# Comparative Tangkhul*

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**Abstract**

This paper presents a preliminary lexical/phonological reconstruction of Proto-Tangkhul (PTk) and presents a tentative but general overview of the sound changes that relate this meso-language to Proto-Tibeto-Burman (PTB)—as reconstructed by Matisoff (2003)—and to three daughter languages (Standard Tangkhul, Kachai, and Huishu). The phonological correspondences and reconstructions are presented according to prosodic constituents (prefixes, onsets, rhymes, and tones). These subsections include discussions of several theoretically interesting sound changes and morphological developments.

## 1 Introduction

The name *Tangkhul* (also *Luhuppa* or *Luppa*, espcially in older literature) refers to an ethnic group of Manipur State, India, and contiguous parts of Nagaland (another state of India) and Burma (see Figure 1). The Tangkhuls are quite diversified linguistically, and the speech varieties of most Tangkhul villages are not mutually intelligible with those of neighboring villages (though the similarities are large enough to facilitate the rapid learning of one another's languages). However, it is clear that the Tangkhul languages are closely related to one-another and form a distinct subgroup within the Tibeto-Burman family. It has long been noted that Tangkhul is a group of languages, rather than a single language (Brown 1837), however, almost all of the available descriptions of

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Tangkhul languages have concentrated on a single variety—the language of Ukhrul town, which has recently come to serve as a lingua franca for the whole Tangkhul area. Descriptions of other varieties are limited to a few short word lists collected in the 19th century by Brown (1837) and McCulloch (1859), representing a total of 6 varieties. Brown's wordlists were suggestive, but quite short. McCulloch's wordlists were quite extensive, but are often difficult to interpret. This study brings to the comparative table data from two other Tangkhul languages, Kachai and Huishu. The current study relies primarily upon Standard Tangkhul, Kachai, and Huishu data, although data from the other sources are introduced where appropriate.

## 1.1 The Tangkhul Language Group

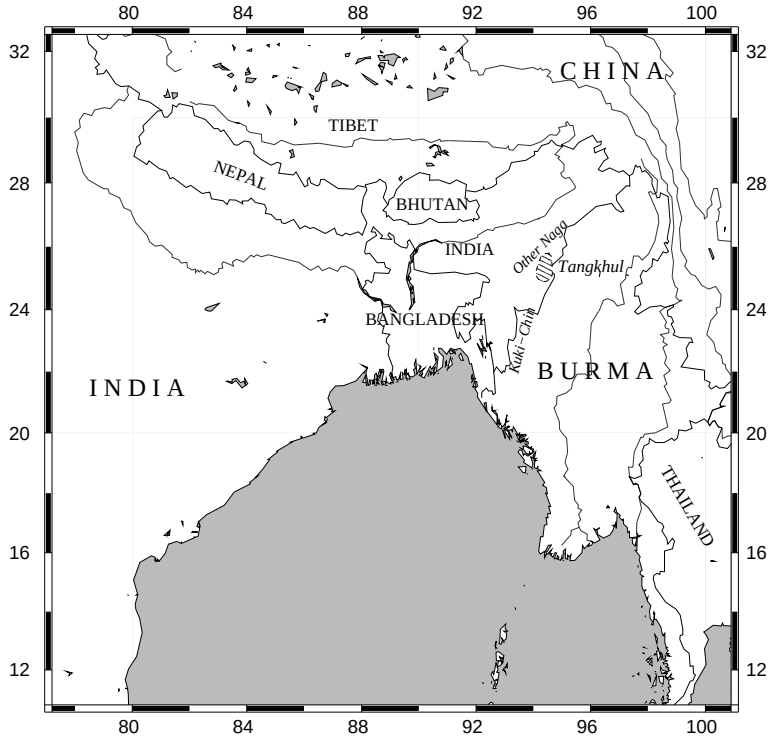


Figure 1: The geographical position of the Tangkhul languages.

Since this paper endeavors to reconstruct Proto-Tangkhul, it is essential that we determine the scope of the subgroup to be examined. This is not a trivial task. The linguistic situation of Northeast India—the linguistic area James Matisoff has designated *Kamarupa*—is highly complex. Despite a number of attempts to establish linguistic groupings, the high level of linguistic diversity, the intense language contact, and the general paucity of data on many of the languages in the area has hampered efforts to establish solid subgroups among the Tibeto-Burman languages spoken in this area. In the case of the languages spoken by people who consider themselves ethnically Tangkhul, only a few have been described at all and only one has been described well (the Ukhrul language, a highly conservative dialect of which seems to have served as the basis for Standard

Tangkhul). It is somewhat premature, of course, to attempt a reconstruction when the extent of linguistic diversity within a group is not really known or understood. However, it to be hoped that as new data come to light, the insights of this paper will be useful in processing and organizing them.

Perhaps the simplest way of delimiting what will be treated as Tangkhul by this paper is to lay out information on the Tangkhul languages for which there are some data, and then present a summary of the characteristics that seem to distinguish these languages from other Kamarupan languages.

### 1.1.1 Tangkhul Speech Varieties

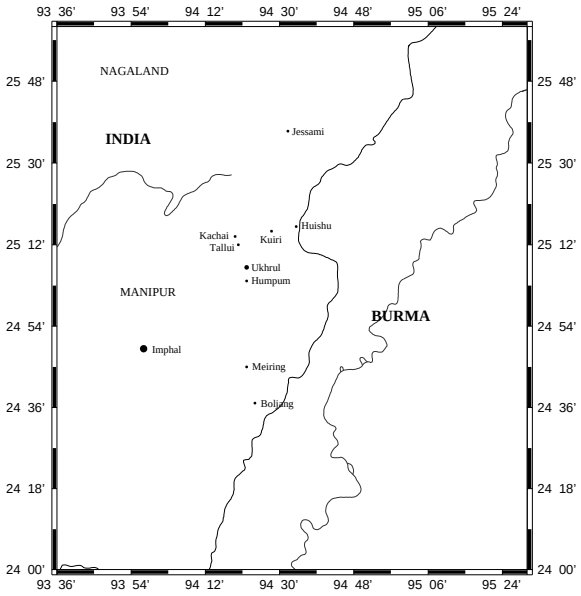


Figure 2: Map of the Tangkhul Area.

**Standard Tangkhul** Throughout the Tangkhul ethnic area (see Figures 1 and 2), roughly coterminous with the Ukhrul district of Manipur state, a language called by its speakers *Tangkhul Tui* [taŋkhʊl twi] is in use as a lingua franca. It is used as the primary medium of worship by Tangkhul Christians (who make up a great majority of the Tangkhul population) and is also in use in education, government, and literary endeavors. This speech is mutually intelligible with the speech of Ukhrul town, but differs from it in several respects. For example, it preserves the distinction between /r-/ and /l-/ and between /-u/ and /-ɐ/. It seems similar in most respects to the language called Luhuppa by Brown (1837). Standard Tangkhul is now accepted as the intra-tribal medium of communication by young and middle-aged Tangkhuls (although there are still older people who do not speak it) but it has not displaced the so-called "village dialects"—the highly local and diversified languages employed at a family and village level. Most attempts at describing Tangkhul have not

focused on this dialect, but upon the speech of Ukhrul. Exceptions include an unpublished set of papers produced during a field methods course at Berkeley (2002-2003).

**Ukhrul** The language of Ukhrul Town, the District Headquarters of Ukhrul District and the largest settlement in the Tangkhul Area, has been the subject of a sketch published in *Linguistic Survey of India* (Grierson 1903), four dictionaries (Pettigrew 1979; Bhat 1969; Luikham 1974; Arokianathan 1995) as well as a comprehensive (if idiosyncratic) grammar (Arokianathan 1987) to supplement the fairly extensive grammatical sketch provided in Pettigrew's dictionary. Most authors fail to distinguish between this variety and the Tangkhul language used as a lingua franca (although authors invariably mention that the native languages of other villages are strikingly dissimilar to the speech of Ukhrul).

**Kachai** The language of Kachai village (located in the west-central part of Ukhrul District, near the border with Senapati District), is markedly different from Ukhrul dialect or Standard Tangkhul. However, it is not so divergent as the speech of Huishu village or Champhung, let alone Khangoi or Central Tangkhul. Today, it is probably spoken by slightly more that 3000 individuals, most of them residing in, or immediately descended from former residents of, Kachai village. This paper represents the first major dissemination of data on this language.

**Phadāng** However, in the Nineteenth Century, McCulloch (1859) collected a wordlist from a language closely related to Kachai and spoken in a nearby village called Phadāng. In some sense, this language seems intermediate between Ukhrul and Kachai, but this is probably due in part to innovations that have occurred in the Kachai area since the collection of these data.

**Huishu** The dialect of Huishu village, in the northeastern part of Ukhrul district near the border with Burma, is far more innovative that Standard Tangkhul, Kachai, or Phadāng in its phonology, morphology, and lexicon. However, it still shares many of the distinctive characteristics of Tangkhul languages (to be discussed below). This paper is the first major attempt to present data on Huishu to the scholarly public.

**Champhung** The Champhung language is known only from a wordlist provided by Brown (1837), who received the data from the British officer Capt. Gordon. The language seems to share some characteristics with Kachai and Phadāng, but these are as likely the result of conservation in these three languages as of shared innovation. Champhung is notable in preserving PTk final **-l.*

**Northern and Central Tangkhul** Brown (1837) also includes Capt. Gordon's wordlists for languages labelled Northern, Central, and Southern Tangkhul. Of these, the Northern and Central varieties bear the greatest resemblance to one another and to the Tangkhul languages discussed thus far. These languages seem to share a certain amount of lexical material with the Kuki-Chin languages. However, based upon the limited amount of data available, it seems safest to treat them as the southeastern fringe of the Tangkhul language group.

