SOME DIACHRONIC PHONOLOGICAL CHANGES FROM PROTO-KUKI-CHIN TO LUTUV

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ABSTRACT

Lutuv (Lautu) is a Kuki-Chin language that VanBik (2009) places in the Maraic branch alongside Zophei, Mara, Senthang, and Zotung. Lutuv is of particular interest to the diachronic development of Maraic languages in that it is geographically central in the Maraic-speaking area but shows some differences in historical development from its neighbors. This project is based on my dissertation research on Zophei and was first presented to Dr. Kelly Berkson's Field Methods class on Lutuv in order to offer researchers of Lutuv (like those in the field methods class) a look at the diachronic development of syllable rhymes in Lutuv, specifically in comparison with the most closely related Kuki-Chin languages Zophei and Mara. The data set for this paper is published separately in this volume as *Lexical correspondences between Proto-Kuki-Chin, Hakha Lai, and six Maraic varieties* (Lotven, 2020). This research is presented here to be of use to other Lutuv researchers, researchers of Kuki-Chin more broadly, and historical phonologists interested in rhyme development and syllable structure simplification.

Key Terms— Lutuv, Syllable structure, Kuki-Chin, diachronic phonology

1. INTRODUCTION

VanBik (2009) places Lutuv (or Lautu) within the Maraic branch of Kuki-Chin (KC) with close connections to Zophei and Mara, as indicated in Fig.1 below, adapted from the source.

Figure 1 VanBik's (2009) divisions within Kuki-Chin

Lutuv-speaking villages are geographically central within the Maraic-speaking area and VanBik (2009) lists the following villages where it is spoken: Fa te, Fan tthen, Hna ring, Hriang pi, Khua hrang, Lei kang, Lei pi, Sa te, Sen tung, Sur ngen, Thang aw, Ti sen, and Zua mang. In Fig.2, some of these villages can be found in southern Thantlang township, such as Sen tung (Sentung), Ti sen (Tisen A and B), and Hna ring (Hnaring A and B); and in northern Matupi township, such as Lei kang (Leikang), Sa te (Sate), and Hriang pi (Hriangpi). The Lutuv-speaking region is south of the Zophei-speaking region, west of the Senthang-speaking region, east across the Thangor River from where Mara is spoken, and north of the Zotung-speaking population in Matupi. Ethnologue reports 15,000 total Lutuv speakers in a 2005 estimate (Eberhard, Simons, & Fennig, 2020), and a 2019 community estimate provided by the language assistant consulted for this project reports over 18,000 ethnic Lutuv worldwide, including about 2,000 in the US, 600 of whom live in Indianapolis.¹ Fig.2. is modified from a map created by the Chin Baptist Mission Youth Fellowship (Pu Siang Kung (Va)). The modifications include both zooming in on the Maraic-speaking area and indicating known Maraic-speaking villages with colored rectangles. Lutuv-speaking villages are indicated with black rectangles.

¹ As described in Lotven (2020) also in this volume, the Lutuv data these preliminary observations and analyses are based on come from Sui Hnem Par. The other Lutuv researchers at Indiana University and I owe her a debt of gratitude for her dedication and patience.

superficial and rhotic loss likely occurred separately and with different results in the two languages. Section 5 places coda nasal loss in Lutuv in the context of other Maraic languages. Section 6 examines a relevant vowel change in Maraic, the $/*a/ \rightarrow /o/$ raising that appears to have occurred in Mara and Zophei, but not Lutuv. Section 7 summarizes the findings of this research and offers some final thoughts on the relationship between Lutuv and other Maraic languages.

2. MARAIC INNOVATIONS IN LUTUV

VanBik (2009) offers five innovations that define the Maraic branch of KC. These observations are based on Mara, the most widely spoken and studied Maraic variety (Savidge, 1908; Parry, 1932; Lorrain, 1951; Löffler, 2002, 2004; VanBik, 2009; Arden, 2010). These innovations are discussed in terms of the loss of various segments, however as discussed across KC in terms of syllable structure simplification in Lotven et al. (2019), structural losses in Maraic languages make way for complexification in the vocalic and tonal domains. VanBik's (2009) five innovations are summarized in Fig.3.

