization since the change only occurred on the contour shape. Moreover, the rise of the tone is enhanced by the lowering of the first half of the tone to create a greater degree of pitch change.



# Conclusion and discussion

- It should be noted that the onset of the tone has changed as seen from the 50% of the tone duration. The difference of tonal space between each tone has reduced that is the starting point of each tone begins more closely.



# Conclusion and discussion

- In conclusion, the acoustic characteristics of the vowels and tones as spoken by three generations suggest that Phrae Pwo Karen is on its way of change.
- The change begins in the 35-50 group and obviously changes in the under-25 group or the young generation.
- The movement of the vowel /ε ɔ/ is caused by external factor or language contact with Tai languages; Tai Yuan and Standard Thai, whereas the change of tonal onset is caused by internal factor.



# Acknowledgement

- Thailand Research Fund (TRF)
- Naresuan University
- Professor Dr. Theraphan Luangthongkum  
“Karen Linguistics Project”
- Karen informants



## ภาคผนวก 3

เว็บไซต์ประชาสัมพันธ์โครงการ

<http://ling.arts.chula.ac.th/Karen/?p=1>

๒-๑๕๖

โครงการภาษาศิลปะสำหรับเด็กและเยาวชนของโครงการ (<http://img.arts.chula.ac.th/Karen/?p=1>)

(ไทย-อังกฤษ) ในทุกส่วน และเพื่อผลงานและการดำเนินงานอย่างต่อเนื่องของโครงการ เนื้อหาในเว็บไซต์ 2 ภาษา

## 1. ໜ້າແຮກ (First Page)

[illegible][illegible]

2. บทความเฉลิมพระเกียรติ (Article in Honour of H.R.H. Princess Maha Chakri Sirindhorn)

[illegible]

### 3. แนะนำโครงการ (Introduction of the Project)

[illegible]

โครงการพัฒนาศักยภาพบุคลากร

แนะนำโครงการ

[illegible][illegible]

The Karen people, an indigenous ethnic group of the mainland of South East Asia, have established their settlements from North to South, along the Thai-Burmese border since the pre-historic period. The population of this ethnic group in Burma is approximately 3.7 million (Ethnologue) and about 500,000 in Thailand. The Karen in Thailand are categorized into two groups. The first group has been here for a long time and some have thus become assimilated into the Thai way of life. These are the *Pwo* or the *Plong* and the *S'gaw* or the *Pagayaw*. The second group consists of those who have recently migrated to Thailand at different reasons – fleeing from famine or the political unrest in Burma or being led into Thailand by people in the mining business. These are the *Pai O* or the *Longph*, the *Kayah*, the *Koyan* or the *Long Phesee* and the *Kayaw* or the *Large*. Established Karen

The Karen belong to those ethnic groups that speak the Sino-Tibetan language, their way of life, beliefs, customs, traditions, rituals and rites as well as their costumes are unique. Academic research and studies have been conducted to provide background knowledge on these features and can be accessed through documentaries, various types of publication and websites, which have been created for academic and entertainment purposes. However, a selected bibliography (Manzon, 2004) shows that, during the past fifty years, there has been only one piece of research on the acoustics of the Karen languages (Aberson, 1959), other studies relate to descriptive, comparative or historical linguistics, while those based on traditional linguistic theory.

#### 4. โครงการย่อย (Sub-projects)

[illegible]

โครงการวิจัย

### Sub-projects

ИЗДАНИЕ МЕДИЦИНСКОГО НАУЧНОГО ЦЕНТРА

1. ได้คิดและวางแผนที่จะใช้สื่อใดบ้างในการจัดกิจกรรมการเรียนรู้ และใช้สื่อใดบ้างในการวัดผลและประเมินผล  
 2. ได้มีการสอน โดยใช้ สื่อ เทคโนโลยี และเทคนิค  
 3. การประเมินผลโดยใช้สื่อและเทคโนโลยีในการจัดกิจกรรมการเรียนรู้และในการวัดผลและประเมินผล การ  
สะท้อนผลการจัดการสอน  
 4. ปัญหาและอุปสรรคในการเรียนการสอนโดยใช้สื่อและเทคโนโลยีในการจัดกิจกรรมการเรียนรู้และในการวัดผลและประเมินผล  
 5. การพัฒนาสื่อและเทคโนโลยี

Summary

## Chommanad Intajamornrak

- Variation and change in Praise Poet Karen vowels and tones spoken in Ban Khong Chai, an acoustic study
- Vowel and tone changes in Praise Poet Karen internal and external factors
- Variation and change in Praise Poet Karen vowels and tones spoken in Ban Khong Chai, An acoustic study

ในส่วนของการร่อยรอย ประกอบด้วยชื่อโครงการร่อยรอยต่างๆ ของผู้ร่วมวิจัย และอ็อปโพสิตเฟลปส์ภาคีย่อย

5. ทีมวิจัย (Research Team)



ภาควิชาภาษาศาสตร์  
คณะอักษรศาสตร์  
มหาวิทยาลัยจุฬาลงกรณ์  
มหาวิทยาลัยราชภัฏวชิรเวศน์  
มหาวิทยาลัยราชภัฏวชิรเวศน์

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โครงการวิจัย

6. การสำรวจภาคสนาม (Field Surveys and Research Sites)



ภาควิชาภาษาศาสตร์  
คณะอักษรศาสตร์  
มหาวิทยาลัยจุฬาลงกรณ์  
มหาวิทยาลัยราชภัฏวชิรเวศน์  
มหาวิทยาลัยราชภัฏวชิรเวศน์

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โครงการวิจัย  
โครงการวิจัย





**โครงการทางวิชาการแห่งแรกที่มหาวิทยาลัยราชภัฏวชิรเวศน์**  
**Kasorn Bhumwong Project**  
Kasorn Bhumwong Project  
The 14th Chula Academic Expo  
The 14th Chula Academic Expo

มหาวิทยาลัยราชภัฏวชิรเวศน์  
Kasorn Bhumwong Project  
The 14th Chula Academic Expo  
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มหาวิทยาลัยราชภัฏวชิรเวศน์  
Kasorn Bhumwong Project  
The 14th Chula Academic Expo  
The 14th Chula Academic Expo

โครงการทางวิชาการแห่งแรกที่มหาวิทยาลัยราชภัฏวชิรเวศน์ วิชาการครั้งที่ 14  
Kasorn Bhumwong Project Organizes an Exhibition in the 14th Chula Academic Expo

โครงการทางวิชาการแห่งแรกที่มหาวิทยาลัยราชภัฏวชิรเวศน์ วิชาการครั้งที่ 14 ในวันที่ 14-15 มิ.ย. 2555 โครงการทางวิชาการแห่งแรกที่มหาวิทยาลัยราชภัฏวชิรเวศน์ วิชาการครั้งที่ 14 ในวันที่ 14-15 มิ.ย. 2555 โครงการทางวิชาการแห่งแรกที่มหาวิทยาลัยราชภัฏวชิรเวศน์ วิชาการครั้งที่ 14 ในวันที่ 14-15 มิ.ย. 2555



9. บทความและพาวเวอร์พอยต์เสนอในการประชุมวิชาการนานาชาติ



**โครงการทางวิชาการแห่งแรกที่มหาวิทยาลัยราชภัฏวชิรเวศน์**  
**Kasorn Bhumwong Project**  
Kasorn Bhumwong Project  
The 14th Chula Academic Expo  
The 14th Chula Academic Expo

มหาวิทยาลัยราชภัฏวชิรเวศน์  
Kasorn Bhumwong Project  
The 14th Chula Academic Expo  
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Kasorn Bhumwong Project  
The 14th Chula Academic Expo  
The 14th Chula Academic Expo

บทความและพาวเวอร์พอยต์เสนอในการประชุมวิชาการนานาชาติ  
Papers and PowerPoints Presented at International Conferences

1. Probe Kasorn Words/View as Reflected in the Use of Modern Kasornic Language, Suvon, Poon, Pao, Kanyak, Kanyak and Kanyak  
(Submitted to the 14th Chula Academic Expo)
2. A Comparison between the Speech of Borneo-colored Noddy and Non-borneo-colored Noddy Kasorn Speakers An Academic Study  
(Submitted to the 14th Chula Academic Expo)
3. Numerals and Classifiers in Modern Kasornic Language and Probe Kasorn  
(Submitted to the 14th Chula Academic Expo)
4. Probe Kasorn (Kasornic) Language  
(Submitted to the 14th Chula Academic Expo)
5. Language Change in Progress: A Case Study of Southern Poon Kasorn Animal Name Words  
(Submitted to the 14th Chula Academic Expo)

โครงการทางวิชาการแห่งแรกที่มหาวิทยาลัยราชภัฏวชิรเวศน์ วิชาการครั้งที่ 14 ในวันที่ 14-15 มิ.ย. 2555

มหาวิทยาลัยราชภัฏวชิรเวศน์  
Kasorn Bhumwong Project  
The 14th Chula Academic Expo  
The 14th Chula Academic Expo

ในส่วนดังกล่าว ประกอบด้วยไฟล์ที่คัดย่อและพาวเวอร์พอยต์ของบทความที่นำเสนอในการประชุม  
วิชาการนานาชาติ ให้ผู้ที่สนใจสามารถดาวน์โหลดได้

10. ประโยชน์ต่อสังคม (Social Contribution)

[illegible]