**Khangoi** McCulloch (1859) gathered a rather large corpus of data on the language spoken in Khangoi village, which seems quite similar to both Northern and Central Tangkhul (a fact noted by Grierson 1903). While only a little knowledge about the phonology, morphology, and lexicon of Khangoi may be deduced from the data given by McCulloch, it seems to share only slightly more with the core Tangkhul group (consisting of Standard Tangkhul/Ukhrul, Kachai, Phadāng, Huishu, and Champhung) than with Kamarupan languages generally, and seems to share a good deal with the Kuki-Chin languages (including the words for 'hand' and 'foot'). In light of this evidence, Grierson (1903) was probably right to say that this language (along with Brown's Northern and Central Tangkhul) sits at the transition between Tangkhul and Kuki-Chin. Nevertheless, it meets most of the criteria established here for classification as a Tangkhul language (see section 1.1.2).

**Southern Tangkhul** Brown's Southern Tangkhul, on the other hand, is clearly a Kuki-Chin language, and there seems to be no basis for classifying it as Tangkhul other than, perhaps, the tribal identity of its speakers.

**Classification** A tentative outline of the internal structure of the Tangkhul language family is given in Figure 3.

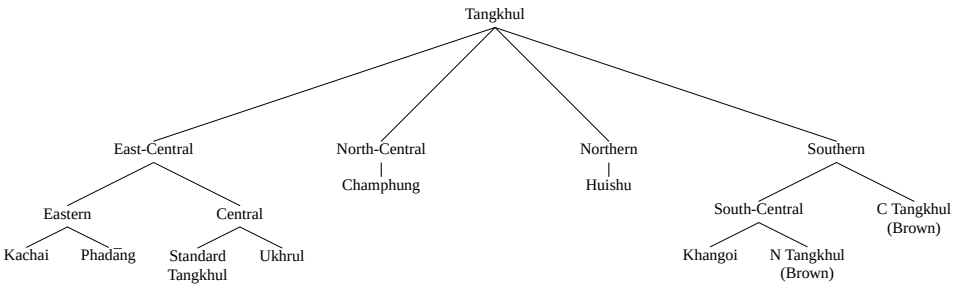


Figure 3: Internal structure of the Tangkhul language family.

### 1.1.2 Characteristics of Tangkhul Languages

**Ethnic Identity of Speakers** The most obvious working definition of the Tangkhul language family is *the family of Tibeto-Burman languages spoken by members of the Tangkhul Tribe*. This definition is complicated by a number of factors, and is clearly inadequate (as will be seen), since some of the languages spoken as a mother-tongue by ethnic Tangkhuls are not members of the family being discussed here (but rather, of Kuki-Chin) and because it is possible that there are members of other Naga tribes speaking languages that belong in the Tangkhul group. Thus, while ethnicity can be taken as neither a necessary nor a sufficient criterion for membership in the Tangkhul family it is nevertheless a useful starting point for a discussion of this group of languages.

**PTB *s- > *th-; *ts-, *sy- > *s-; *dz-, *dzy-, *tsy- > *ts-** Another classificatory characteristic of these languages which is necessary but not sufficient for membership in the group is that they reflect a specific series of sound-changes which occurred subsequent to the Proto-Tibeto-Burman

period. In these sound changes, PTB **s-* became **th-*, PTB **-ts* and **sy-* merged to become **s-*, and **dz-*, **dzy-*, and **tsy-* merged to become **ts-*. The first of these changes is the most widespread, and evidence for it is found not only in Tangkhul and several other Naga languages (Nruanghmei [=Rongmei], Maram (Khoirao), Sema, etc.) but also in the Kuki-Chin languages and Meithei. The other developments are more confined, and may be limited to Tangkhul and Kuki-Chin. It is not clear whether these changes should be viewed as the result of drift, of some type of areal phenomenon, or of common genetic inheritance. However, all of the Tangkhul languages seem to share these developments.

***ky-, *gy- > *ʃ-** A historical/phonological development that seems more or less confined to the Tangkhul family is the reflection of PTB **ky-* and **gy-* as **ʃ-*. These onsets are reflected in many of the neighboring languages as palatal stops or affricates, and it is likely that PTk **ʃ-* developed from a similar stop or affricate. This seems especially likely in light of the fact that there is a synchronic phonological relationship, in some Tangkhul languages, between *c-* and *ʃ-* (which acts as the "aspirated" counterpart of *c-*).

***kr-, *tsy- > *c-** Just as PTk **ʃ-* descends from PTB **ky-* and **gy-*, PTk **c-*, which functions morphophonologically as the "unaspriated" counterpart to **ʃ-*, descends from PTB **kr-* and **tsy-*. This development, likewise, seems to be completely confined to the Tangkhul family. The fact that PTk **ʃ-* and **c-* function morphophologically as if they were an aspirated/unaspirated pair probably reflects some earlier diachronic state:

PTB **ky-*, **gy-* > ***$c^h$-* > PTk **ʃ-*
PTB **kr-*, **tsy-* > ***c-* > PTk **c-*

**Neutralization of vowel length distinctions in non-low vowels** Tangkhul languages may be distinguished from the Kuki-Chin languages by the fact that, while KC languages typically retain the PTB vowel length distinctions, in Tangkhul all of these distinctions are neutralized, except in the rhymes of the form **-aC* and **-aːC*, where the distinction remains.

**Dissimilation of Aspiration in Prefixes** All of the Tangkhul languages so far examined display, in some manner, a very productive voicing dissimilation pattern between prefixes and contiguous roots. Historically, at least, the onsets of Tangkhul prefixes were aspirated if and only if they occurred immediately to the left of roots with voiced onsets. It should be noted, though, that related patterns are attested in Angami (Marrison 1967:100) and Jingpho (Matisoff 2003).

**Nominalizing Prefix *k*V*-** Many Tibeto-Burman languages have a velar-initial prefix associated with some grammatical function associated with nominalization such as relativization or the formation of adjectives from verbs. However, it appears to be only within Tangkhul proper that this prefix is completely productive and can be used to mark nominalization on any verbal stem.

**Lexical Innovations** There are also a number of lexical innovations that identify Tangkhul languages and set them apart from most or all Tibeto-Burman languages:

1. PTk **war* 'mushroom' seems to be confined entirely to Tangkhul languages.

2. PTk **kə.phuŋ* 'mountain' also seems to lack cognates outside of Tangkhul.

3. PTk Reflexes of **kə.mi* 'to give' are found in most of the Tangkhul languages (a possible exception being Khangoi). This word may be an irregular reflex of PTB **pəy* 'give'. This form seems to be confined to the Tangkhul family.

4. The normal word for 'fish' in PTk was **khaj*, apparently derived from PTB **d-kaːy* 'crab'. Cognates of this word also mean fish in certain Zeliangrong and Angamoid languages.

5. PTk **pan* 'hand' is probably an irregular reflex of the PTB form **wan* 'hand'. A number of non-Tangkhul PTB languages have labial obstruent-initial forms meaning 'hand'. These languages are almost exclusively from the Zeliangrong group.

6. PTk **pɐj* 'foot' has cognates in certain other Kamarupan languages (especially Zeliangrong and Angamoid languages), but cannot be reconstructed for Tibeto-Burman as a whole.

### 1.1.3 Languages Conspicuously Absent

The set of criteria sets up a category of languages that is more restricted than the Kuki-Naga group of *Linguistic Survey of India* (Grierson 1903), the Tangkhul group defended by Marrison (1967), or the Tangkhul group recently defined by Burling (2003). Specifically, these criteria exclude not only Maram̄ and Liangmai (Kwoireng)—which was classified with Tangkhul in LSI but not by other other investigators—and Maring, which earlier investigators agree on classifying as part of the Tangkhul group. This classification does not preclude the existence of a special relationship between these languages and the Tangkhul languages. In fact, it seems very likely that all of these languages are more closely related to one another than to most other Tibeto-Burman languages. The claim made here is that the members of the Tangkhul group as I have defined it are all more closely related to each other than to any language outside the group. In order to evaluate this claim, it will be profitable to look at each of these languages, and why they should be excluded from the group:

**Liangmai** Liangmai is best seen as a member of the ZEME (Burling 2003) or ZELIANGRONG group. It is not characterized by any of the sound changes that distinguish the Tangkhul languages. The PTB **s-* > **th-* change is largely unattested:

| | |
|---|---|
| 'three' | *sum* < PTB **sum* |
| 'tree' | *siŋ* < PTB **siŋ* |
| 'fruit' | *si* < PTB **sey* |

Further, PTB **ts-* becomes Liangmai *th-* instead of *s-* as shown by Liangmai *təthəm* < **tsam* 'hair' and PTB **gy-* becomes Liangmai *c-* instead of *ʃ-* as shown by Liangmai *tacat* < PTB **b-r-gyat*. While the data is limited, there is no evidence for the existence of a nominalizing suffix **kV-*, or for other aspects of morphology specific to the Tangkhul languages. Lexically, though, Liangmai does have some affinities with the Tangkhul languages. For example, a reflex of the PTB form **d-kaːy* 'crab', Liangmai *cakha*, is the general word for 'fish' and the word for 'hand' is *caben* (compare to PTk **pan* 'hand').

**Marām (Khoirao)** Marām is also a Zeliangrong language. Like Liangmai, it does have lexical affinities to the Tangkhul languages (though it also shares many specific lexical items with the other Zeliangrong languages). Unlike Liangmai, it shows evidence for the **s-* > *th-* innovation. For example, PTB **sey* > Marām *athe* 'fruit' and PTB **siŋ* > Marām *athiŋ-buŋ* 'tree'. However, PTB **ts-* becomes *t-* as demonstrated by Marām *təm* < PTB **tsam* and PTB **gy-* becomes *c-* as shown by Marām *təcət* < PTB **b-r-gyat* 'eight'. There is little evidence either for or against Marām meeting the morphological criteria set up here for membership in the Tangkhul group, and Marām is somewhat divergent as a member of the Zeliangrong group. Nevertheless, the evidence against placing Marām within the Tangkhul core is stronger than stronger than any evidence that would place it there.