Figure 3. Maraic innovations (from VanBik, 2009)

A. The debuccalization of coda stops:		
$/*-p \ *{-t} \ *{-k}/$	$\rightarrow$	$/-ʔ/$
B. The loss of final glottal stop		
$/*-ʔ/$	$\rightarrow$	$/\emptyset/$
C. The loss of final liquids		
$/*-l \ *{-l}/$	$\rightarrow$	$/\emptyset/$
D. The loss of final nasals		
$/*-m \ *{-n} \ *{-ŋ}/$	$\rightarrow$	$/\emptyset/$
E. Merger of initial $/kɿ/$ and $/ts/$		
$/*kɿ- \ *ts-/$	$\rightarrow$	$/ts-/$

Lutuv has undergone most of the changes in Fig. 3, though with some differences in execution. Mara, Zophei, and Lutuv have all undergone the debuccalization of coda stops and the loss of glottal stops, however Lutuv likely lost $/*-ʔ/$ after $/*-p \ *{-t} \ *{-k}/$ rather than before as is the case in Mara and Zophei, further discussed in Section 3. Synchronic Mara, Zophei, and Lutuv varieties all lack $/*-l \ *{-l}/$, but this loss occurred differently in Lutuv, as discussed in Section 4, favoring collapsing all rhotic-final rhymes to $/a/$ over the varied and piecemeal changes found in Mara and Zophei. Mara and Zotung (Shintani, 2016) appear to be the only Maraic languages that have entirely lost coda nasals, with Zotung retaining nasalized vowels lost in Mara (Löffler, 2002). With varying retentions, Senthang, Zophei, and Lutuv appear on a cline of VN rhyme loss, further discussed in Section 5. The merger of initial $/kɿ/$ and $/ts/$ has also occurred in Lutuv and is not discussed in this paper. VanBik (2009) also identifies a back vowel shift in Mara ($/a/ \rightarrow /ɔ/ \rightarrow /u/ \rightarrow /uʷ/$), and though this is not thoroughly investigated in this paper, Section 6 provides some evidence that Lutuv's vowel system has developed differently. Taken together these observations suggest that Zophei and Mara are more closely related to each other than Lutuv is to either.

3. CODA STOP LOSS

Mara, Zophei and Lutuv all lack coda stops, which have all merged to /-ʔ/ in Mara (VanBik, 2009); Mara and Zophei now have a robust distinction between V and Vʔ rhymes. Lutuv has no final oral stops, but also lacks final glottal stops, suggesting different diachronic developments in these languages. Adding to the puzzle, Lutuv is the only Maraic language to lack final glottal stops. The tables in Figures 4-10 (as well as the full Lutuv correspondence table found in the Appendix) are reduced from the data in Lotven (2020), also in this volume. The rows represent rhymes found in synchronic languages (Lawngtlang Zophei in Fig. 4, Tlawngrang Zophei in Figs. 6 & 10, Mara in Fig. 9, Nuitah Zophei in Fig. 11, and Lutuv in Fig. 5, 7-8, & 12), while the columns represent corresponding rhymes found in VanBik's (2009) PKC reconstructions, organized by the first vowel of the rhyme for visual simplification and marked with an asterisk (*) as a reconstruction. For example, the top row of Fig. 4 indicates that there were lexical correspondences found in Lotven (2020) between PKC reconstructed etyma with the rhymes /*ee *eʔ/ and Lawngtlang Zophei lexical items with the rhyme /ii/.