ในส่วนของการประชุมเพื่อตั้งกรม ประกอบด้วยการประสานงานแต่งตั้งบุคลากร และ  
ในส่วนของประโยชน์ต่อสังคม ประกอบด้วยภาพบรรยากาศการจัดงานแสดงศิลปวัฒนธรรมปะโอ และ  
อิทธิพลผลงานของทางโครงการภาษาสตรีกาษากะเหรี่ยงในรูปแบบอิเล็กทรอนิกส์ ๒ ไฟล์หนึ่งคือสารคดี  
ประกอบภาพสี “เรื่องเล่าจากหยาแดนไทย-พม่า : ประกายไฟทางปัญญาเพื่อการพัฒนาอย่างยั่งยืน” และ ๒ ไฟล์แผนที่  
แหล่งตั้งถิ่นฐานกะเหรี่ยงกลุ่มต่างๆ ในบริเวณภาคเหนือและภาคตะวันตกของไทย

## 11. ติดต่อเรา (Contact Us)



# โครงการศึกษาต่างประเทศ Kaen University Project

**หน้าปก**  
Cover  
First Page

**บทนำ**  
Introduction of the Project

**บทคัดย่อ**  
Abstract

**บทสรุป**  
Conclusion

**บรรณานุกรม**  
Bibliography

**เอกสารแนบ**  
Appendix

**หน้าสุดท้าย**  
Last Page

**บทนำ**  
Introduction of the Project

**บทคัดย่อ**  
Abstract

**บทสรุป**  
Conclusion

**บรรณานุกรม**  
Bibliography

**เอกสารแนบ**  
Appendix

**หน้าสุดท้าย**  
Last Page

## ติดต่อเรา

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หน้าดังกล่าว ให้ข้อมูลเพื่อการติดต่อทางโครงการ พึ่งทางไปรษณีย์ โทรศัพท์ โทรสารและทางอีเมล

ปัจจุบัน (ข้อมูล ณ วันที่ 8 มกราคม 2556) มีสถิติการเข้าชมเว็บไซต์ของโครงการภาษาสตรีกาษา

กะให้ยังจำนวน 10291 ครั้งของการเข้าชม

## ภาคผนวก 4

นิทรรศการผลงานของโครงการในงานหุ่สาขา วิชาการครั้งที่ 14

<http://ling.arts.chula.ac.th/Karen/?p=1>

## โครงการภาษาสตร้าภาษากะเหรี่ยงร่วมแสดงนิทรรศการผลงานทางวิชาการของโครงการฯ ในงานอุฬาฯ วิชาการครั้งที่ 14

โครงการภาษาสตร้าภาษากะเหรี่ยงได้ร่วมแสดงนิทรรศการผลงานทางวิชาการของโครงการฯ ในงานอุฬาฯ วิชาการครั้งที่ 14 ระหว่างวันที่ 14-18 พ.ย. 2555 โดยร่วมกับชมรมภาษาสตร้า คณะอักษรศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ที่อาคารบรมราชกุมารี จุฬาลงกรณ์มหาวิทยาลัย โดยประชาสัมพันธ์ให้ผู้ที่มีส่วนร่วมทั้งคณาจารย์ นิสิต นักศึกษา และบุคคลทั่วไป ทราบถึงความเป็นมา ผลงานของทางโครงการฯ และวิถีชีวิตของชาวกะเหรี่ยง

ในการนี้ สมเด็จพระเทพรัตนราชสุดาฯ สยามบรมราชกุมารี ได้เสด็จพระราชดำเนินเยี่ยมชมนิทรรศการของโครงการฯ โดยมีคณะผู้ร่วมโครงการเฝ้ารับเสด็จ เมื่อวันที่ 14 พฤศจิกายน 2555



โปสเตอร์แสดงความเป็นมาของโครงการ  
ภาษาสตร้าภาษากะเหรี่ยงและโครงการวิจัยย่อย 6  
โครงการ โครงการวิจัย 3 ปี (2552-2555) ได้รับทุน  
สนับสนุนการวิจัยจากสำนักงานกองทุนสนับสนุน  
การวิจัย (สกว.)



โปสเตอร์แสดงโครงการวิจัยย่อย 2 โครงการ แผนที่  
แสดงการกระจายของกะเหรี่ยง 6 กลุ่ม ได้แก่ สะกอ  
โป ปะโอ กะยา กะชัณ และกะยอ ที่ตั้งถิ่นฐานอยู่ใน  
บริเวณภาคเหนือและภาคตะวันตกของประเทศไทย  
และภาพแสดงวิถีชีวิตของชาวกะเหรี่ยง



โปสเตอร์แสดงเบื้องหลังการจัดทำหนังสือสารคดี ประกอบภาพสี่ “เรื่องเล่าจากชายแดน ไทย-พม่า: ปลายทางปัญญาเพื่อการพัฒนาอย่างยั่งยืน” เพื่อเป็นประโยชน์ต่อบุคคลทั่วไปในสังคม เน้นหาส่วนหนึ่งของหนังสือเป็นเรื่องเกี่ยวกับโครงการตามพระราชดำริของพระบาทสมเด็จพระเจ้าอยู่หัว สมเด็จพระนางเจ้าพระบรมราชินีนาถ และสมเด็จพระเทพรัตนราชสุดาฯ สยามบรมราชกุมารี รวมทั้งภาพแสดงวิถีชีวิตของชาวกะเหรี่ยง



จัดแสดงหนังสือสารคดีประกอบภาพสี่ และมอบเป็นของขวัญให้กับผู้ชม นิทรรศการที่สนใจเรื่องชาวกะเหรี่ยง 6 กลุ่มในประเทศไทย



บริเวณ นิทรรศการ ตกแต่งด้วยผ้าทอกะเหรี่ยง ศิลปหัตถกรรมฝีมือชาวกะเหรี่ยงสะกอ (ปกากะญอ) กับกะเหรี่ยงโป (โพลั่ว/ โพล่ง) และพืชผักสวนครัว



ผู้ร่วมโครงการอธิบายและให้ข้อมูลเกี่ยวกับ  
โครงการแก่นักเรียนและผู้ชมนิทรรศการ



นักเรียนมัธยมร่วมเล่นเกมตอบปัญหาในห้องชมรม  
ภาษาศาสตร์ คำถามส่วนหนึ่งเป็นคำถามเกี่ยวกับ  
นิทรรศการโครงการภาษาศาสตร์ภาษาละเหวียง



# โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



## แนะนำโครงการ

โครงการ "ภาษาศาสตร์ภาษากะเหรี่ยง"  
มีวัตถุประสงค์ดังนี้

1. เพื่อวิเคราะห์ภาษากะเหรี่ยง 6 กลุ่ม ได้แก่ กะสกอ โป ปะโอ กะยา กะยีน และกะยอ ด้านกลศาสตร์ สัทวิทยา รวมทั้งภาษาศาสตร์เปรียบเทียบและเชิงประวัติในแง่มุนที่ยังไม่เคยมีการศึกษาวิจัยมาก่อน โดยใช้ประเด็นปัญหาทางภาษาศาสตร์ที่ต้องการหาคำตอบเป็นสำคัญและนำเสนอผลการวิจัยเป็นบทความภาษาอังกฤษ

2. เพื่อจัดทำหนังสือ 2 ภาษา ไทย-อังกฤษ ประกอบภาพ "เรื่องเล่าจากชายแดนไทย-พม่า: ปรากฏไฟฟ้าทางปัญญาเพื่อการพัฒนาอย่างยั่งยืน" เสริมแหม่มมุมมองด้านนโยบายการพัฒนาชุมชนและการท่องเที่ยวของจังหวัดที่มีคนกะเหรี่ยงอาศัยอยู่ ในการดำเนินเรื่อง จะเห็นกลุ่มชาติพันธุ์กะเหรี่ยง รวมทั้งโครงการส่วนพระองค์และโครงการตามพระราชดำริที่เกี่ยวข้องกับการพัฒนาคุณภาพชีวิตของคนกะเหรี่ยง

3. เพื่อช่วยสร้างเสริมความเข้าใจอันดีระหว่างชนในชาติ ซึ่งมีความหลากหลายด้านภาษาและวัฒนธรรม โดยใช้กลุ่มชาติพันธุ์กะเหรี่ยงเป็นกรณีตัวอย่าง ตามแนวทางของนักภาษาศาสตร์ที่เชี่ยวชาญทางด้านภาษาศาสตร์ภาคสนามเพื่อแสดงให้เห็นว่า "นักภาษาศาสตร์ช่วยชาติได้"



## Introduction of the Project

The objectives of the "Linguistics of the Karen Language" Project:

1. To analyze the phonetics and phonology of the six Karenic languages spoken in Thailand, namely, Sgaw, Pwo, PaO, Kayah, Kayan and Kayaw, as well as to carry out comparative and historical studies in aspects that have never been pursued before in the field of linguistics, relying on linguistic problems that need to find answers. The research findings will be published in English in the form of articles.

2. To publish a book, with illustrations, in Thai and English, Stories from the Thai-Burmese Border: Intellectual Sparks for Sustainable Development, in order to present a perspective on a policy for the development of community and tourism in the provinces where the Karen live. The stories will be presented with emphasis on the Karen ethnic groups. Her Royal Highness Princess Maha Chakri Sirindhorn's private projects and the projects organized by her initiatives that aim to improve the Karen's quality of life.