**Maring** The other language that is widely classified with the Tangkhul languages is Maring. Unlike the other two languages discussed here, it is not part of the Zeliangrong group. In some ways, as mentioned by Grierson (1903), Maring acts like a bridge between the Tangkhul languages and the Kuki-Chin languages, although it also shares some affinities with the Zeliangrong languages and Meithei. Lexically, it seems to have more in common with the Kuki-Chin languages than the Tangkhul languages, but it does not feature such characteristic Kuki-Chin features as stem alternation and pronominal clitics marking subject agreement. Maring does share the **s* > *th-* and **ts-* > *s-* innovations with Tangkhul (and with the Kuki-Chin languages, for that matter) but Maring does not share Tangkhul's **gy-* > *ʃ-* innovation. For example, PTB **b-r-gyat* > Maring *tuchot* 'eight' and PTB **kyim* > Maring *tuchot* 'house'. There is sufficient evidence in Grierson (1903) and other sources to safely remark that Maring does not employ a reflex of **kV-* to nominalize verbs. Instead, the nominalizing affix is *-ba*, a suffix which is probably cognate with Meithei *-pa*, also a nominalizing suffix (Chelliah 1997). On balance, it does not appear that Maring is part of the core Tangkhul group, although it seems certain that Maring and the Tangkhul languages do belong to the same top-level branch of the Tibeto-Burman family.

## 1.2 Data

### 1.2.1 Sources

The data used in this study are derived primarily from my own notes and other unpublished resources developed during a year-long field methods course on Tangkhul Naga conducted at Berkeley during the 2002-2003 academic year. The data on Kachai and Huishu are the result of my own work with native speakers of these languages: Mrs. Ramshang Khan Lolly, Mr. Jonathan Zingkai,

and Mr. Rufus Zingkai. Their patience, interest in their languages, and good instincts for identifying linguistic structure are reflected in the quality of data presented here. It should be noted that the quality of the Kachai data is somewhat higher than that of the Huishu data, since I had much greater opportunity to do elicitation work on Kachai than on Huishu. This being the case, the tonal judgments given for Kachai can be more or less trusted while those for Huishu should be interpreted as tentative at best.

The Standard Tangkhul data owe much to other participants in the field methods course, as well as to Khan Lolly, who also served as the main consultant for the course's duration. Additionally, several other sources were consulted for Tangkhul data. These include a number of fine dictionaries (Pettigrew 1979; Bhat 1969; Luikham 1974; Arokianathan 1995) as well as a useful grammar (Arokianathan 1987) and scattered materials from other sources (Brown 1837; Grierson 1903; Weidert 1987).

Data from other language varieties have also been essential in this study: Phadāng (McCulloch 1859; Grierson 1903), Khangoi (McCulloch 1859; Grierson 1903), Champhung (Brown 1837), N. Tangkhul (Brown 1837), and C. Tangkhul (Brown 1837). Data from these varieties are all taken from the primary authorities, all of which have roots in the nineteenth century, and none of which record certain phonetic niceties such as tone. This data is not presented in the original transcription. Instead, it is retranscribed according to the phonetic value of Brown's and McCulloch's transcriptions, as far as I can determine them.

### 1.2.2 Notes on Transcription

These and my own data (from Standard Tangkhul, Kachai, and Huishu) are presented in my IPA-based transcription system for Tangkhul, which has several features that may not be immediately obvious:

- Hyphens are used to mark the divisions between stems in compound words.
- Periods are used to mark the divisions between prefixes and the remainder of stems.
- Symbols have their IPA values: "j" represents a palatal glide and "y" represents a close front rounded vowel. "ɐ" is used to represent the stressed allophone of /ə/ that occurs in roots while "ə" is used to represent the mid central vowel that occurs in prefixal syllables.
- Tones are indicated with diacritic accents: "x́" represents high tone, "x̀" represents low tone, "x̄" represents the low-mid tone of Kachai, and "x̂" represents a falling tone.

The PTB reconstructions are given in the standard transcription system used for the Benedict/Matisoff reconstruction of PTB (as described in Matisoff 2003). In this system, "y" is always used to represent a palatal glide, not a close front rounded vowel.

# 2 Proto-Inventory

The inventory of proto-prefixes is given in Table 1. The reconstructed inventories of onsets and rhymes are given in Tables 2 and 3 respectively.

The tonal inventory of the proto-language is not given here, since this study does not endeavor to reconstruct PTk tone. In fact, there is reliable data for the tones of only two Tangkhul languages (Standard Tangkhul and Kachai) and these display such complicated and irregular correspondences that it seems very difficult to derive them from the same system. Additional data may make the reconstruction of these features possible.

| | | |
|---|---|---|
| *Noun Prefixes* | **ʔa-* | 'default prefix' |
| | **pə-* | |
| | **tə-* | |
| | **kə-* | |
| | **ci-* | |
| | **mə-* | 'body-part prefix' |
| | **ŋə-* | |
| | **si-* | 'animal prefix' |
| *Verb Prefixes* | **kə-* | 'nominalizing prefix' |
| | **pə-* | 'verbalizing prefix' |
| | **tə-* | |
| | **kə-* | |
| | **ci-* | 'transitive prefix' |
| | **mə-* | 'stative prefix'; 'causative prefix' |
| | **ŋə-* | 'reciprocal prefix' |

Table 1: Proto-Tangkhul prefixes.

| | | | | |
|---|---|---|---|---|
| **p-* | **t-* | | **k-* | **ʔ-* |
| **pʰ-* | **tʰ-* | | **kʰ-* | |
| **m-* | **n-* | | **ŋ-* | |
| | **ts-* | **c-* | | |
| **hw-* | **s-* | **ʃ-* | | **h-* |
| **w-* | | **j-* | | |
| | **l-* | **r-* | | |
| | **tl-* | | | |

Table 2: Proto-Tangkhul onsets.

# 3 Prefixes

The Tangkhul languages have inherited from Proto-Tibeto-Burman a strong tendency towards prefixation in their affixal morphology. Contrary to some more generally observed trends, Tangkhul prefixes tend to be more closely associated with roots than suffixes (that is to say, the constituent to which a suffix attaches is likely to consist of a root and one or more prefixes, but it is less common

| | | | | | |
|---|---|---|---|---|---|
| *-*a* | | | *-*i* | *-*o* | *-*u* |
| *-*aj* | *-*ɐj* | *-*ej* | | | *-*uj* |
| *-*aw* | | *-*ew* | | *-*ow* | |
| *-*am* | *-*ɐm* | (*-*em*) | *-*im* | (*-*om*) | *-*um* |
| *-*an* | *-*ɐn* | (*-*en*) | *-*in* | *-*on* | *-*un* |
| (*-*aŋ*) | *-*ɐŋ* | *-*eŋ* | *-*iŋ* | *-*oŋ* | *-*uŋ* |
| (*-*al*) | (*-*ɐl*) | (*-*el*) | *-*il* | *-*ol* | *-*ul* |
| *-*ar* | *-*ɐr* | *-*er* | *-*ir* | *-*or* | *-*ur* |
| *-*ap* | *-*ɐp* | (*-*ep*) | *-*ip* | *-*op* | *-*up* |
| *-*at* | *-*ɐt* | *-*et* | *-*it* | *-*ot* | *-*ut* |
| *-*ak* | *-*ɐk* | *-*ek* | *-*ik* | *-*ok* | *-*uk* |

Table 3: Proto-Tangkhul rhymes.

for a prefix to attach to a stem consisting of a root and one or more suffixes). In fact, many of the prefixes found in Tangkhul languages behave morphologically as if they are part of the root. While it is possible to assign independent historical origins to these elements, from a synchronic standpoint the factors that identify them are phonological and not morphological. As will be seen, it is often not possible to assign a consistent meaning or grammatical function to these prefixes, which will be referred to here as *lexical prefixes*. These non-productive prefixes may be distinguished from the grammatically productive prefixes to which a particular function can be assigned.

It should be asked why these two types of morphs, one both productive and contentful and the other non-productive, should be grouped together under the label *prefix*. The foremost argument, of course, is the historical one. Even if the lexical prefixes are not now analyzable, they likely reflect prefixes—or other morphological elements—that were productive at some time in the Sino-Tibetan linguistic past. But there are also synchronic reasons for grouping these two classes of morphs together:

1. They do not bear stress, unlike root syllables.

2. Their tonal properties are predictable under roughly the same conditions.

3. They are subject to the *aspiration rule* which causes obstruent-initial prefixes to aspirate before sonorant-initial roots.

There is also an additional diachronic reason for treating the prefix syllables as distinct from the root: even when prefixes have no analyzable meaning or function, they are still frequently replaced by other prefixes.

## 3.1 Prefixes and Stress

In Tangkhul languages, stress is always predictable. Only roots bear stress, and prefixes never bear stress. The preferred stress pattern, for a word (and foot), is iambic or anapestic. That is to say, a stem usually consists of a stressed (heavy syllable) root and one or two unstressed (light syllable)

prefixes. Suffixes that are not a stem in their own right are not stressed, but these often form part of the same stressed syllable as the root.

The unstressed nature of these prefixes is probably the source of their relatively predictable vocalism. In almost all cases, the vowel in a prefix is either a mid-central vowel [ə], or a high vowel [i $\sim$ *ɨ*]. With few exceptions, the high vowel occurs after fricatives and affricates and the mid vowel occurs elsewhere. The mid vowel could probably be treated as an allophone of /ɐ/ that occurs in unstressed syllables, but it has been symbolized as ə here in order to facilitate the easy identification of unstressed prefixal syllables.