Setting aside diachronic vowel changes in Lawngtlang Zophei (/e/ → /i/ and /a/ → /o/ → /au/), the language has followed the pattern of stop loss described for Mara in VanBik (2009). Fig. 4 shows the loss of glottal stop (/ee *eʔ/ → /ii/, /aa *aʔ/ → /au/) and the debuccalization of final stops (/eet *eek/ → /iʔ/, /at *(a)ak/ → /aʔ/).²

Figure 4. Loss of final stops in Lawngtlang Zophei (LTZ)

	PKC				
LTZ	/*i/	/*e/	/*a/	/*o/	/*u/
/ii/	-	*ee *eʔ	-	-	-
/iʔ/	*eet *eek	-	-	-	-
/au/	*aa *aʔ	-	-	-	-
/aʔ/	*at *(a)ak	-	-	-	-

Lutuv, on the other hand, has lost all coda stops, oral and glottal. Setting aside several diachronic vowel changes from PKC to Lutuv (/ii/ → /ii/, /ua/ → /uu/, /uu/ → /uu/), Fig. 5 shows evidence of the merger of *Vʔ, *Vt, and *Vk rhymes to VV open syllables. Few cognates with *Vp rhymes were collected for Lutuv, but they suggest divergence from other stop-final rhymes such as /*oop/ corresponding with /ii/ and /*uap/ corresponding with /əə/.

² Note that /*a/ → /*o/ → /au/ and /*e/ → /i/ are regular changes from PKC to Lawngtlang Zophei.

Figure 5. Loss of final stops in Lutuv

	PKC				
Lutuv	/*i/	/*e/	/*a/	/*o/	/*u/
/i/	*ii *i? *ik	-	-	-	-
/aa/	-	-	*aa *a? *(a)ak	-	-
/uu/	-	-	-	-	*ua *uak
/uu/	-	-	-	-	*uu *(u)ut *(u)uk

Three hypotheses for the differences between Lutuv and Zophei (as well as Mara) are presented here. First, Lutuv may have lost all oral and glottal stops at once. If this hypothesis is accurate, it must have happened after Mara and Zophei split with Lutuv and would indicate that the first two Maraic Innovations from VanBik (2009) occurred after that split. Second, Lutuv, may have lost final glottal stop then debuccalized final oral stops like Mara and Zophei, but then again lost final glottal stop (or just lost all final oral stops without debuccalizing). If this less-transparent hypothesis is accurate, future research may find evidence of several steps of loss, possibly interleaving with vowel changes.

The third hypothesis involves different rule ordering. As previously mentioned, Mara and Zophei lost coda glottal stops, then debuccalized final oral stops to fill the empty V? category. In this manner, Mara and Zophei have maintained a VV vs. V? distinction. Lutuv, however, may have undergone these steps in reverse order, debuccalizing final oral stops to merge with glottal stops, then deleting glottal stops—resulting in only VV not V?. If Mara and Zophei split from Lutuv before either of these developments, these steps may have happened due to contact with neighboring Maraic varieties and may have happened in different orders due to different contact situations depending on variety. I take the third hypothesis to be the most likely in that, unlike the first hypothesis, it does not rely on treating final oral stop and glottal stops together, and unlike the second hypothesis, it requires only two steps rather than three. In any case, the puzzle of Lutuv's lack of final glottal stops when surrounded on all sides by Maraic languages with them indicates a different path of diachronic development for Lutuv from its neighbors and merits further investigation.

4. CODA LIQUID LOSS

All Maraic languages have lost the PKC coda liquids /*l *l? *r *r?/, yet this superficial similarity obscures divergent developments of rhotics in Lutuv. Consider Tlawngrang Zophei (TRZ), in which *Vr rhymes have developed diachronically into a variety of synchronic rhymes. TRZ evidence suggests that *Vr rhymes developed differently based on the identity of the vowel. Among these developments, several processes are observed, (1) vocalization, where /*r/ vocalized to /a/ resulting in diphthongs (e.g., /*er *er?/ → /ia/); (2) deletion, where /*r/ was dropped without other vocalic consequence (e.g., /*aar/ → /aa/, /*uar/ → /ua/, /*or/ → /oo/); and (3) spontaneous nasalization, where /*r/ nasalized to /ŋ/ (/ *ir/

→ /iŋ/. The end result of these changes is a set of seven synchronic TRZ rhymes corresponding to PKC *Vr rhymes (/ia iŋ øø aa au oo ua/), as indicated in Fig. 6.