3. To promote a better understanding among the different groups of people in the nation, who vary in language and culture, using the Karen as a case-study. The study will be conducted within the guidelines of linguists specializing in linguistic field work to demonstrate that "linguists can also contribute to the development of the country".

ทุนวิจัยจากสำนักงานกองทุนสนับสนุนการวิจัย (สกว.)

Funded by the Thailand Research Fund (TRF)

<http://ling.arts.chula.ac.th/Karen>



# โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



โครงการย่อย  
Sub-projects



ผศ. ดร. ผณินทรา ธีรานนท์  
Assist. Prof. Phanintra Teeranon, Ph.D.

- ◆ อิทธิพลเสียงพยัญชนะต้นที่มีต่อพฤติกรรมการรบกวนค่าความถี่มูลฐานของสระสระธรรมดาและสระนาสิก: ข้อโต้แย้งจากภาษากะเหรี่ยงไป้านดอย
- ◆ Initial consonant voicing perturbation of the fundamental frequency of oral vowels and nasal vowels: A controversial case from Ban Doi Pwo Karen



อ. ดร. ชมนาด อินทจามนรรักษ์  
Dr. Chommanad Intajamnorrak

- ◆ การแปรและการเปลี่ยนแปลงของสระและวรรณยุกต์ภาษากะเหรี่ยงไป้านพ้ออันเกิดจากการสัมผัสภาษาไท
- ◆ Variation and change of the Phrae Pwo Karen vowels and tones induced by language contact with the Tai languages



ฟร็องซัวส์ ลองเงลลา  
Francois Langella

- ◆ กวาระหลายหน้าที่ของหน่วยคำเติมหน้า ?a?- (TB\*?a) ในภาษากะเหรี่ยงไป้านดงดำ
- ◆ Polyfunctionality in Pwo Karen: the case of ?a?- (<T-B pronominal prefix \*?a-)

ทุนวิจัยจากสำนักงานกองทุนสนับสนุนการวิจัย (สกว.)

*Funded by the Thailand Research Fund (TRF)*  
*<http://lingarts.chula.ac.th/Karen>*



# โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



## โครงการย่อย Sub-projects

ศุจินัฐ จิตวิริยพันธ์  
Sujinat Jitwiriyamongt

◆ วรรณยุกต์ภาษากะเหรี่ยงสะกอบ้านป่าละฮู:  
การวิเคราะห์คำเซมิโทนส์ เส้นแนวโน้มน้ำและสัมประสิทธิ์  
ของสมการพหุนามกำลังสอง

◆ Ban Pa La-u Sgaw Karen tones:  
an analysis of semitones, quadratic trendlines  
and coefficients



กานต์ธิดา เกิดผล  
Karthida Kerdpol

◆ การปรับเปลี่ยนของค่าความถี่ฟอร์แมนท์ ณ ช่วงรอยต่อ  
ตัวบ่งชี้สำคัญของการจำแนกฐานการณัพยัญชนะนาสิกใน  
ภาษากะเหรี่ยงสะกอ บ้านป่าละฮู

◆ Formant transitions as effective cues to  
differentiate the places of articulation of  
Ban Pa La-u Sgaw Karen nasals



## ผู้ประสานงาน Co-ordinators



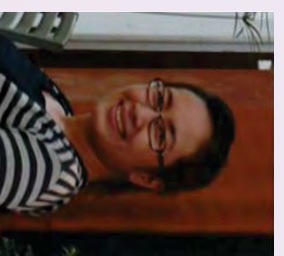
ฉัตริยา ชูรัตน์  
Chatreeya Churat



ศิวพร ทานไธสง  
Siwaporn Tuanthaisong



นรินทร์ เบิร์  
Narinthorn Behr



ยานินท์ สวรรค์คุณานนท์  
Yanin Sawanakunanon



# โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



## โครงการย่อย Sub-projects



ศ. ดร. ธีระพันธ์ เหลืองทองคำ  
(หัวหน้าโครงการวิจัยภาษาศาสตร์ภาษากะเหรี่ยง)  
Prof. Theraphan Luangthongkum, Ph.D.  
(Director, Karen Linguistics Project)

- ◆ การนับจำนวนและลักษณนามในภาษากลุ่มกะเหรี่ยงปัจจุบันและกะเหรี่ยงดั้งเดิม
- ◆ Numeral and classifiers in Modern Karenic languages and Proto-Karen
- ◆ คำเรียกชื่อสัตว์ในภาษากะเหรี่ยงดั้งเดิม
- ◆ Proto-Karen fauna
- ◆ ระบบเสียงและศัพท์ในภาษากะเหรี่ยงดั้งเดิม
- ◆ Proto-Karen phonology and lexicon

- ◆ การใช้ระบบสารสนเทศภูมิศาสตร์เพื่อการสำรวจแหล่งตั้งถิ่นฐานของชาวกะเหรี่ยงการศึกษาพื้นที่ภาคเหนือและภาคตะวันตกของประเทศไทยตามแนวชายแดนไทย-พม่า
- ◆ Using GIS for exploring Karen settlements: a case study of western and northern Thailand in the vicinity of the Thai-Burmese border
- ◆ แผนที่แหล่งตั้งถิ่นฐานกะเหรี่ยงกลุ่มต่างๆ ในบริเวณภาคเหนือและภาคตะวันตกของประเทศไทย
- ◆ Map of settlements of Karen subgroups in the North and the West of Thailand



ผศ. ดร. ศิริวัไเล ธีระโรจนารัตน์  
Assist. Prof. Sirivilai Teerarojanarat, Ph.D.



- อ. ดร. พิทยาวัฒน์ พิทยาภรณ์  
Dr. Pittayawat Pittayaporn
- ◆ สมบัติความเป็นเสียง ร ของเสียงเสียดแทรกกลืนส่วนหลัง /y/ ในภาษากะเหรี่ยงสะกอ
  - ◆ Rhoticity of dorsal fricative /y/ in Sgaw Karen



# โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



หน้าพระทัย ไหลหลั่ง สู่แดนดิน  
ทั่วทุกถิ่น ต่างชาติพันธุ์ ต่างภาษา



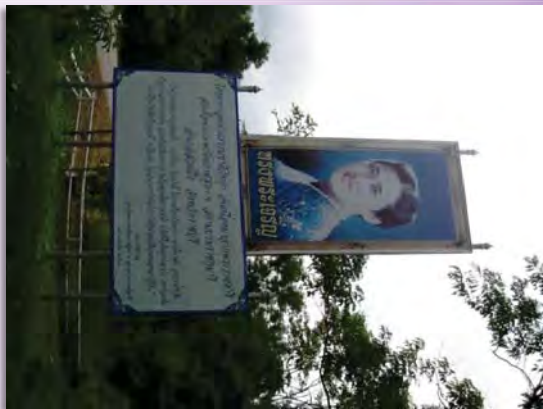
## A Testament to Our Princess' Benevolence and Generosity to Varied Ethnic Groups in the Country



ทุนวิจัยจากสำนักงานกองทุนสนับสนุนการวิจัย (สกว.)  
Funded by the Thailand Research Fund (TRF)  
<http://ling.arts.chula.ac.th/Karen>



## โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



อุทยานธรรมชาติวิทยา ตามพระราชดำริสมเด็จพระเทพรัตนราชสุดาฯ สยามบรมราชกุมารี จ.ราชบุรี  
The Natural Science Park in Ratchaburi Province, established by H.R.H. Princess  
in the past Maha Chakri Sirindhorn's initiative



โครงการตามพระราชดำริสมเด็จพระเทพรัตนราชสุดาฯ สยามบรมราชกุมารี  
ที่ อ.สวนผึ้ง จ.ราชบุรี  
Projects of H.R.H. Princess Maha Chakri Sirindhorn's  
initiative in Suan Phueng District



โรงเรียนบ้านแม่กลองศิลประสบผลสำเร็จมากด้าน  
การดำเนินงานโครงการเกษตรเพื่ออาหารกลางวัน  
ทั้งปลูกพืชผักผลไม้และเลี้ยงสัตว์นำหาชนิด  
The Ban Mae Klong Khi School is successful  
in its operation of the Agriculture for Lunch  
Project in being able to cultivate a variety of  
plants and raise many kinds of animal.