## 3.2 Prefixes and Tone

The unstressed prefixes are very short and cannot bear the full range of tonal contrasts observed in the stressed root syllables. There is some question as to whether prefix tone is ever contrastive, although the evidence seems to favor the argument that these tonal distinctions can be of importance in numerals and nouns. For verbs, in any case, the tonal melodies of the prefixes are entirely predictable. In standard Tangkhul, verb prefixes always bear the low tone. In Kachai, a single prefix before a root bears the low-mid tone; sequences of two prefixes bear the high tone followed by the low tone. This can be illustrated by the comparison of some cognate words:

| **Gloss** | **Tangkhul** | **Kachai** |
|---|---|---|
| 'far' | *kə̀.tà* | *kə̄.tú* |
| 'alive' | *khə̀.rìŋ* | *khə̄.rɐ̀ŋ* |
| 'warm' | *khə̀.lùm* | *khə̄.lúm* |
| 'hear' | *khə̀.ŋə̀.nà* | *khə́.ŋə̀.nɐ̄* |
| 'cough' | *khə̀.ŋə̀.khá* | *khə́.ŋə̀.khú* |
| 'lick' | *khə̀.mə̀.lek* | *khə́.mə̀.lēk* |

It seems, then, that verb roots can be lexically specified for tone, but that verb prefixes never carry such a lexical specification. It is filled in according to the default by the grammar, and the nature of the default may vary across languages in the group. These defaults apply across both lexical and productive prefixes.

## 3.3 Aspiration Rule

The third, and probably most interesting, phonological characteristic of prefixes that can be reconstructed for the Tangkhul language group is the "rule" that causes obstruent prefixes to become aspirated before roots with sonorant onsets, or—to phrase it in different terms—prefixes with obstruent onsets have two allomorphs, and the "aspirated" allomorph is selected when the prefix occurs before a root with a sonorant onset. Some form of this rule can be found in all of the Tangkhul languages for which there are enough data to make a determination. In Standard Tangkhul and Kachai, the aspirated allomorph appears before sonorant-initial prefixes as well as sonorant-initial roots, but in Huishu only roots trigger the process. One of the aspirated/unaspirated pairs in the Tangkhul languages is not immediately transparent: *ʃ*-/c-. The exact historical conditions that

| Gloss | Tangkhul | Kachai | Huishu |
|---|---|---|---|
| 'accept' | *khə̀.mə̀.ja* | *khə́.mə̀.ju* | *kə̄.mə̄.jê* |
| 'join' | *khə̀.ŋə̀.sun* | *khə́.ŋə̀.sún* | *kə̄.nə́.sə̀ŋ* |
| 'laugh' | *khə̀.mə̀.nù* | *khə́.mə̀.nî* | *kə̀.mə̀.nùk* |
| 'ashamed' | *kə̀.khə̀.jɐk* | *kə́.khə̀.jak* | *kə̄.khə̄.jō?* |
| 'sharpen' | *kə̀.khə̀.ra* | *kə́.khə̀.ðù* | *kə.kə.rê* |
| 'brush (teeth)' | *kə̀.kə̀.ʃùt* | *kə́.kə̀.ʃút* | *kə̄.kə̄.séj?* |
| 'ill' | *kə̀.kə̀.tsa* | *khə́.kə̀.ðù* | *kə̄.kə̀.tsê* |

Table 4: Effects of the aspiration rule in Tangkhul languages.

led to this situation are uncertain, but it is interesting to note that a similar allomorphic alternation exists in Jingpho (Matisoff 2003:101). There, the causative prefix appears as *dž-* before roots with aspirated or sibilant root initials and as *š-* elsewhere. While the conditions triggering the allomorphy in Jingpho are different than those operative in Tangkhul languages, it seems that the same sort of dissimilatory process is involved. The fact that the allomorphs are phonetically so similar in the two language families is suggestive, and is odd in light of the fact that the Nungish language Dulong—probably much more closely related to Jingpho than are the Tangkhul languages—does not display such an alternation (Dai 1990:331).

## 3.4 Prefix Replacement

It is quite common, in Tangkhul languages, for lexical prefixes to be replaced. Often, the motivation for this change is not clear. Take the following examples:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (1) 'smell' | **m-nam* | **kə.mə.nɐm* | *khə̀.ŋə̀.nɐ̀m* | *khə́.ŋə̀.nám* | *kə̀.mə̀.nâm* |
| (2) 'pine (tree)' | **taŋ* | **mə.tɐŋ* | *mə.tɐŋ* | *ŋə̄.tà* | — |
| (3) 'stone' | **r-luŋ* | **-luŋ* | *ŋə̀.luŋ* | *kə̀.lùŋ* | *sə.lûŋ* |

For the root meaning 'to smell' (Set 1), the PTB prefix **m-* (> PTk **mə-*) can be reconstructed based upon very strong evidence throughout the Tibeto-Burman family. However, this prefix is not retained in Tangkhul or Kachai, where it has been replaced by the **ŋə-* prefix. In the case of 'pine' (2), there is no evidence for a prefix at the PTB level, but both Standard Tangkhul and Kachai have added vacuous noun prefixes to this root. In some extreme cases, like 'stone' (3), each of the principal daughter languages has a different prefix.

## 3.5 Prefix Preemption

There are also several important cases where prefixes have replaced root onsets, or have been reinterpreted as part of an root-initial cluster. Matisoff (1972) has called this phenomenon "prefix preemption". An interesting case of this is the Kachai word *kə̄.phwí* 'snake':

PTB **s-b-rul* 'snake' > PTk **pə.rul* > Pre-Kachai ***phri* > ***phwi* > Kachai *kə̄.phwí*.[1]

The PTB labial stop prefix was still preserved as a prefix syllable at the PTk level. However, in the Pre-Kachai phase, this prefix seems to have lost its sonorous portion, creating a stop-liquid cluster. In modern Kachai, a new lexical prefix, *kə-*, has been attached to this stem, suggesting that speakers now view it as a simple root (not a root with a prefix).

The PTk onsets **w-* and **hw-* are very commonly preempted by lexical prefixes in Huishu. See Sections 4.2.4 and 4.6.1 (below) for examples.

## 3.6 Noun Prefixes

The prefixes that attach to noun and numeral stems, here collectively referred to as "noun prefixes", are considerably harder to assign a functional or semantic value than the prefixes that occur with verbs. In fact, in the case of numeral prefixes, it is rather doubtful that any meaning at all can be assigned to them, their function being to fill out a phonological template rather than to fill a morphological requirement. Many of the associations between noun and numeral roots and prefixes attested in Tangkhul languages are very ancient and can be reconstructed for Proto-Tibeto-Burman. Perhaps even at that stage, some of the prefixes seem to have served only a vaguely classificatory function, occurring with nouns belonging to certain semantic classes.

### 3.6.1 The general prefix **ʔa-*

Like many other Tibeto-Burman languages in the Northeast India area—indeed many Tibeto-Burman languages generally—Tangkhul languages have a semantically and functionally empty prefix found in many nouns. This prefix, reconstructed here as **ʔa-*, seems to be a reflex of the prefix reconstructed as **a-* in (Benedict 1972:121-123) and as **ʔa-* in (Matisoff 2003:104). Matisoff (2003:104-111) lists a number of functions performed by this prefix in various TB languages, including marking kinship terms, as a third-person possessor, a verb prefix showing 3rd person subject agreement, a verb nominalizer, and aspectual prefix, and as a "bulk-provider" with nouns. It is this last function (with, perhaps, some element of the first two functions) that best describes this prefix in the Tangkhul languages. That is to say, it occurs more-or-less productively with nouns and does not seem to make any semantic or grammatical contribution to the stems containing it. Instead, it fills out either a phonological or morphological template, its exact behavior varying somewhat between languages. In Tangkhul, it occurs sporadically, and its occurrence is hard to predict. In Kachai, however, it occurs in almost every noun containing only one stem and lacking a *si-*, *kə-* or *mə-* prefix. In body parts and kinship terms, it will appear even if one of these prefixes is present. It does not occur in compound nouns, except in a few exceptional cases. However, it cannot be explained simply as a provider of phonological bulk that allows words to meet a disyllabic

[1] As James Matisoff (p.c.) points out, this type of syncope is exactly parallel to a type that occurs (somewhat irregularly) in English. For example, in some (especially British) dialects of English /*pəliːs*/ 'police' > /*pliːs*/. Likewise, /*pərɪmərər*/ 'perimeter' becomes /*prɪməθər*/ in some dialects of English and, in some dialects of Utah and Arizona, there is a derisive form *plig* 'polygamist' derived by truncation, then syncope: /*pəlɪgəməst*/ > /*pəlɪg*/ > /*plɪg*/.

minimality condition since it occurs obligatorily with some nouns having a lexical prefix, such as *ʔā.ŋə̄.lèŋ* 'root' and *ʔā.mə̄.thēn* 'liver'.

It should be noted that my reconstructions assume a somewhat different analysis of certain Tangkhul lexical items than that given in (Matisoff 2003:110). There, it is suggested that words such as *ʔàŋə̀tok* 'brain' and *ʔàŋə̀ci* 'horn' should be analyzed as having a prefix *ʔàŋ-* followed by a prefix *a-*. I suggest that they should be analyzed as *ʔà.ŋə̀.tok* and *ʔà.ŋə̀.ci* instead, based upon the following evidence:

1. It is necessary to recognize both *ʔa-* and *ŋə-* as noun prefixes, independent of their co-occurrence here.

2. When such words occur in compounds, the initial *ʔa-* is not present, but the nasal element remains, thus Standard Tangkhul *kuj-ŋə̀.tok* 'brain' (literally 'head-brain').[2]

The same may be said for sequences of the reflexes of **ʔa-* and **mə-* in the various Tangkhul languages. For example, Tangkhul *ʔamə̀thin* 'liver' should be analyzed as *ʔa.mə̀.thin* and not *ʔam.ə̀.thin* (though it has never been claimed that these should be analyzed in this latter fashion).