Figure 6. Tlawngrang Zophei (TRZ) rhotic loss

	PKC				
TRZ	/*i/	/*e/	/*a/	/*o/	/*u/
/ia/	-	*er *er?	-	-	-
/iŋ/	*ir	-	-	-	-
/øø/	-	-	*aar	-	-
/aa/	-	-	*aar *ar	*oor	-
/au/	-	-	-	-	*uur
/oo/	*iir	-	*aar	*or	-
/ua/	-	-	-	-	*uar

Lutuv, on the other hand shows a set of only four synchronic rhymes corresponding to PKC *Vr rhymes (/yə aa əŋ uuu/). With only three exceptions (/ir or uur /), all other PKC *Vr rhymes collapsed into the low vowel category in Lutuv (/iir er er? aar ar oor uar/ → /aa/). Rhyme correspondences between PKC and Lutuv are given in Fig. 7.

Figure 7. Lutuv rhotic loss

	PKC				
Lutuv	/*i/	/*e/	/*a/	/*o/	/*u/
/yə/	-	-	-	*or	*ua *ua?
/ie/	*ia				
/aa/	*iir	*er *er?	*aar *ar	*oor	*uar
/əŋ/	*ir	-	-	-	-
/uuu/	-	-	-		*uur

This collapsing of *Vr rhymes to /aa/ may have occurred first through the vocalization of /*r/ to /a/, then through monophthongization of the resultant diphthongs to the more sonorous second segment /a/, for example /*er/ → /*ea/ → /aa/. If this hypothesis is correct, it has relevant implications for the timeline of other Lutuv rhyme developments. First, /*ia/ likely raised to /ie/ and /*ua/ to /yə/ prior to the deletion of /*r/, otherwise these rising sonority diphthongs would likely have merged to /aa/ with /*ir *uar/ rhymes. The rhyme /*or/ is notable in patterning with /*ua *ua?/. It is possible that /*or/ raised to /*ur/ and was treated differently from other *Vr rhymes, much like /*uur/. The deletion of /*r/ in /*uur/

may have predated the loss of coda /*r/ in other categories, although it is not clear whether the raising of /*u/ to /u/ occurred before or after the rhotic deletion.³ Superficial similarities in Maraic (the loss of coda /*l/ and /*r/), obscure differences in the process of liquid coda loss. Where Tlawngrang Zophei appears to have lost *Vr rhymes piecemeal in favor of various synchronic rhymes, Lutuv collapsed nearly all *Vr rhymes to /aa/ indicating divergent diachronic development between Zophei and Lutuv.

5. CODA NASAL LOSS

The only coda consonants allowed in Maraic languages are nasals, which can be understood on a cline from Senthang, which retains coda nasal place features, to Mara (Van Bik, 2009) and Zotung (Shintani, 2016) with no codas. This section briefly overviews this cline and offers insight into the diachronic development of the three Lutuv VN rhymes /iŋ əŋ uŋ/. On the most conservative end of Maraic, Senthang (Ngun Tin Par, 2016) retains a 3-way contrast in coda nasals /m n ŋ/ as well as a single glottalized nasal /-mʔ/. Zophei and Lutuv retain only /-ŋ/. Within these two languages there is a cline with Lawngtlang and Nuitah Zophei with five VN rhymes /iŋ eŋ aŋ oŋ uŋ/, Tlawngrang Zophei with four /iŋ aŋ oŋ uŋ/, and Lutuv with only three /iŋ əŋ uŋ/. Zotung has lost all nasal codas in favor of nasalized vowels (Shintani, 2016), while Mara first lost nasal codas in favor of nasalized vowels, then lost contrastive vowel nasality (Löffler, 2002, 2004).

The three Lutuv VN rhymes do not have straightforward origins. While /iŋ/ largely developed from rhymes containing /*i/, the other two VN rhymes /əŋ uŋ/ show overlapping origins with PKC /*un *uŋ/ developing into both, as shown in Fig. 8.