น้ำดื่มผสมไอโอดีนเพื่อสุขภาพของเด็กนักเรียน  
โรงเรียนตำรวจตระเวนชายแดน บ้านถ้ำหิน อ.สวนผึ้ง  
Drinking water mixed with iodine for the pupils'  
health at the Border Patrol Police school in  
Ban Tham Hin, Suan Phueng District

ทุนวิจัยจากสำนักงานกองทุนสนับสนุนการวิจัย (สกว.)  
Funded by the Thailand Research Fund (TRF)  
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# โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



คัดเลือกกาแฟเพื่อนำไปคั่ว  
Selecting coffee berries to be roasted



กะเหรี่ยงสะกอบ้านห้วยหอม อ.แม่ลาเหนือ  
จ.แม่ฮ่องสอน ทอผ้าขนแกะ  
The Sgaw Karen in Ban Huai Hom, Mae  
La Noi District, Mae Hong Son Province,  
weaving woollen fabrics



เสื้อและชิ้นของสตรีสิ่ง ทอและเย็บด้วยมือ  
Some hand-woven and hand-sewn traditional  
blouses and skirts of the Phlaung



ชาวกะเหรี่ยงบ้านพระกำแพงผ้าใน  
โรงทอผ้าพระราชทาน  
The Karen in Ban Phu  
Rakam weaving cloth in the  
weaving plant that is supported  
by Her Majesty the Queen



บรรยากาศการตีหนังเพื่อใช้ทำเป็นเครื่องประดับ  
หลากหลายรูปแบบ ตามบ้านเรือนของชาวกะเหรี่ยง  
บ้านห้วยตม

Making silver accessories in the households  
of the Karen in Ban Huai Tom





# โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



บ้านกะเหรี่ยง บ้านพระกำ สี่แม่โขงลาวโซล  
อยู่บนหลังคาเกือบทุกครัวเรือน  
Karen houses in Ban Phu Rakam- almost  
all of them fitted with solar screens on the roof



พริกกะเหรี่ยงตากแห้งเพื่อเก็บไว้ทำอาหารและส่งขายที่ตลาด  
Karen chilies dried to be stored for household  
cooking or sent to the market for sale



เล่นตามประสาเด็กผู้ชาย เด็กโตช่วยกันจับปลาในห้วย เด็กเล็กเรียนรู้วิธีการจากพี่ ๆ  
Boys at play—bigger boys catching fish  
in the stream and younger ones learning  
from the seniors



เด็ก ๆ ตบจากเตรียมความพร้อม และกล่าว  
ขอบคุนผู้ให้อาหาร ก่อนรับประทานอาหาร  
กลางวัน ถูกฝึกมาดีโดยคุณครูตำรวจตระเวน  
ชายแดน  
The pupils, well trained by their Border Patrol  
Police teachers, getting ready to give thanks to  
the donors of their lunches



การแสดงชุด "ระบำเชือก" ซึ่งเด็ก ๆ แสดงได้ดี  
มาก The Rope Dance displaying the dancers'  
expertise



เด็กผู้ชายกำลังเล่นขี่กระบือพระราชทานจาก  
สมเด็จพระเทพรัตนราชสุดาฯ  
Boys riding on the back of a buffalo—  
a gift from Her Royal Highness Princess  
Maha Chakri Sirindhorn

ทุนวิจัยจากสำนักงานกองทุนสนับสนุนการวิจัย (สกว.)  
Funded by the Thailand Research Fund (TRF)  
<http://lingarts.chula.ac.th/Karen>



# โครงการภาษาศาสตร์ภาษากะเหรี่ยง Karen Linguistics Project



โครงการวิจัยภาษาศาสตร์ภาษากะเหรี่ยง ได้จัดทำหนังสือ เรื่องเล่าจากชายแดนไทย-พม่า: กระจกเงาใตงปัญหาเพื่อการพัฒนาอย่างยั่งยืน ขึ้น เพื่อให้ความรู้ความบันเทิง แก่นักวิชาการในศาสตร์อื่นๆ และผู้อ่านทั่วไปที่สนใจเรื่องความหลากหลายทาง ภาษา สังคม และวัฒนธรรมของคนในชาติ โดยเฉพาะอย่างยิ่งเรื่องของกลุ่มชาติพันธุ์ กะเหรี่ยง

This illustrated documentary, *Stories from the Thai-Burmese Border: Intellectual Sparks for Sustainable Development*, is part of the Karen Linguistics Research. Its aim is to inform as well as to entertain academics in other fields and readers in general who are interested in the diversity of languages, social conditions and cultures of people in the country, particularly the Karen ethnic group.



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Author



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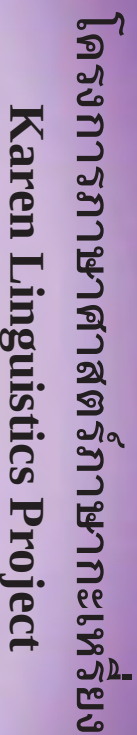


บรรณาธิการภาษาไทย  
Thai Editor



บรรณาธิการภาษาอังกฤษ  
English Editor

ทุนวิจัยจากสำนักงานกองทุนสนับสนุนการวิจัย (สกว.)  
Funded by the Thailand Research Fund (TRF)  
<http://lingarts.chula.ac.th/Karen>



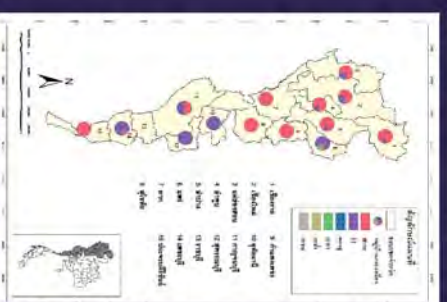
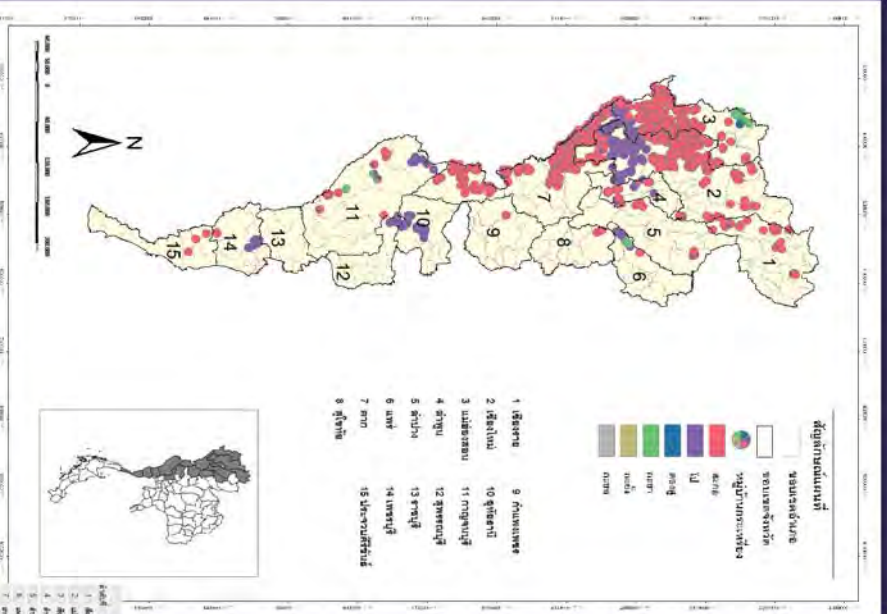
และพื้นที่แหล่งส่งเสริมฐานกะเหรี่ยงของกลุ่มต่างๆ ในบริเวณภาคเหนือและภาคตะวันตกของประเทศไทย

**เกาะเหือง** เป็นเกาะกลุ่มน้อยอยู่ในเขตที่ราบชายฝั่งโขง มีพื้นที่ส่วนใหญ่เป็นเขตรักษาพันธุ์สัตว์ป่าห้วยผึ้ง-น้ำตกภูพานและเขตรักษาพันธุ์สัตว์ป่าห้วยหลวง จังหวัดสกลนครและพื้นที่อำเภอโพนสวรรค์ จังหวัดบึงกาฬ ส่วนพื้นที่ริมฝั่งโขงเป็นพื้นที่ป่าดงดิบชื้น

โครงการฯ ทางภาคใต้ภาคใต้เพื่อส่งเสริมสนับสนุน 7 ขอบ ไปยังถิ่น และหมู่บ้านอื่น ๆ ไปยังถิ่นสู่ถิ่น  
 วัตถุประสงค์ เพื่อสร้างและรวมพลังของ และเพื่อหาทุนสนับสนุนให้เด็กได้เรียนรู้และศึกษาวิชาที่มุ่ง  
 กลุ่มต่าง ๆ 6 กลุ่ม ไปยังถิ่นต่าง ในปี พ.ศ. 2544 - 2555 รวมกลุ่ม 15 จังหวัด ได้แก่ จังหวัดเชียงใหม่  
 พะเยา เชียงใหม่ ลำพูน ลำปาง แม่ฮ่องสอน เชียงราย พะเยา น่าน อุตรดิตถ์ สุโขทัย พิษณุโลก  
 เพชรบูรณ์ และจังหวัดศรีสะเกษ

หมายเหตุ: จากข้อมูลฉบับนี้ร้อยละ 66 ของคำถามในแบบทดสอบฯ พบว่าไม่ได้รับข้อมูลจากจังหวัดราชบุรี และ ไม่พบกลุ่มตัวอย่าง และร้อยละ 66

แผนที่แสดงการตั้งถิ่นฐานของกะเหรี่ยงกลุ่มต่างๆในระดับหมู่บ้าน (พ.ศ. 2555)