The following list of examples of forms that ought to be reconstructed with the prefix **ʔa-* is meant to be representative, but by no means exhaustive:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (4) 'blood' | **s-hywəy* | **ʔa.ʃi* | *ʔà.ʃi* | *ʔā.sɛ̀* | *ʔā.sìk* |
| (5) 'flower' | **wan* | **ʔa.won* | *ʔà.wón* | *ʔā.vɛ̄n* | *ʔá.və̄.vɛ̄ŋ-rɛ̄* |
| (6) 'liver' | **m-sin* | **ʔa.mə̀.thin* | *ʔa.mə.thin* | *ʔā.mə̄.thɛ̄n* | *ʔa.mə̀.thɛ̀n* |
| (7) 'louse' | **s-rik* | **ʔa.rik* | *rìk* | *ʔā.rɛ̄k* | *ʔa.roʔ* |
| (8) 'name' | **r-miŋ* | **ʔa.miŋ* | *ʔà.mìŋ* | *ʔa.mɛ̂ŋ* | *ʔa.mɛ̀ŋ* |
| (9) 'village/land' | **ram* | **ʔa.rɐm* | *rɛ̀m* | *ʔā.rám* | *ʔā.ràm* |

### 3.6.2 *pə-

The labial stop prefix is extremely rare in nouns and numerals and can, in all known cases, be traced back to the PTB **b-* prefix. As a stop-prefix, **pə-* and its reflexes are subject to the aspiration rule.

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (10) 'five' | **b-ŋa* | **pə.ŋa* | *phə.ŋà* | *phə́.ŋɛ́* | *phə̄.nì* |
| (11) 'four' | **b-ləy* | **pə̀.lì* | (*mə̀.tì*) | *pə̀.tsā* | (*mə.kìk*) |
| (12) 'snake' | **s-b-ruːl* | **pə.rul* | *phə́.rù* | *kə̄.phwí* | *ʔa.phə.rɛ̀ŋ* |

[2]Matisoff rightly notes (p.c.) that this situation could have arisen as a result of a reanalysis, where the coda of an outer prefix was analyzed as the onset of an inner prefix, e.g. ***ʔaŋ-ətok* > **ʔa-ŋətok*. The reasoning behind analysis is that the Tangkhul *ʔa-* prefix corresponds functionally to the Lahu *ɔ̀-* prefix, which reflects PTB **ʔaŋ-*.

### 3.6.3 *kə-

The velar stop prefix is one of the more common lexical noun prefixes, occurring in a number of categories of nouns, as well as in numerals. Perhaps the most conspicuous group of nouns with this prefix are body parts:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (13) 'back' | — | *kə.ʃɐn | kə.ʃɐn | kə.ʃin | — |
| (14) 'intestines' | *riːl | *ʔa.kə.ril | ʔa.khə.rì | ʔə̄.khə.ré | ʔa.khə.rêŋ |
| (15) 'tail' | *mey | *kə.mɐj | khə.mɐj | khə.mì | ʔa.khə̄.mù |

However, a variety of other nouns have this prefix, and it does not seem possible to unite these into a single category. In the case of 'bamboo', the prefix is a reflex of PTB *g-:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (16) 'bamboo' | *g-p$^{w}$a | *kə.hwa | **kə̀.ha**-thiŋ | **kə̀.fù**-thɐŋ | **khwē**-thēŋ |
| (17) 'clothes' | — | *kə.con | kə̀.con | kə̀.tɕìn | — |
| (18) 'mountain' | — | *kə.phuŋ | kə̀.phùŋ | kə̀.phúŋ | ʔá.kə́.phùŋ |
| (19) 'sky/heaven/rain' | — | *kə.tsiŋ | kə̀.tsiŋ | kə̀.ðèŋ | ʔā.kə̄.tsèŋ |
| (20) 'squirrel' | *s-rey | *kə.rɐj | khə̀.rɐ́j | khə̄.lì | ʔā.ku.lù |

This prefix also occurs, as a reflex of PTB *g-, in the numerals 'two' and 'three':

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (21) 'three' | *g-sum | *kə.thum | kə.thùm | kə̄.thûm | kə.thèm |
| (22) 'two' | *g-nis | *khə.ni | khə́.nî | khə̄.nê | khə.nîk |

### 3.6.4 *ci-

The three numerals 'seven', 'eight', and 'nine' all have the *ci- prefix in Tangkhul (with the *ʃi- allomorph occurring before sonorant-initial roots). The word for 'pus' has the same prefix. In all of these cases except for that of 'eight', the prefix can be shown to reflect PTB *s-.

It is interesting to note that the Huishu reflexes of this prefix seem to be different in numerals than in nouns. In numerals, the aspirated and unaspirated allomorphs are *tə-* and *thi-* respectively, but in nouns this prefix seems to retain its fricative nature and surfaces as *sə-* before sonorants.

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (23) 'seven' | *s-nis | *ci.ni | ʃí.ní | ʃí.nê | thi.nik |
| (24) 'eight' | *b-r-gyat | *ci.ʃat | cì.ʃàt | tɕī.ʃit | tə.tsèjʔ |
| (25) 'nine' | *s-gwa, *d-gwa | *cə.ko | ci.ko | tɕī.kē | tə̀.kù |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (26) ‘pus’ | *s-naːy | *ci.naj | ʃi.naj | — | ʔa.sə́.nêj |

### 3.6.5 *tə-

The PTB prefix *d- is reflected in the word for ‘six’ by *tə-:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (27) ‘six’ | *d-k-rok | *tə.ruk | thə.rùk | (ʃə́.rúk) | (sə.ruʔ) |

### 3.6.6 *mə-

The commonest of the noun prefixes is probably *mə-, which is often a reflex of the PTB *m- prefix. Like *kə-, it is very commonly found in body parts:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (28) ‘chin’ | *m-ka | *mə.kha | mə.khà | mə̄.khú | ʔā.mā.khè |
| (29) ‘finger/toe’ | — | *-mə.reŋ | -mə̀.reŋ | — | -mə̀.rē |
| (30) ‘heart’ | *m-luŋ | *mə.luŋ | mə̀.lùŋ | mə̀.lúŋ | ʔá.mə̀.lúŋ |
| (31) ‘liver’ | *m-sin | *ʔa.mə̀.thin | ʔa.mə.thin | ʔā.mə̄.thēn | ʔa.mə̀.thèn |
| (32) ‘lung/chest’ | — | *mə.thik-rɐ | mə.thik-rɐ | mə̄.thɐ̄k-rɐ́ | — |
| (33) ‘palm (of hand)’ | | *-mə.ja | paŋ-mə.ja | ʔā.pón-mə̀.jú | — |
| (34) ‘tongue’ | *m-ley | *mə.lej | mə.lèj | ʔā.mə.lî | ʔa.mə.lû |

However, it appears in many other nouns as well, and also in the numeral ‘twenty’. Between these cases, the semantic association does not seem so clear:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (35) ‘bow/arrow’ | *m-la | *mə.la | mə̀.là | mə̀.lú | ʔá.mə̀.lè |
| (36) ‘leech’ | *k-r-pʷat | *mə.hwut | mə̀.hùt | — | — |
| (37) ‘salt’ | *tsyi | *mə.ci | mə̀.cî | mə.tsɐ̄ | ʔā.mə̄.tsīk |
| (38) ‘twenty’ | *m-kul | *mə.kul | mə̀.kù | mə̄.kwî | mə.kɐ̀n |

### 3.6.7 *ŋə-

It is difficult to find any pattern in the occurrence of *ŋə- in nouns. Its PTB origins are also somewhat mysterious. In Huishu, this prefix becomes *nə-*:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (39) 'earth' | *m-ley | *ŋə.lej | ŋə̀.lēj | ŋə̄.lì | ʔā.nə̄.lû |
| (40) 'horn' | *krəw | *ʔa.ŋə.ci | ʔà.ŋə̀.ci | ʔā.ŋə̀.tsɐ̄ | ʔa.nə.tsìk |
| (41) 'marrow' | *kliŋ | *ʔa.ŋə.tliŋ | — | ʔa.ŋə.tɐ̀ŋ | ʔā.nə̄.lɐ̀ŋ |
| (42) 'root' | — | *ʔa.ŋə.juŋ | ʔà.ŋə.juŋ | ʔā.ŋə̄.lɐ̀ŋ | ʔá.nə.jùŋ |

### 3.6.8 *si-

Of the Tangkhul noun prefixes, **si-* is the only one whose diachronic origins are still transparent. This prefix occurs primarily in terms for animals or for items which are metaphorically like animals (e.g. 'pestle') and is derived from PTB **sya-* 'animal/body/flesh/meat' (Matisoff 2003:102). The normal PTk reflex of this root is **sa.* Note that this prefix is distinct from the reflex of PTB **s-* which is PTk **ci-* (with the "aspirated" allomorph **ʃi-*). In some Tangkhul languages, such as Phadāng, this prefix remains **sa-*, e.g. *sa.lui* 'buffalo', *sa.muk* 'buffalo', suggesting that the original vocalism was preserved past the PTk stage and that **sa-* might actually be a more appropriate reconstruction for this prefix.[3]

This prefix presents a number of interesting problems. It appears that this prefix-root construction must have started out as a compounding construction. Semantically, the words containing this prefix usually refer to a kind of animal, not a more general type of entity that is restricted or qualified by its animality. It would be reasonable to treat the leftmost element (< **sa-*) as the head of the compounds and the variable part as the modifier. This is problematic since compounds in Tangkhul languages—perhaps, in TB languages generally—tend to be right-headed[4]. Perhaps this construction was reinterpreted as a prefixing construction precisely because it was structurally contrary to the more common compounding construction in the language.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (43) 'cattle' | — | *si.muk | si.muk | sí.múk | sə̄.muʔ |
| (44) 'horse' | *kor | *si.kol | sì.kùj | sī.kwē | sɐŋ-kɐ̀ŋ |
| (45) 'otter' | *s-ram | *si.rɐm | si.rɐm | — | ʃə.rām |
| (46) 'pestle' | — | *si.kow | si.kùj | sū.kwé | ʔā.rúŋ-kòw |
| (47) 'water buffalo' | *lwa:y | *si.luj | sì.lùj | sî-lî | ʔā.sə.lù |

**(44)** This is a loanword from Indo-Aryan. Cf. Sanskrit *ghoṭa-* 'nag', Hindi *ghoṛ* 'horse', etc. (Mayrhofer 1990:517). Similar forms are found in many Dravidian languages: Tamil *kutirai* 'horse', Malayalam *kutira* 'horse, cavalry', etc. (see Burrow and Emeneau 1984:#1711).