Figure 8. Lutuv VN rhymes

	PKC					
Lutuv	/*i/	/*e/	/*a/	/*o/	/*u/	
/iŋ/	*ii *iit *ik	*im *iiŋ *iŋ	-	-	-	*ul
/əŋ/	*ir	*eŋ	-	*oon	*un *uŋ *uum *uaŋ	
/uŋ/	-	-	-	-	*uu *uʔ *um	*un *uŋ *uul

Preliminary work on Lutuv suggests that there may be phonological or morphophonological environments where Lutuv VN rhymes are realized as nasalized vowels. Further work on Lutuv morphophonology as well as variation between Lutuv and Zophei varieties will contribute further to our understanding of nasal rhyme loss and vowel nasalization.

³ It is also worth mentioning the spontaneous nasalization of /*ir/, in this case to /əŋ/ rather than /iŋ/ as in TRZ. Spontaneous nasalization was only noted in Lotven (2020) in the word *kir ‘to curl’ which finishes with a nasal in all three Zophei varieties examined here and merits further investigation.

6. LOW VOWEL RAISING

Maraic languages have undergone a variety of diachronic vowel changes, in some cases amounting to dramatic shifts in vowel systems. Van Bik (2009) describes one such shift in Mara: /a/ → /ɔ/ → /u/ → /uu/. Although there are many vowel changes from PKC to Lutuv worth investigating, this section makes the modest contribution of discussing low vowel raising in Mara and Zophei and its apparent absence from Lutuv diachronic phonological development. As evidenced in Figures 9-11, some lexical items with /a/ rhymes in Mara, Tlawngrang Zophei, and Nuitah Zophei have developed into /ɔ/ or /o/ (note that [ɔ] and [o] do not contrast in Mara, Lutuv, or Zophei). For Mara, /aa aʔ/ as well as most closed syllables containing a low vowel retained /a/, with /*aa *aar/ developing into both /a ɔ/ depending on the lexical item. Mara /*aaw/ is the only /a/ rhyme exclusive to the synchronic /ɔ/ category. This situation of variation in development within the same rhyme type is suggestive of language contact, especially from Hakha Lai and other KC languages that retain PKC /*a/.

Figure 9. /a ɔ/ in Mara

	PKC				
Mara	/*i/	/*e/	/*a/	/*o/	/*u/
/a/	-	-	*aa *aat *aŋ *aʔ *aak *aam *at *am *aaŋ *ak *an *aar *aap	-	-
/ɔ/	-	-	*aa *aar *aaw	*ot	-

Zophei also provides evidence of /a/ raising, highlighted for Tlawngrang and Nuitah Zophei in Figs. 10-11, respectively. In these varieties, /*aa *aʔ *aar/ raised to /oo/ and /*aar *ar/ (as well as /*aa/ in TRZ) show correspondences to synchronic /aa/. Again, there is overlap between categories, likely through contact with Hakha Lai and other nearby KC languages.

Figure 10. /aa oo/ in Tlawngrang Zophei (TRZ)

	PKC				
TRZ	/*i/	/*e/	/*a/	/*o/	/*u/
/aa/	-	-	*aa *aar *ar	*oor	-
/oo/	*iir	-	*aa *aʔ *aar	*oŋ *or	-

Figure 11. /aa oo/ in Nuitah Zophei (NTZ)

	PKC				
NTZ	/*i/	/*e/	/*a/	/*o/	/*u/
/aa/	-	-	*aar *ar	*oor	-
/oo/	*iir	-	*aa *a? *aar	-	-

One possible analysis is that Zophei saw (1) the deletion of coda glottal stop, merging /*aa *a?/, then (2) the raising of /aa/ → /oo/, and last (3) the movement of /*aar *ar/ into the /aa/ position. This story contains holes, such as the /*aa/ → /aa/ retentions in TRZ and the /*aar/ → /oo/ correspondences in TRZ and NTZ. Both are likely in the lexicon through borrowing, the former from Hakha and the latter possibly through varieties of Mara.

Lutuv, on the other hand shows no evidence of the /a/ → /o/ change, as illustrated in Fig. 12. Instead, synchronic /aa/ in Lutuv has diverse origins including, as mentioned in Section 4, Vr rhymes. Lutuv /oo/, however, has largely been built from nasal loss in VN rhymes containing /o/ and the monophthongization /*aaw/ → /o/, a process that is also found nearby Lawngtlang Zophei.