แผนที่แสดงการตั้งถิ่นฐานของกะเหรี่ยง  
กลุ่มต่างๆแยกตามจังหวัด (พ.ศ. 2555)

|              |                                                                                       |              |                                                                                       |
|--------------|---------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------|
| นางพืชมงคลดา |  | นางพืชมงคลดา |  |
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| นางพืชมงคลดา |  | นางพืชมงคลดา |  |

| Study | Study title / Study objective | PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | Differences in the 2001-2002 |                 |                 |                 |      |     |
|-------|-------------------------------|----------------------------------------|------------------------------|-----------------|-----------------|-----------------|------|-----|
|       |                               |                                        | PM                           | NO <sub>2</sub> | NO <sub>x</sub> | SO <sub>2</sub> | CO   |     |
| 1     | Adams                         | 364                                    | 7480                         | 6.00            | 0.67            | 1.70            | 2.07 | 0   |
| 2     | Adams                         | 364                                    | 6120                         | 6.00            | 0.67            | 1.70            | 2.07 | 0   |
| 3     | Adams                         | 364                                    | 7480                         | 6.00            | 0.67            | 1.70            | 2.07 | 0   |
| 4     | Adams                         | 364                                    | 6120                         | 6.00            | 0.67            | 1.70            | 2.07 | 0   |
| 5     | Adams                         | 364                                    | 6120                         | 6.00            | 0.67            | 1.70            | 2.07 | 0   |
| 6     | Adams                         | 364                                    | 6120                         | 6.00            | 0.67            | 1.70            | 2.07 | 0   |
| 7     | Adams                         | 328                                    | 7034                         | 3.68            | 0.64            | 2.74            | 2    | 0   |
| 8     | Adams                         | 291                                    | 791                          | 496             | 289             | 0               | 0    | 0   |
| 9     | Adams                         | 273                                    | 273                          | 496             | 289             | 0               | 0    | 0   |
| 10    | Adams                         | 328                                    | 7034                         | 3.68            | 0.64            | 2.74            | 2    | 0   |
| 11    | Adams                         | 28                                     | 6348                         | 6.201           | 6.387           | 0.719           | 42   | 228 |
| 12    | Adams                         | 862                                    | 862                          | 1304            | 0               | 0               | 0    | 0   |
| 13    | Adams                         | 1304                                   | 1304                         | 0               | 1304            | 0               | 0    | 0   |
| 14    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 15    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 16    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 17    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 18    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 19    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 20    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 21    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 22    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 23    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 24    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 25    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 26    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 27    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 28    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 29    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 30    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 31    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 32    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 33    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 34    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 35    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 36    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 37    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 38    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 39    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 40    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 41    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 42    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 43    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 44    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 45    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 46    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 47    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 48    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 49    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 50    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 51    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 52    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 53    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 54    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 55    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 56    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 57    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 58    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 59    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 60    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 61    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 62    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 63    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 64    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 65    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 66    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 67    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 68    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 69    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 70    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 71    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 72    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 73    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 74    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 75    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 76    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 77    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 78    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 79    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 80    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 81    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 82    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 83    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 84    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 85    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 86    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 87    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 88    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 89    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 90    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 91    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 92    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 93    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 94    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 95    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 96    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 97    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 98    | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |
| 99    | Adams                         | 1473                                   | 1473                         | 2.621           | 2.621           | 0               | 0    | 0   |
| 100   | Adams                         | 20                                     | 6339                         | 4.736           | 4.66            | 0               | 0    | 0   |

1. B. H. Zimm, *Macromolecular Chemistry*, 1956, Interscience, New York, p. 1361.
2. R. H. Zimm, *Macromolecular Chemistry*, 1956, Interscience, New York, p. 1361.
3. H. Zimm, *Macromolecular Chemistry*, 1956, Interscience, New York, p. 1361.

โครงการฯ ศึกษาศาสตร์ภาษาของ

หมายเลข: แบบสอบนำข้อผู้สมัคร=เลขประจำกรม. (พ.ศ. 2554-2555)

ผู้สนับสนุน: สำนักงานกองทุนสนับสนุนการวิจัย (สกว.)

ภาควิชาภูมิศาสตร์ คณะอักษรศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

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ทฤษฎีจากสำนักงานของทูลเสนาบดีสุนทรภะการวิชัย (สกว.)

*Funded by the Thailand Research Fund (TRF)*

<http://ling.arts.chula.ac.th/Karen>

## ภาคผนวก 5

ข้อมูลเกี่ยวกับ STEDT database

และ

หลักฐานความร่วมมือนอกประเทศ



# STEDT

Username

Password

 Log in using OpenID  
Request new password

Log in

## Main menu

- Home
- User Interface Survey
- ICSTLL 45
- [Search the STEDT Database](#)
- Announcements
- Database and Software Development
- Electronic Etymologies
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## Projects

• [STEDT Website](#)

## The Sino-Tibetan Etymological Dictionary and Thesaurus

STEDT is a long-term linguistics research project at the [University of California at Berkeley](#). It is directed by [Professor James A. MATISOFF](#) of Berkeley's [Linguistics Department](#). Our goal is the publication of an etymological dictionary of Proto-Sino-Tibetan (PST), the ancestor language of the large Sino-Tibetan language family. This family includes Chinese, Tibetan, Burmese, and over 200 other languages spoken in South and Southeast Asia. The project was founded in 1987 and has enjoyed the support of the [National Science Foundation](#) and the [National Endowment for the Humanities](#).

The first major dissemination of STEDT research came in the form of [A Handbook of Proto-Tibeto-Burman: System and Philosophy of Sino-Tibetan Reconstruction](#), an introduction to the reconstructed phonology and lexicon of Proto-Tibeto-Burman and the philosophical underpinnings on which the STEDT project rests. This volume (HPTB) included over 1500 reconstructed Proto-Tibeto-Burman roots. In the next phase of the project, additional STEDT etymologies and data will be published systematically, by semantic field, in electronic form.

### Current STEDTniks

- [Dr. John B. Lowe](#)
- [Dr. Liberty Lidz](#)
- [Dr. Kenneth VanBik](#)
- [Dr. David Mortensen](#)
- [Dr. Dominic Yu](#)
- [Daniel Bruhn](#)
- [Chundra Cathcart](#)
- [Dr. David Solnit](#)

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125%

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**STEDT Database (Beta)**
help

**Etyma**

| proto-form           | proto-gloss |
|----------------------|-------------|
| <input type="text"/> | bird        |

12 records found.

| #     | protoform        | protogloss                                       |
|-------|------------------|--------------------------------------------------|
| #1603 | wa ʰwu           | BIRD / EGG / WING / FOWL                         |
| #1168 | p <sup>w</sup> u | EGG / BIRD / ROUND OBJECT                        |
| #301  | wu               | EGG / BIRD                                       |
| #3442 | s-ŋak            | BIRD                                             |
| #2393 | g-lan ʰ g-lak    | FALCON, VULTURE, EAGLE, KITE, HAWK, BIRD OF PREY |
| #2187 | bya ʰ bra        | BIRD / BEE                                       |
| #5197 | va-zuun          | DRONGO (bird)                                    |
| #6616 | tan              | BIRD                                             |
| #1600 | har              | BIRD / FOWL / CHICKEN / QUAIL                    |
| #1604 | daw OR dow       | BIRD                                             |
| #1424 | ka               | BIRD                                             |
| #4061 | daay             | BIRD-LIME                                        |

**Lexicon**

| form                 | gloss | language             | language group       |
|----------------------|-------|----------------------|----------------------|
| <input type="text"/> | bird  | <input type="text"/> | <input type="text"/> |

<http://stedt.berkeley.edu/~stedt-cgi/rootcanal.pl/gnis?t=bird>



**Theraphan Luangthongkum <theraphan.l@gmail.com>**

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## Re: Collaboration!

1 message

**James Matisoff** <matisoff@berkeley.edu>

To: Theraphan Luangthongkum <Theraphan.L@chula.ac.th>

Cc: James Matisoff <matisoff@berkeley.edu>

Sat, Feb 18, 2012 at 5:21 AM

Dear Theraphan,

Many thanks for your message! I'm really happy that you are willing to share your PK data with us. I myself am not competent to tell you how to prepare it for our database, but as soon as I get back from Japan on the 29th, I'll consult my crackerjack team of programmers (J.B.Lowe, Dominic Yu, and Daniel Bruhn), and ask them about what format would be best. We are all excited at the prospect of enriching our Karen materials so dramatically!

David Solnit unfortunately doesn't have much time to work on linguistics these days, since he has a demanding 9-5 job involving technical translations, but he is still very interested in things Karen. I'll photocopy your fauna materials for him when I get back. I just saw Ken Manson when I was at Payap a couple of weeks ago - we didn't get a chance to talk about his work, but his dissertation is finished and he is looking for a publisher (perhaps Pacific Linguistics). Tadahiko Shintani will be a discussant at this symposium in Kyoto that I'm headed for -- as you know he has assembled detailed data on the tonal systems of about 20 Karenic dialects -- but so far he has not made it generally available. I have hopes that before too long all this incredibly valuable new material produced by the international community of scholars will be accessible to everybody. This will be a great leap forward for TB/ST studies.

Your idea of inviting me and my family to your country house this December is terrific! That's so kind of you! Thank you so much. There will be five of us altogether: besides Susan and me, our daughters Nadja and Alexandra ("Lexa"), and Lexa's husband Li Qiang (whose English name is Greg). Greg is originally from the P.R.C., but emigrated after Tiananmen, and is now a U.S. citizen - he's a great guy. Is five too many people for you to put up comfortably? If so, I'm sure we could figure out some way to divide us up.

Of course I'll be delighted to give a lecture or have a discussion at Chula -- I look forward to learning about your project in detail.

I'll be in touch again in early March.

All the best,  
Jim

On Feb 15, 2012, at 9:06 PM, Theraphan Luangthongkum wrote:

Dear Jim,

I am very delighted to hear from you and feel thankful for your precious comments and information. I would love to correspond and to cooperate with you. So far I have been working on my own and have nobody to discuss with. It is a good idea to have all of my Proto-Karen data incorporated into the STEDT database because it is a good way to make it useful to other people. Please tell me what is supposed to be done properly. I have nothing on

computer files except my numeral paper. I am about to write my paper on Proto-Karen fauna for SEALS 22 which will be held in France from May 30-June 2, 2012, then I can send you a file (see the attached abstract). The rest of my PK reconstructions is lying in a box (primitive way!) not online. For each etymon, there are more notes, remarks, and other details. What I gave you is a simplified version. Should I have everything typed up in a particular format so that it can be easily converted into the STEDT database? I need the instructions for my research assistants so that they can do the right thing. By the way, the word meaning 'dog' in some Karen varieties is chw11 (B) which is closer to \*kh- regarding place of articulation.