**(45)** Matisoff notes (p.c.) that the **s-* in this PTB form was probably part of the root, rather than a prefix. However, I contend that by the PTk stage, it had been reanalyzed as a prefix, probably by analogy with the other **s-*prefixed animal names.

[3]Matisoff (p.c.) notes that the cognate prefix *sa-* is completely productive in Mizo (=Lushai.)

[4]However, as James Matisoff (p.c.) has pointed out to me, some Tibeto-Burman languages (including Lahu) have both left-headed and right-headed compounds. Thus, the headedness of these constructions may not be as problematic as it first appears.

## 3.7 Verb Prefixes

It may be possible to divide Tangkhul verb prefixes, and PTB verb prefixes in general, into two broad categories—valence increasing prefixes diachronically derived from verbs and valence decreasing prefixes derived from nouns and, especially, pronouns. This speculation is based upon the assumption that prefixing constructions originated as compound constructions and reflects the generalization that TB prefixes generally seemed to affect the argument structure (and associated semantics) of verb stems rather than other grammatical features. The rationale is as follows: it is frequent, in languages not yet in possession of dedicated morphological means of expanding valence, to do so by serializing or compounding a verb to add the right kind of extra argument position (Payne 1997:173, 181). Such constructions may become reinterpreted as affixation to mark transitivization, causation, and other such categories. Likewise, a nominal or prononinal element incorporated into the verb may fill an argument position, and such a construction may easily be reinterpreted as a marker one of many possible valence-reducing functions. The valence increasing prefixes of PTk were **ci-* (< PTB **s-*), one of the **mə-* prefixes (possibly < PTk **mi* 'to give'), and possibly **pə-*. The valence decreasing prefixes are the nominalizing prefix **kə-* (possibly from a pronominal form; see Wolfenden 1927:73, Benedict 1972:113), the stative prefix **mə-* (possibly < PTB **mi* 'person', but see Benedict 1972:107), and the reciprocal/stative prefix **ŋə-* (possibly < PTB **ŋa* '1st person pronoun'). The function of **tə-* and lexical **kə-*, under this scheme and perhaps any other, must remain unspecified.

### 3.7.1 The nominalizing prefix *kə-

In addition to the lexical prefixes which were associated with most PTk verb roots, all verbs (indeed, probably all verbal stems) in the language could take the nominalizing prefix **kə-*. All of the daughter languages of PTk have this prefix, and in all of them (insofar as the data allow us determine) it is completely productive. Related prefixes occur in other Tibeto-Burman languages, a fact that was first noted by Wolfenden (1927) and that is further discussed by Matisoff (2003:136-138). However, it does not seem that this prefix has achieved the same level of productivity in any language outside the Tangkhul group.

The citation form of the verb, at least in the principal languages discussed here, is the nominalized form. The verbs reconstructed in this paper thus typically include **kə-* as part of their reconstruction. In truth, then, the reconstructions given here only feature one member of the verbal paradigm, but since this paradigm is almost completely regular, little or no information is lost by doing things in this fashion.

### 3.7.2 *pə-

The prefix **pə-* can be reconstructed for a very small number of verbs:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (48) ‘eat (rice)’ | *dzya | *kə.phə.tsa | phɐ-kə̀.tsà | kə́.phə̄.ðū | kə̄.phə̄.tsè |
| (49) ‘think (v.t.)’ | *s-niŋ | *kə.pə.niŋ | kə̀.phə̀.niŋ | kə́.phə̀.nɐŋ | — |

It is interesting to note that both verbs for which this prefix can be reconstructed are morphologically related to nouns:

| | | | | | |
|---|---|---|---|---|---|
| PTk *kə.phə.tsa | ‘eat (rice)’ | PTk *ʔa.tsat | ‘rice’ | < PTB *dzya:t | ‘rice’ |
| PTk *kə.pə.niŋ | ‘think’ | PTk *ʔa.niŋ | ‘mind’ | < PTB *niŋ | ‘heart/mind/brain’ |

It could be argued that this verb prefix served to create denominal verbs, although the evidence presented thus far does not provide strong support for this claim. For example, PTB *dzya:t* ‘rice’ seems to be derived from PTB *dzya* ‘eat’ + *-t* ‘NOMINALIZER’ (Matisoff 2003:440,454). However, there is some additional suggestive evidence from Kachai:

| | | | | | |
|---|---|---|---|---|---|
| kə́.phə̀.no | ‘be born’ | ʔā.no | ‘child’ | < PTk *now | ‘child’ |
| kə́.phə̀.mɐ̄n | ‘dream (a dream)’ | ʔā.mà | ‘dream’ | < PTB *maŋ | ‘dream’ |
| kə́.phə̀.nɐ̄ŋ | ‘think (a though)’ | ʔā.nɐ̄ŋ | ‘mind’ | < PTB *niŋ | ‘heart/mind/brain’ |
| kə́.phə̀.ðū | ‘eat (rice)’ | ʔā.ðō:t | ‘rice (cooked)’ | < PTB *dzya:t | ‘rice’ |

In all of the cases where a Kachai verb has the prefix *phə-*[5] the verb seems to be related to a noun existing in the lexicon. This evidence suggests that either some historical denominalizing function of this prefix has been preserved in Kachai and lost in other Tangkhul languages, or that the speakers of Kachai have reanalyzed this prefix as a verbalizer and have started to employ it somewhat productively. The second explanation seems more believable at this point, especially if ‘think’ and ‘eat’ were the only common verbs in which this prefix occurred. Since both of these verbs are clearly related to nouns, it would be perfectly reasonable for speakers to infer that new verbs could be created from existing nouns by adding *pə-*.

### 3.7.3 *ci-

A number of different authors note that the Tangkhul prefix *ci-/ʃi-* seems to be used to form transitive and causative stems from stative or intransitive verb roots (Bhat 1969:x, passim, Matisoff 1972, Arokianathan 1987:65). The productivity of the process seems to vary among the dialects of Tangkhul (referring here to those dialects mutually intelligible with Ukhrul dialect). In the Ukhrul speech variety reflected by Bhat’s (1969) lexicon, this process is highly productive. Among the speakers of Standard Tangkhul whom I consulted, however, this process was not productive, although there were a few verb stem pairs that clearly illustrated the alternation, such as *kə̀.thej* ‘to see; to know’ versus *kə̀.cì.thej* ‘to show; to let be seen’. In the other Tangkhul languages studied, there is little or no evidence for the productivity of this process, suggesting that it may not have been productive at the PTk period. As such, there are very few verb roots that can currently be reconstructed with this prefix:

[5]All of the attestations of this Kachai verb prefix are of the aspirated allomorph. At this point it is not known whether this is accidental or significant.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (50) 'expect' | — | **kə.ci.hɐn* | *kə̀.cì.hɐ́n* | *kə́.tɕì.hón* | *kə̄.tsé.hèj* |
| (51) 'squeeze/ extinguish' | **s-miːt* | **kə.ci.met* | *kə̀.ʃì.met* | *kə́.ʃi.mɐ̄t* | *kə́.sə̀.mèjʔ* |

However, the morphological basis for this valence alternation is very old. It seems quite clear, even based upon the limited information available, that the prefix here reconstructed as **ci-* (with the predictable "aspirated" allomorph **ʃi-*) is a reflex of the PTB **s-* prefix (Wolfenden 1927:46-53, 85-86, 200-201, Benedict 1972:105-106, and Matisoff 2003:100-101). Given the relatively small number of solid PTk etymological items with this prefix, the case for PTk **ci-* coming from PTB **s-* is quite strong:

1. The PTB prefix **s-* occurring in nouns and numerals can also be shown to become PTk **ci-*.

2. In the case of 'squeeze/extinguish', the **s-*prefix must be reconstructed as part of the PTB lexical item. At the PTk level, the **ci-* prefix occurs.

3. The semantics of the PTB **s-* prefix seem to be reflected in the Ukhrul *ci-*/ʃi- prefix in much the same way as they are reflected in other TB languages.

Apparently, then, this prefix was productive at the PTB level, but had become non-productive by the PTk period. However, it was still pervasive enough in the lexicon that some Tangkhul speakers were led to revive it as a productive part of the morphological machinery of their language. The revival of productivity, however, seems not to have been evenly distributed over the Tangkhul speaking area, with some speakers in Ukhrul treating the prefix as completely productive and other speakers of the Standard Tangkhul lingua franca relatively resistant to newly derived forms containing this prefix (perhaps influenced by their own native languages, in which the prefix had not regained productivity).

### 3.7.4 **kə-*

A respectable number of PTk verb stems seem to have included the prefix **kə-*. This prefix must be distinguished from the nominalizing prefix **kə-*, with which it freely co-occurs. In some cases (e.g. 'ashamed'), this prefix can be shown to descend from a PTB antecedent **g-*. Like PTB **g-*, PTk **kə-* is rather hard to characterize functionally or semantically, the various verb stems in which it appears having varied grammatical and semantic properties:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (52) 'ashamed' | **g-yak* | **kə.kə.jɐk* | *kə̀.khə̀.jɐk* | *kə́.khə̀.jak* | *kə̄.khə̄.jōʔ* |
| (53) 'brush (teeth)' | — | **kə.kə.ʃut* | *kə̀.kə̀.ʃùt* | *kə́.kə̀.ʃút* | *kə̄.kə̄.séjʔ* |
| (54) 'cut (vegetables)' | — | **kə.kə.tɐt* | *khə̀.kə̀.tɐ̀t* | *kə́.kə̀.tɐ̄t* | *kə.kə.kéjʔ* |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (55) 'ill' | *tsa | *kə.kə.tsa | kə̀.kə̀.tsa | khə́.kə̀.ðù | kə̄.kə̀.tsə̂ |
| (56) 'sharpen' | — | *kə.kə.ra | kə̀.khə̀.ra | kə́.khə̀.ðù | kə.khə.rə̂ |
| (57) 'tie' | — | *kə.mə.su | khə̀.mə̀.sú | khə́.mə̀.sī | kə̄.mə́.sūk |

**(53)** This form resembles PTB **sut* ∼ **sit* 'rub', but this PTB form should yield PTk **kə.thut* ∼ **kə.thit*, rather than **kə.ʃut*.