Figure 12. /aa oo/ in Lutuv

	PKC				
Lutuv	/*i/	/*e/	/*a/	/*o/	/*u/
/aa/	*iir	*er *er?	*aa *ak *a? *aar *aak *ar	*oor *oŋ	*uar
/oo/	*im	-	*aaw	*oom *om *oon *ooŋ	-

Evidence for the /a/ → /o/ (or /ɔ/) change from PKC to Mara and Zophei is complicated by likely borrowings from nearby languages, both from those undergoing similar changes and from conservative Hakha Lai. That Lutuv does not appear to have undergone this change offers another piece of evidence for divergent development of Lutuv.

7. SUMMARY

Lutuv shares several surface similarities with Mara and Zophei, yet closer examination of correspondences between PKC, Mara, Zophei, and Lutuv lexical items reveals differences in their development that suggest Mara and Zophei are more closely related to each other than either is to Lutuv. These similarities involve syllable structure simplification processes of onset cluster loss, coda liquid loss, coda stop loss, and a loss of place distinction in nasal codas. Yet unlike Mara and Zophei, Lutuv

lacks CV? syllables, mostly merged *Vr rhymes to /aa/, and does not appear to have participated in the /a/ → /o/ shift. These Lutuv deviating paths of innovation offer differences from its Maraic neighbors worth further investigation.

Lutuv is geographically central in the Maraic-speaking region and has likely influenced and been influenced by all Maraic languages, evidenced by multiple paths of change for the same PKC rhyme. It is possible that Lutuv is more closely related genetically to other Northern or Central Chin languages, but with heavy influence from Mara and Zophei. It is possible that Mara and Zophei underwent syllable structure simplification process first, then acted as catalysts for those changes in surrounding languages. Zotung may prove to be a similar case where a nearby language radically reduced its syllable shape inventory in contact with Mara. Like Southern Chin languages, Zotung did not undergo the /*j/ → /z/ change shared by all other Central and Maraic languages, yet Zotung is grouped with Maraic for superficial syllable structure similarities. Because of these similar yet unique developments in a close geographic area--the center of the Maraic-speaking region--Lutuv offers unique opportunities to understand syllable structure simplification, vowel shifts, and whether 'Maraic' describes a group separate from Central and Southern Chin or a contact situation between them.

APPENDIX: RHYME CORRESPONDENCES BETWEEN PKC AND LUTUV

Lutuv	PKC				
	/*i/	/*e/	/*a/	/*o/	/*u/
/ii/	*ii *iin *iat *iʔ *in (*iak) *ik *il *ial	-	*aaw		*uul *uy *ul
/ii/	*iat	*eʔ *eel *eek *ewʔ *em	-	*oop	-
/yy/	-	-	*ay	*ooy	*uay
/yə/	-	-	-	*oo *or *oy	*ua *uaʔ *uyʔ
/ie/	*ia *ian	*ee *eel	*aal *aay *al *ay	*ooy	-
/ing/	*ii *im *iit *iin *ik *in	-	-	-	*ul
/ee/	*iam *ian *ian	*ee *eem *eel *en *el *een	*ay *an *aw	-	-
/aa/	*iir	*er *erʔ	*aa *ak *aʔ *aar *aak *ar	*oor *on	*uar
/əə/	-	-	*at *an	*ook *oy *ok	*uap
/əng/	*ir	*en	-	*oon	*un *uum *un *uan
/oo/	*im	-	*aaw	*oom *oon *om *oon	-
/uui/	*iaw	-	-	-	*uur *uak *ua
/uə/	-	-	-	*ool	-
/uu/	-	-	*aa *aw *ay	-	*uk *uan *uun (*uan)
/ung/	-	-	-	-	*uu *un *uʔ *un *um *uul
/uo/	-	-	*aam *aan *am	*oon *on	*uam
/uu/	-	-	-	*ool	*uu *uuk *uut *uk *ut *uum

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