It's great that you will be in Thailand again in December this year. May I ask how many of your family members will be with you? I have something (great!) in mind, i.e.

(1) Inviting you and your family, to spend a few days at our country house in Huay Pa Pok Resort, Amphoe Ban Rai, Uthai Thani, about 220 kms. from BKK. Many Pwo Karen villages are located in the hills of Tambon Kaen Magrut, about 34 Kms. from our house. you can visit the Ugong village as well as, if you like.

(2) Organizing a lecture/meeting for you at Chula so that you can meet my colleagues and students and can see our Karen Linguistics Project. See our website: <http://ling.arts.chula.ac.th/Karen/>

Please let me know as early as possible whether my above plans will be alright with you so that I can inform my family and my boss for the arrangements. By the way, I do not mind if you would like to show the PK fauna to David Solnit. With regard to his PK constructions, I wonder what he has been doing. It will be nice if we can exchange our ideas. I have never been in touch with Ken Manson who has been doing more or less the same thing in Chiangmai. Has David been in contact with him?

Please expand my warm regards to your family and say hello to David for me.

Theraphan

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Tel: +66-2-218-4691  
Fax: +66-2-218-4695

On Thu, Feb 16, 2012 at 7:05 AM, James Matisoff <[matisoff@berkeley.edu](mailto:matisoff@berkeley.edu)> wrote:

Dear Aj. Theraphan,

We're back home, safe and sound, after a wonderful time in Thailand. But we're actually leaving next Monday for 10 days in Japan - I know it sounds crazy, but we're still young and foolish! We'll be back in the U.S. on Feb. 29th.

Thank you so much for dropping off your Karen fauna at the Dusit - it was a wonderful present! I'm only sorry we didn't get a chance to sit down and talk in detail about your work and how it fits into TB studies in general.

I've jotted down a few notes about your numerals paper and the fauna sets, which I'll attach to this message. I'm also sending you a couple of articles by snailmail tomorrow.

I look forward to seeing you again, maybe this December when we plan to take our whole family to Thailand. But before that I'd love to correspond with you in more detail about your reconstructions. If you don't mind, I'll show them to David Solnit, who comes to STEDT once a week.

All the best,

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Jim

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James A. Matisoff  
Professor of Linguistics, Emeritus  
University of California  
Berkeley, CA 94720

<http://stedt.berkeley.edu>

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<Proto-Karen Fauna final.pdf><Proto-Karen fauna wordlist.pdf>

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James A. Matisoff  
Professor of Linguistics, Emeritus  
University of California  
Berkeley, CA 94720

<http://stedt.berkeley.edu>



Theraphan Luangthongkum <theraphan.l@gmail.com>

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## Draft of PLB/PK comparisons

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**James Matisoff** <matisoff@berkeley.edu>

Wed, Jan 30, 2013 at 8:24 AM

To: Theraphan Luangthongkum <theraphan.l@chula.ac.th>

Cc: James Matisoff <matisoff@berkeley.edu>

Dear Theraphan,

Attached is a preliminary draft of my PLB/PK comparisons. Please send me your comments when you have a chance.

By the way, there are three PK items which look rather like Tai. What do you think about #68 'cross (v.)', #106 'extinguish', and #271 'spleen'? Do you think there could be a connection with Thai khâam, pít, mâam? Or are the resemblances accidental?

The weather has turned springlike here - this is the kind of climate change that isn't so bad! Are you still sweltering in Bangkok?

All good wishes,  
Jim

---

James A. Matisoff  
Professor of Linguistics, Emeritus  
University of California  
Berkeley, CA 94720

<http://stedt.berkeley.edu>



**PLB:PK Comparisons.doc**  
76K

## DRAFT

*Proto-Lolo-Burmese and Proto-Karen Correspondences*

Jim Matisoff

**I. Tonal correspondences**

| (a)                      | PLB Tone * <sub>1</sub> / PKaren Tone <sup>A</sup> |  | PKaren <sup>1</sup>  |
|--------------------------|----------------------------------------------------|--|----------------------|
|                          | PLB                                                |  |                      |
| ‘barking deer’           | *d-keɣ <sup>1</sup>                                |  | *d-kej <sup>A</sup>  |
| ‘bear’ (n.) <sup>2</sup> | *d-wam <sup>1</sup>                                |  | *tham <sup>A</sup>   |
| ‘boat’                   | *s-leɣ <sup>1</sup>                                |  | *klej <sup>A</sup>   |
| ‘day’                    | *nəɣ <sup>1</sup>                                  |  | *nej <sup>A</sup>    |
| ‘die’                    | *səɣ <sup>1</sup>                                  |  | *sej <sup>A</sup>    |
| ‘elephant’               | *tsaɣ <sup>1</sup>                                 |  | *k-chaɣ <sup>A</sup> |
| ‘handspan’               | *twa <sup>1</sup>                                  |  | *tha <sup>A</sup>    |
| ‘hot/ill’                | *tsa <sup>1</sup>                                  |  | *cha <sup>A</sup>    |
| ‘hundred’                | *ʔra <sup>1</sup>                                  |  | *g-rja <sup>A</sup>  |
| ‘name’                   | *ʔ-miɣ <sup>1/3</sup>                              |  | *min <sup>A</sup>    |
| ‘smell’                  | *nam <sup>1</sup>                                  |  | *(h)nim <sup>A</sup> |
| ‘spider’                 | *m-gaɣ <sup>1</sup>                                |  | *gaɣ <sup>A</sup>    |
| ‘ten’                    | *tsyay <sup>1</sup>                                |  | *chej <sup>A</sup>   |
| ‘warm’                   | *lum <sup>1</sup>                                  |  | *lam <sup>A</sup>    |

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<sup>1</sup> Proto-Karen forms from Prof. Theraphan Luangthongkum, *Extracts from Proto-Karen Phonology and Lexicon*, Dec. 2012.

<sup>2</sup> WB wak-wam (< Tone \*<sub>1</sub>), but Lahu yè-mí-tǝ (< Tone \*<sub>2</sub>). However, the usual Lahu reflex of \*-am is -o, so the WB form seems to be a more reliable indicator of the PLB tone.

(b) *PLB Tone \*<sub>2</sub> / PKaren Tone B*

|                       |                                      |                                       |
|-----------------------|--------------------------------------|---------------------------------------|
| ‘arrow’               | *s-mra <sup>2</sup>                  | *ɒla <sup>B</sup>                     |
| ‘bamboo’              | *wa <sup>2</sup>                     | *ɪwa <sup>B</sup>                     |
| ‘bitter’              | *ka <sup>2</sup>                     | *kha <sup>B</sup>                     |
| ‘blood’               | *swaɣ <sup>2</sup>                   | *swi <sup>B</sup>                     |
| ‘body dirt’           | *klay <sup>2</sup>                   | *krej <sup>B</sup>                    |
| ‘bow’                 | *s-lay <sup>2</sup>                  | *klej <sup>B</sup>                    |
| ‘carry on back’       | *baw <sup>2</sup>                    | *pɪ <sup>B</sup>                      |
| ‘dog’                 | *k <sup>w</sup> ay <sup>2</sup>      | *thwi <sup>B</sup>                    |
| ‘ear’                 | *ɾna <sup>2</sup>                    | *na <sup>B</sup>                      |
| ‘fire’                | *ɾ-mey <sup>2</sup>                  | *ɪme <sup>B</sup>                     |
| ‘flat/thin’           | *ba <sup>2</sup>                     | *ʔba <sup>B</sup> × *pia <sup>B</sup> |
| ‘four’                | *b-lay <sup>2</sup>                  | *lwɪ <sup>B</sup>                     |
| ‘fruit’               | *sey <sup>2</sup>                    | *sa <sup>B</sup>                      |
| ‘kidney’ <sup>3</sup> | *la <sup>2</sup> × *ley <sup>2</sup> | *k-le <sup>B</sup>                    |
| ‘liver’               | *sin <sup>2</sup>                    | *swin <sup>B</sup>                    |
| ‘parrot’              | *gyay <sup>2</sup>                   | *ki <sup>B</sup>                      |
| ‘salt’                | *tsa <sup>2</sup>                    | *sa <sup>B</sup>                      |
| ‘smoke’               | *kaw <sup>2</sup>                    | *khlowlw <sup>B</sup>                 |
| ‘steal’               | *kaw <sup>2</sup>                    | *how <sup>B</sup>                     |
| ‘tail’                | *ɾ-m(r)ay <sup>2</sup>               | *me <sup>B</sup>                      |
| ‘urine’               | *m-(d)zay <sup>2</sup>               | *chej <sup>B</sup>                    |
| ‘woman’               | *mi <sup>2</sup> / <sub>3</sub>      | *ɪmi <sup>B</sup>                     |
| ‘yam’                 | *m-n(w)ay <sup>2</sup>               | *ɪnwɛ <sup>B</sup>                    |