### 3.7.5 *mə-

The PTk **mə-* prefix is quite common, but the intricacy of its history seems to be proportional to its frequency. In fact, it probably derives from more than one antecedent. Some instances of PTk **mə-* seem to be reflexes of PTB **m-*, which was itself a complex entity. Many of the verb stems containing **m-* are stative, a function that is well documented at the PTB level (Matisoff 2003:117-118):

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (58) 'correct' | — | *kə.mə.ʃuŋ | khə̀.mə̀.ʃùŋ | khə́.mə̀.ʃúŋ | kə̄.mə̄.sūŋ |
| (59) 'crooked' | — | *kə.mə.khej | khə̀.mə̀.khej | khə́.mə̀.khì | kha?-<br>kə̄.khú |
| (60) 'fine (not coarse)' | *nyak | *kə.mə.nɐk | khə̀.mə̀.nɐ̀k | khə́.ŋə̀.nák | — |
| (61) 'green' | — | *kə.mə.tek | khə̀.mə̀.tek | khə́.mə̀.ték | — |

This prefix is also common in verb stems that refer to "middle voice" notions, or—more specifically—to intransitive, non-volitional events. This same semantic territory is claimed for PTB **m-*, from which some instances of PTk **mə-* in verb stems of this category are clearly descended:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (62) 'accept' | — | *kə.mə.ja | khə̀.mə̀.ja | khə́.mə̀.ju | kə̄.mə̄.jə̂ |
| (63) 'cough' | — | *kə.mə.kha | khə̀.mə̀.khá | khə́.mə̀.khú | kə̄.mə́.khè |
| (64) 'forget' | — | *kə.mə.laj | khə̀.mə̀.laj | khə́.mə̀.lwe | kə̀.mə́.lè |
| (65) 'laugh' | *m-nwəy | *kə.mə.nɐj | khə̀.mə̀.nù | khə́.mə̀.nî | kə̀.mə̀.nùk |
| (66) 'smell' | *m-nam | *kə.mə.nɐm | khə̀.ŋə̀.nɐ̀m | khə́.ŋə̀.nám | kə̀.mə̀.nâm |

For both these classes of verbs, Shafer's (1938) speculation that the PTB **m-* prefix is related to the PTB root **mi(y)* 'homo sapiens' is attractive, especially in light of languages (like Tangkhul) that employ reflexes of **mi* 'person' as impersonal pronouns. If such a phenomenon had already emerged at the PTB stage, it is entirely possible that this pronominal element could have become cliticized to verbs and reinterpreted as a valence-reducing prefix of the type observed here. On the other hand, it is quite clear that (Benedict 1972:107) rejected **mi(y)* as a possible source for PTB **m-*. Unfortunately, he is not explicit about his reasons for rejecting Shafer's suggestion and so it is difficult to know what evidence he had in mind when he made this determination.

In other cases, verb stems containing **mə-* may be both volitional and transitive in their semantics. In at least one of these cases ('lick'), the **mə-* prefix is inherited from PTB:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (67) 'bite' | — | **kə.mə.kej* | *khə̀.mə̀.kej* | *khə́.mə̀.kī* | — |
| (68) 'blow' | — | **kə.mə.ri* | *khə̀.mə̀.ri* | — | *kə̄.mə̄.līk* |
| (69) 'lick' | **m-lyak* | **kə.mə.lek* | *khə̀.mə̀.lek* | *khə́.mə̀.lēk* | *kə̀.mə̀.lé?* |
| (70) 'tie' | — | **kə.mə.su* | *khə̀.mə̀.sú* | *khə́.mə̀.sī* | *kə̄.mə́.sūk* |

However, it would be an oversimplification to say that all instances of the **mə-* prefix are reflexes of the PTB **m-* prefix. It may be noted, for instance, that there are certain stative/causative pairs in Tangkhul where the causative seems to be marked by *mə-*, e.g. *kə̀.thaw* 'to be fat', *khə̀.mə̀.thaw* 'to fatten' and *kə̀.theŋ* 'to be dry', *kə̀.mə̀.then* 'to make dry'. To these may be added denominal verbs such as *khə̀.mə̀.tuj* 'to speak' < *tuj* 'word/speech' and *khə̀.mə̀.thèj* 'to bear fruit' < *thèj* 'fruit'. In all of these cases, it is plausible to suggest that the *mə-* prefix is derived from the PTk verb root **mi* 'give' (possibly an irregular reflex of PTB **bəy* 'give'). It should be noted, further, that Hartmann (2001) identified a similar valence increasing function for a bilabial nasal prefix in Daai Chin.

A final observation should be made about the **mə-* prefix: a disproportionate number of verbs having to do with oral activities contain this prefix in their stem. In Standard Tangkhul, this set includes the following members:

| Tangkhul | Gloss |
|---|---|
| *khə̀.mə̀.ja* | 'accept/agree' |
| *khə̀.mə̀.kej* | 'bite' |
| *khə̀.mə̀.ri* | 'blow' |
| *khə̀.mə̀.tɐm* | 'carry in the mouth' |
| *khə̀.mə̀.hak* | 'choke' |
| *khə̀.mə̀.khá* | 'cough' |
| *khə̀.mə̀.ju* | 'kiss' |
| *khə̀.mə̀.rop* | 'lap; graze' |
| *khə̀.mə̀.nù* | 'laugh' |
| *khə̀.mə̀.lek* | 'lick' |
| *khə̀.mə̀.ra* | 'peck' |
| *khə̀.mə̀.tuj* | 'speak' |
| *khə̀.mə̀.ʃo* | 'spit' |
| *khə̀.mə̀.cor* | 'spit' |
| *khə̀.mə̀.juj* | 'swallow' |
| *khə̀.mə̀.tsɐp* | 'taste' |

In some of these cases, the *mə-* prefix is clearly etymological; in others, the verb stem fits into a category already delineated. However, it is not beyond the realm of plausibility to suppose that certain instances of the *mə-* prefix are actually reflexes of a reduced form of PTk **mor* 'mouth' < PTB **mu:r* 'mouth' in what were originally N-V compounds. If this is the case, then there are actually three possible sources for *mə-* prefixes in Tangkhul languages:

1. The PTB **m-* prefix meaning 'stative/intransitive/middle voice'.

2. PTk **mi* ‘to give’.

3. PTB **muːr* > PTk **mor* ‘mouth’.

The problem, which cannot be resolved in the current study, is to determine whether the last two of these sources are viable and, if so, establish some criteria for distinguishing stative/instransitive **mə-*, causative/resultative **mə-* and oral **mə-*.

### 3.7.6 **ŋə-*

PTk had yet another important verb prefix: **ŋə-*, which is reflected as *ŋə-* in Standard Tangkhul and Kachai but as *nə-* in Huishu (concomitant with the regular sound change PTk **ŋ-* > Huishu *n-*). It does not seem possible to give this prefix a general PTB etymology, but it seems suspiciously similar in both its phonology and its function to a ‘RECIPROCAL/STATIVE’ velar nasal prefix described by Hartmann (2001) for Daai Chin.

Bhat (1969:x) notes that the prefix *ŋə-* is frequently found in Tangkhul verb stems referring to stative or inherently reflexive events. Both functional types are well represented among the stems that can be reconstructed with this prefix at the PTk level. The intrinsically reciprocal stems are perhaps most common:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (71) ‘add together’ | — | **kə.ŋə.rum* | *khə̀.ŋə̀.rùm* | *khə́.ŋə̀.rúm* | — |
| (72) ‘exchange’ | — | **kə.ŋə.thɐj* | *khə̀.ŋə̀.thu* | *khə́.ŋə̀.thî* | — |
| (73) ‘help’ | — | **kə.ŋə.con* | *khə̀.ŋə̀.con* | *khə́.ŋə̀.tɕon* | — |
| (74) ‘join’ | — | **kə.ŋə.sun* | *khə̀.ŋə̀.sun* | *khə́.ŋə̀.sún* | *kə̄.nə́.sə̀ŋ* |
| (75) ‘near’ | **s-naːy* | **kə.ŋə.naj* | *khə̀.ŋə̀.náj* | *khə́.ŋə̀.nwè* | *kə̄.nə̄.nêj* |

To these may be added stem pairs in individual languages such as Tangkhul *kə̀.thɐ* ‘pay; remit’ and *kə̀.ŋə̀.thɐ* ‘exchange’ where the reflex of **ŋə-* is clearly contributing an element of reciprocity to the meaning of the verb stem. To these may be added the non-reciprocal, stative verbs:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (76) ‘lightweight’ | **yaːŋ* | **kə.ŋə.vɛŋ* | *khə̀.ŋə̀.vèŋ* | *khə́.ŋə̀.vēŋ* | *kə̄.nə̄.vî* |
| (77) ‘soft (to touch)’ | — | **kə.ŋə.pet* | *khə̀.ŋə̀.pet* | *khə́.ŋə̀.pōt* | *kə̄.nə̄.véjʔ* |

However, after these verbs are removed from the mix, there are still a considerable number of verb stems that do not seem to fit into either of the two categories identified so far. Some of these have intransitive non-volitional semantics:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (78) 'fear' | **kri* | **kə.ŋə.ci* | *khà.ŋà.cì* | *khá.ŋà.tsɐ̄* | *ká.tsìk* |
| (79) 'hear' | **g/r-na* | **kə.ŋə.na* | *khà.ŋà.nà* | *khá.ŋà.nɐ̄* | — |
| (80) 'wither/fade' | **hwaːy* | **kə.ŋə.huj* | *khà.ŋà.hùj* | *khá.ŋà.hî* | *ká.nə̄.hû* |

Others seem to be fully transitive:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (81) 'carry (on shoulders)' | — | **kə.ŋə.wu* | *khà.ŋà.vù* | *kə̄.hɐ̄* | *kə̄.nà.vúk* |
| (82) 'hide' | — | **kà.ŋà.thum* | *khà.ŋà.thúm* | *khá.ŋà.thùm* | *kə̄.nə̄.thêŋ* |
| (83) 'twist/knead' | **m-naːy* | **kə.ŋə.ŋaj* | *khà.ŋà.naj* | *khà.nwē* | *khə.nêj* |

However, an examination of verb stems having this prefix in Tangkhul languages shows that the majority of them have either reciprocal, stative, or nonvolitional intransitive readings. This prefix is likely to be cognate to the reciprocal/stative prefix identified by Hartmann (2001) in the Southern Chin language called Daai Chin. If so, this would be yet another morphological innovation shared by the Kuki-Chin and Tangkhul languages. This prefix could have come ultimately from some anaphoric clitic, perhaps of pronominal origin, and the old PTB first-person pronoun **ŋa* (which has been replaced in its original role in both the Tangkhul and the Kuki-Chin languages) seems to be a plausible candidate. The case for **ŋa* would be strengthened if reflexes of it were found to appear as reflexive or reciprocal (rather than normal first person) pronouns in other Tibeto-Burman languages.