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<sup>3</sup> Black Lahu ð-lâ-ši, Red Lahu ð-lê-ši.

|                                        |                                         |                      |
|----------------------------------------|-----------------------------------------|----------------------|
| (c) <i>PLB Tone *1 / PKaren Tone B</i> |                                         |                      |
| ‘mortar’                               | *tsum <sup>1</sup>                      | *ch( )m <sup>B</sup> |
| (d) <i>PLB Tone *2 / PKaren Tone A</i> |                                         |                      |
| ‘bran/chaff’                           | *pway <sup>2</sup>                      | *phe <sup>A</sup>    |
| ‘grandchild’                           | *m-lay <sup>2</sup>                     | *lej <sup>A</sup>    |
| ‘grandfather’                          | *ʔ-baw <sup>2</sup>                     | *phow <sup>A</sup>   |
| ‘nine’                                 | *gaw <sup>2</sup>                       | *khwi <sup>A</sup>   |
| ‘people (classifier)’                  | *ra <sup>2</sup>                        | *bra <sup>A</sup>    |
| ‘pine/Dipterocarpus’                   | *taj <sup>2</sup>                       | *than <sup>A</sup>   |
| ‘serow’ <sup>4</sup>                   | *s-ya <sup>2</sup>                      | *ja <sup>jA</sup>    |
| ‘three’                                | *sum <sup>2</sup>                       | *sam <sup>A</sup>    |
| (e) <i>PLB Tone *3 / PKaren Tone A</i> |                                         |                      |
| ‘full’                                 | *briŋ <sup>3</sup> ≠ *priŋ <sup>3</sup> | *pwe <sup>A</sup>    |
| ‘moon’                                 | *la <sup>3</sup>                        | *ʔla <sup>A</sup>    |
| ‘ripe/cooked’                          | *ʔ-min <sup>3</sup>                     | *hmin <sup>A</sup>   |
| ‘sleep’                                | *mway <sup>3</sup>                      | *hmay <sup>A</sup>   |
| (f) <i>PLB Tone *3 / PKaren Tone B</i> |                                         |                      |
| ‘breast’                               | *new <sup>3</sup>                       | *nu <sup>B</sup>     |

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<sup>4</sup> Akha (ILH)jà, Lisu h'ya<sup>5</sup>, Phunoi hjà. Lahu hâ is tonally irregular; one would expect hā.

## Checked syllable tones

|                                     |                       |                            |
|-------------------------------------|-----------------------|----------------------------|
| A. <i>Proto-Loloish</i> * <i>HS</i> |                       |                            |
| ‘separate/split’                    | *ʔ-pak <sup>H</sup>   | *paʔ D 12                  |
| ‘embrace’                           | WB phak               | *phoʔ D 12                 |
| ‘eye/face’                          | *s-myak               | *meʔ D 3 (LOW) < *myak     |
| ‘shoot’                             | PTB *g/ka:p           | *khaʔ D 12                 |
| B. <i>Proto-Loloish</i> * <i>LS</i> |                       |                            |
| ‘brain’                             | *nok <sup>L</sup>     | *nok D 3                   |
| ‘deep’                              | *ʔnak <sup>L</sup>    | *joʔ D                     |
| ‘eight’                             | *ʔrit <sup>L</sup>    | *khrɔt D 12* *grɔt D       |
| ‘breath/air’                        | *C-sak <sup>L</sup>   | *saʔ D 12 ‘heart’ (< *sak) |
| ‘itchy’                             | PTB *m-sak            | *saʔ D (< *sak)            |
| ‘leech’                             | *k-r-wat <sup>L</sup> | *s-waʔ D 12                |
| ‘monkey’                            | *myok <sup>L</sup>    | *joʔ D 3                   |
| ‘pheasant’                          | *rik (WB rac)         | *reʔ D 3                   |
| ‘pig’                               | *wak <sup>L</sup>     | *thoʔ D 12 (< *t-wak)      |
| ‘son-in-law’                        | *ʔmak <sup>L</sup>    | *maʔ D 3                   |

## II. Rhyme correspondences

### (1) *PLB* *⁎-a* / *PKaren* *-a*

|                       |                                                               |                     |
|-----------------------|---------------------------------------------------------------|---------------------|
| ‘arrow’               | <i>⁎s-mra</i> <sup>2</sup>                                    | <i>⁎blaB</i>        |
| ‘bamboo’              | <i>⁎wa</i> <sup>2</sup>                                       | <i>⁎hwaB</i>        |
| ‘bitter’              | <i>⁎ka</i> <sup>2</sup>                                       | <i>⁎khaB</i>        |
| ‘ear’                 | <i>⁎ʔna</i> <sup>2</sup>                                      | <i>⁎naB</i>         |
| ‘handspan’            | <i>⁎twa</i> <sup>1</sup>                                      | <i>⁎thaA</i>        |
| ‘hot/ill’             | <i>⁎tsa</i> <sup>1</sup>                                      | <i>⁎chaA</i>        |
| ‘hundred’             | <i>⁎ʔra</i> <sup>1</sup>                                      | <i>⁎g-rjaA</i>      |
| ‘leaf/tea’            | <i>⁎la</i> <sup>1</sup> ‘tea’ (≠ <i>WB</i> <i>lak</i> )       | <i>⁎hlaB</i> ‘leaf’ |
| ‘listen’              | <i>⁎ʔ-na</i> <sup>1</sup> (≠ <i>⁎ʔ-na</i> <sup>2</sup> ‘ear’) | <i>⁎-lnaB</i>       |
| ‘moon’                | <i>⁎la</i> <sup>3</sup>                                       | <i>⁎ʔlaA</i>        |
| ‘people (classifier)’ | <i>⁎ra</i> <sup>2</sup>                                       | <i>⁎braA</i>        |
| ‘salt’                | <i>⁎tsa</i> <sup>2</sup>                                      | <i>⁎saB</i>         |

### (2) *PLB* *⁎-ay* / *PKaren* *⁎-ej*

|                |                               |                 |
|----------------|-------------------------------|-----------------|
| ‘barking deer’ | <i>⁎kay</i> <sup>1</sup>      | <i>⁎d-khejA</i> |
| ‘boat’         | <i>⁎s-lay</i> <sup>1</sup>    | <i>⁎klejA</i>   |
| ‘body dirt’    | <i>⁎kləy</i> <sup>2</sup>     | <i>⁎krejB</i>   |
| ‘bow’          | <i>⁎s-lay</i> <sup>2</sup>    | <i>⁎klejB</i>   |
| ‘day’          | <i>⁎ney</i> <sup>1</sup>      | <i>⁎nejA</i>    |
| ‘die’          | <i>⁎say</i> <sup>1</sup>      | <i>⁎sejA</i>    |
| ‘grandchild’   | <i>⁎m-lay</i> <sup>2</sup>    | <i>⁎lejA</i>    |
| ‘urine’        | <i>⁎m-(d)zey</i> <sup>2</sup> | <i>⁎chejB</i>   |

|                       |                                        |                                         |
|-----------------------|----------------------------------------|-----------------------------------------|
| (3)                   | <i>PLB</i> *-(w)ay / <i>PKaren</i> *-i |                                         |
| ‘blood’               | *sway <sup>2</sup>                     | *swi <sup>B</sup>                       |
| ‘dog’                 | *k <sup>w</sup> ay <sup>2</sup>        | *t <sup>h</sup> wi <sup>B</sup>         |
| ‘flea’                | *s-lay <sup>2</sup>                    | *kli <sup>A</sup> / *kli <sup>?</sup> ɒ |
| ‘four’                | *b-lay <sup>2</sup>                    | *lwi <sup>B</sup>                       |
| ‘wind’                | *s-lay <sup>1</sup>                    | *k/ gli <sup>A</sup>                    |
| (4)                   | <i>PLB</i> *-yay / <i>PKaren</i> *-i   |                                         |
| ‘parrot’              | *gyay <sup>2</sup>                     | *kli <sup>B</sup>                       |
| (5)                   | <i>PLB</i> *-ay / <i>PKaren</i> *-a    |                                         |
| ‘fruit’               | *sey <sup>2</sup>                      | *sa <sup>B</sup>                        |
| (6)                   | <i>PLB</i> *-ay / <i>PKaren</i> -e     |                                         |
| ‘bran/chaff’          | *pway <sup>2</sup>                     | *phe <sup>A</sup>                       |
| ‘tail’                | *ʔ-m(r)ay <sup>2</sup>                 | *me <sup>B</sup>                        |
| (7)                   | <i>PLB</i> *-ay / <i>PKaren</i> -ε     |                                         |
| ‘yam’                 | *m-n(w)ay <sup>2</sup>                 | *hnwε <sup>B</sup>                      |
| (8)                   | <i>PLB</i> *-yay / <i>PKaren</i> -ej   |                                         |
| ‘ten’                 | *tsyay <sup>1</sup>                    | *chej <sup>A</sup>                      |
| (9)                   | <i>PLB</i> *-ey / <i>PKaren</i> -e     |                                         |
| ‘fire’                | *ʔ-mey <sup>2</sup>                    | *hme <sup>B</sup>                       |
| ‘kidney’ <sup>5</sup> | *la <sup>2</sup> ⋈ *ley <sup>2</sup>   | *k-le <sup>B</sup>                      |

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<sup>5</sup> Black Lahu ò-lâ-šī, Red Lahu ò-lê-šī.

|               |                       |                    |
|---------------|-----------------------|--------------------|
| (10)          | PLB *-əw / PKaren -ow |                    |
| ‘grandfather’ | *ʔbaw <sup>2</sup>    | *phow <sup>A</sup> |
| ‘smoke’       | *kaw <sup>2</sup>     | *how <sup>B</sup>  |
| ‘steal’       | *kaw <sup>2</sup>     | *how <sup>B</sup>  |
| (11)          | PLB *-əw / PKaren -i  |                    |
| ‘nine’        | *gəw <sup>2</sup>     | *khwi <sup>A</sup> |
| (12)          | PLB -i / PKaren -i    |                    |
| ‘woman’       | *mi <sup>2/3</sup>    | *hmi <sup>B</sup>  |

### *Nasal-final rhymes*

#### *\*-am*

|                            |                                  |                      |
|----------------------------|----------------------------------|----------------------|
| ‘bear’ (n.) <sup>6</sup>   | *d-wam <sup>1</sup>              | *tham <sup>A</sup>   |
| ‘smell’                    | *nam <sup>1</sup>                | *(h)nɪm <sup>A</sup> |
| <b>*-an (&lt; PTB*-ar)</b> |                                  |                      |
| ‘louse’                    | *san <sup>1/2</sup> <sup>7</sup> | *swɪn <sup>B</sup>   |

#### *\*-aŋ*

|                      |                                         |                      |
|----------------------|-----------------------------------------|----------------------|
| ‘elephant’           | *tsaŋ <sup>1</sup>                      | *k-chaŋ <sup>A</sup> |
| ‘spider’             | *m-gaŋ <sup>1</sup>                     | *gaŋ <sup>A</sup>    |
| ‘pine/Dipterocarpus’ | *taŋ <sup>2</sup>                       | *thaŋ <sup>A</sup>   |
| ‘sharp’              | *tak <sup>H</sup>                       | *thaŋ <sup>A</sup>   |
| ‘dream’              | *s-maŋ <sup>1</sup> ≠ *mak <sup>H</sup> | *maŋ <sup>B</sup>    |

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<sup>6</sup> WB wak-wam (< Tone \*1), but Lahu yè-mí-tā (< Tone \*2). However, the usual Lahu reflex of \*-am is -o, so the WB form seems to be a more reliable indicator of the PLB tone.

<sup>7</sup> Lahu še (< Tone \*1) ≠ WB sân (< Tone \*2).

**\*-in**'liver' \*sin<sup>2</sup>\*swin<sup>B</sup>'ripe/cooked' \*ʔ-min<sup>3</sup>\*hmin<sup>A</sup>**\*-iŋ**'name' \*ʔ-miŋ<sup>1/3</sup>\*min<sup>A</sup>**\*-um**'mortar' \*tsum<sup>1</sup>\*ch( )m<sup>B</sup>'three' \*sum<sup>2</sup>\*sam<sup>A</sup>'warm' \*lum<sup>1</sup>\*lam<sup>A</sup>**\*-uŋ**'maggot' \*k-luk<sup>H</sup> ≠ k-luŋ\*hloŋ<sup>B</sup>**Stop-final rhymes****\*-ak**'breath/air' \*C-sak<sup>L</sup>

\*saʔ D 12 'heart' (&lt; \*sak)

'deep' \*ʔnak<sup>L</sup>

\*joʔ D

'embrace' WB phak

\*phoʔ D 12

'itchy' PTB \*m-sak

\*saʔ D (&lt; \*sak)

'pig' \*wak<sup>L</sup>

\*thoʔ D 12 (&lt; \*t-wak)

'separate/split' \*ʔ-pak<sup>H</sup>

\*paʔ D 12

'son-in-law' \*ʔmak<sup>L</sup>

\*maʔ D 3

|              |                       |                        |
|--------------|-----------------------|------------------------|
| <b>*-yak</b> |                       |                        |
| 'eye/face'   | *s-myak               | *mɛʔ D 3 (LOW) < *myak |
| <b>*-ap</b>  |                       |                        |
| 'shoot'      | PTB *g/ka:p           | *khaʔ D 12             |
| <b>*-ok</b>  |                       |                        |
| 'brain'      | *nok <sup>L</sup>     | *nok D 3               |
| 'monkey'     | *myok <sup>L</sup>    | *joʔ D 3               |
| <b>*-at</b>  |                       |                        |
| 'leech'      | *k-r-wat <sup>L</sup> | *s-waʔ D 12            |
| <b>*-it</b>  |                       |                        |
| 'eight'      | *ʔrit <sup>L</sup>    | *khrot D 12 ≠ *grat D  |
| <b>*-ik</b>  |                       |                        |
| 'pheasant'   | *ʔrik (WB rac)        | *reʔ D 3               |

### III. *Difficult cases involving variations or exceptions in rhyme*

|                                                                                                                                                 |                                                             |                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------|
| ‘bee’                                                                                                                                           | *gway <sup>2</sup>                                          | *kwat D / A                             |
| /Open in PLB; stopped in PK./                                                                                                                   |                                                             |                                         |
| ‘bone’                                                                                                                                          | *raw <sup>2</sup>                                           | *khrwit D / A / B                       |
| /Possible *-s suffix in PK./                                                                                                                    |                                                             |                                         |
| ‘carry on back’                                                                                                                                 | *baw <sup>2</sup>                                           | *pɪB                                    |
| /Possible *-s suffix in PK./                                                                                                                    |                                                             |                                         |
| ‘dream’                                                                                                                                         | *s-may <sup>1</sup> ≠ *mak <sup>H</sup>                     | *may <sup>B</sup>                       |
| /Final stop/nasal variation in TB./                                                                                                             |                                                             |                                         |
| ‘flea’                                                                                                                                          | *s-lay <sup>2</sup>                                         | *kli <sup>A</sup> ≠ *kli <sup>?</sup> D |
| /Open/stopped variation in PK./                                                                                                                 |                                                             |                                         |
| ‘house’                                                                                                                                         | *yim <sup>1</sup>                                           | *hi <sup>B</sup>                        |
| /Irregular rhyme correspondence; initial corr. doesn't look good either./                                                                       |                                                             |                                         |
| ‘leaf/tea’                                                                                                                                      | *la <sup>1</sup> ‘tea’ (≠ WB lak)                           | *hla <sup>B</sup> ‘leaf’                |
| /Variation within LB./                                                                                                                          |                                                             |                                         |
| ‘listen/ear’                                                                                                                                    | *ʔ-na <sup>1</sup> ‘listen’ / *ʔ-na <sup>2</sup> ‘ear’      | *-lna <sup>B</sup>                      |
| /Variation within LB./                                                                                                                          |                                                             |                                         |
| ‘louse’                                                                                                                                         | *san <sup>1/2</sup>                                         | *swɪ <sup>n</sup> B                     |
| /Variation within LB: Lahu še (< Tone *1) ≠ WB sân (< Tone *2)./                                                                                |                                                             |                                         |
| ‘maggot’                                                                                                                                        | *k-luk <sup>H</sup> ≠ k-luŋ                                 | *hloŋ <sup>B</sup>                      |
| /Tone of LB non-stopped variant unknown./                                                                                                       |                                                             |                                         |
| ‘nose’                                                                                                                                          | *ʔ-na <sup>2</sup>                                          | ??                                      |
| /Unclear PK reconstruction./                                                                                                                    |                                                             |                                         |
| ‘road’                                                                                                                                          | *lam <sup>2</sup> ≠ *ʔ-lam <sup>1</sup> or lam <sup>3</sup> | *gle <sup>A</sup>                       |
| /Variation within LB: WB lâm ‘road’ (< Tone *2) vs. Lahu lo ‘locative particle’ (< *lam <sup>3</sup> or *ʔ-lam <sup>1</sup> )./                 |                                                             |                                         |
| ‘serow’                                                                                                                                         | *s-ya <sup>2</sup>                                          | *ja <sup>A</sup>                        |
| / PLB -a / PKaren -aj . Akha (Hansson) jà, Lisu h <sup>3</sup> ya <sup>5</sup> , Phunoi hjà. Lahu hâ is tonally irregular; one would expect hā. |                                                             |                                         |
| ‘sharp’                                                                                                                                         | *tak <sup>H</sup>                                           | *thaŋ <sup>A</sup>                      |
| /PLB final stop vs. PK homorganic final nasal./                                                                                                 |                                                             |                                         |

|                                           |                                   |                                 |
|-------------------------------------------|-----------------------------------|---------------------------------|
| 'six'                                     | * <sub>C</sub> -krok <sup>L</sup> | * <sub>khrow</sub> <sup>A</sup> |
| /Numerals show special correspondences, / |                                   |                                 |

|       |                                                                                                             |        |  |
|-------|-------------------------------------------------------------------------------------------------------------|--------|--|
| ‘sky’ | PTB *r-mu:k                                                                                                 | *moʔ ɖ |  |
|       | /The PK form goes better with this PTB root ‘fog; cloudy; menacing; thunder’<br>than with PLB *mew² ‘sky’./ |        |  |

'snake' <sup>\*<sub>m-r-way</sub></sup> <sup>\*<sub>row</sub></sup>  
/The PLB:PK rhyme correspondence is irregular./

'suck'                      \*ʔ-cup<sup>H</sup> ≠ ʔcup<sup>L</sup>                      \*cwik D 12

/This is a complicated word-family in TB, with allofams with all three final stops  
(-p -t -k), as well as open syllables./