# 4 Onsets

The development of the onsets of PTk from PTB is quite complicated, and there are certain specific developments, such as the appearance of aspiration, for which no acceptable conditioning environment has yet been found. The development of onsets in the daughter languages of PTk, however, is quite straightforward and only some of the glides and fricatives present any really significant challenges in reconstruction.

## 4.1 Plosives

There are a couple of interesting developments of PTk plosives, both in Huishu and both regarding coronals[6], but otherwise the correspondences within Tangkhul behave predictably—indeed, they are almost immutable. There is, however, one very problematic aspect of the development of PTk plosives from their PTB antecedents: PTB voiceless plosives are reflected as both aspirated and unaspirated plosives at the PTB level, and the conditioning environment for this contrast is not immediately obvious.

[6]PTk **th-* > Huishu *t-* before high vowels; PTk **t-* > Huishu *k-*.

### 4.1.1 Two hypotheses regarding aspiration

At this point, the most likely conditioning environment for this split seems to be some aspect of syllable structure. It may be observed, for example, that—in cases where the PTB form is known—if the rhyme is either a monophthong or a diphthong (with no coda), the PTk reflex will be aspirated; if the rhyme is closed (has a coda) the PTk reflex will be unaspirated:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (84) 'bitter' | **ka* | **kə.kha* | *kə̀.khà* | *kə̄.khú* | *kə̄.khê* |
| (85) 'chin' | **m-ka* | **mə.kha* | *mə̀.khà* | *mə̄.khú* | *ʔā.mā.khè* |
| (86) 'foot' | **pɐy* | **ʔa.phej* | *ʔa.phéj* | *ʔā.phī* | *ʔā.phù* |
| (87) 'smoke' | **kəw-t* | **mej-khut* | *mej-khùt* | *mə̀.khút* | *ʔā.mú-khùʔ* |
| (88) 'horse' | **kor* | **si.kol* | *sì.kùj* | *sī.kwē* | *sɐŋ-kɐ̀ŋ* |
| (89) 'pine (tree)' | **taŋ* | **mə.tɐŋ* | *mə.tɐŋ* | *ŋə̄.tà* | — |
| (90) 'twenty' | **m-kul* | **mə.kul* | *mə̀.kù* | *mə̄.kwî* | *mə.kɐ̀n* |

However, given the very small number of data that are at our disposal in discussing this problem, it is entirely possible that the observed pattern is purely accidental, or—even more likely—does not present a representative reflection of the conditioning environment for aspiration. However, this hypothesis should nevertheless be entertained. I will refer to it as the OPEN SYLLABLE TRIGGER hypothesis.

Another hypothesis presents itself based upon these same data. In one interpretation of the PTB reconstruction, **-ey* may be seen as the long counterpart of **-e* and **-a* may be seen as the long counterpart of **-ə* (Matisoff 2003:160). Given such a system, we might assume that PTB voiceless plosives became aspirated[7] in PTk when they preceded a long vowel (by which we mean, a vowel or diphthong occupying two moras). This hypothesis, I will call the LONG VOWEL TRIGGER hypothesis.

Both of these hypotheses are easily testable and falsifiable, provided that more reflexes of established PTB roots with plosive onsets come to light in Tangkhul languages. If it can be shown that roots containing long vowels in closed syllables may be reflected with aspirated onsets, the open syllable trigger hypothesis should be considered falsified. If it turns out, on the other hand, that such roots are never reflected with aspirated plosive onsets, the long vowel trigger hypothesis should be rejected. Unfortunately, there are not currently enough data to unravel the problem. The following PTk roots contain long vowels and reflect PTB voiceless plosives:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (91) 'bark (of tree)' | **koːr* | **thiŋ-kor* | *thiŋ-kor* | *thɐ̀ŋ-kɐ̄* | *ʔā.théŋ-kù* |
| (92) 'bee' | **kwaːy* | **khuj* | *khùj* | *ʔā.khî* | — |
| (93) 'grasshopper' | **kaːw* | **khaw* | *khaw* | — | *ʔā.kúŋ-kòw* |

[7]Of course, the formulation of this hypothesis is problematized by the fact that we do not know whether PTB voiceless plosives were aspirated or not. This formulation assumes that they were not, and that the aspiration of this series that can be observed in many TB languages is a secondary development.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (94) 'knee' | **m-kuːk* | **ʔa.khuk* | *ʔà.khùk* | *phì-khūk* | — |

The PTB form in Set (91) 'bark' has a closed syllable root with a long nucleus and it does not have an aspirated onset at the PTk level. This argues against the long vowel-trigger hypothesis. However, the PTB root for (87) 'smoke' (above) should probably be treated, phonologically, as **kuːt*, since the rhyme **-əw* is functionally equivalent to **-uː* and the suffixal **-t* that occurs in this root would have closed this syllable. Under the open syllable trigger hypothesis, this should be reflected as an unaspirated onset, unless the suffixation of **-t* did not occur until after the split between aspirated and unaspirated voiceless plosives. The fact that this suffix is also attested in this root in Jingpho, however, weakens this possibility (Matisoff 2003:451, 454). Furthermore, Set (94) 'knee' shows an etymon that clearly has a long vowel in a closed root syllable, and the reflex is aspirated.

Another reason to argue against the open syllable-trigger hypothesis is that there are numerous items that do not belong to a known PTB root but which must be reconstructed at the PTk level with both an aspirated onset initial and a closed syllable (see below, especially Sections 4.1.3 and 4.1.5). While it is easy to account for these data under the long vowel-trigger hypothesis, some special mechanism (like borrowing) must be invoked under closed syllable-trigger hypothesis.

To complicate matters further, there are data which militate against either hypothesis. An interesting example is 'hole/anus':

| | PTB | | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|---|
| (95) 'hole/anus' | **kor*<br>**kwar* | ∼ | **-khur* | *khə̀.ráŋ-*<br>*khùr* | *pù-ʃít-khùr* | — |

While this root has been reconstructed with both a closed syllable and a short vowel at the PTB level, at the PTk level it must be reconstructed with an aspirated onset. One possible rationalization would be to question the reconstruction of vowel length for this PTB root, but it should be noted that the Lushai cognate of this form is *khur* ∼ *khwar* (Matisoff 2003:401) and this supports the short-vowel reconstruction. There are some attested cases of vowel length variation at the PTB level, however, and this may be another. This datum too is easier to reconcile with the long vowel-trigger hypothesis than the open syllable-trigger hypothesis.

In summary, it is too early to determine the exact conditioning environment that divided PTB voiceless plosives into aspirated and unaspirated series. However, the long-vowel trigger hypothesis seems more attractive at this time. Further cross-linguistic phonetic research into the influence of vowel length upon onset duration and voice-onset may provide important clues about how such a sound change could arise.

### 4.1.2 *p-

| PTB | > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|---|
| **b-*, **p-* | > **p-* | > *p-* | *p-* | *p-* |

PTk unaspirated **p-* comes from both PTB **b-* and **p-*. The conditioning environment that distinguishes the roots having this PTk onset and **ph-* is not obvious and will only be located with

further study. See Section 4.1.1 (above) for a more thorough discussion. PTk **p-* becomes /p-/ in all known daughter languages.

| | | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|---|
| (96) | 'brother (younger)' | — | **ʔa.pa* | *ʔa.pa* | *ʔā.pu* | — |
| (97) | 'defecate' | **baːl* | **kə.pal* | *kə̀.páj* | *kə̀.pwè* | — |
| (98) | 'easy/cheap' | — | **kə.paj* | *kə̀.paj* | *kə̄.pwè* | *kə̄.pēj-re* |
| (99) | 'fly' | **pur* | **kə.paj* | *kə̀.pàj* | *kə̄.pwé* | *kə́.pej* |
| (100) | 'full/complete' | **bway* | **kə.puj* | *kə̀.púj* | *kə̄.pî* | *kə̄.pù* |
| (101) | 'hand/arm' | **wan* | **ʔa.pan* | *ʔà.pàŋ* | *ʔā.pón* | — |
| (102) | 'sit' | — | **kə.pɐm* | *kə̀.pɐ́m* | *kə̄.pàm* | — |
| (103) | 'soft (to touch)' | — | **kə.ŋə.pet* | *khə̀.ŋə̀.pet* | *khə́.ŋə̀.pōt* | *kə̄.nə̄.véjʔ* |

### 4.1.3 **ph-*

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **p-* > **ph-* > *ph-* | *ph-* | *ph-* |

Those instances of PTB **p-* that do not become PTk **p-* are reflected instead as PTk **ph-* (see Section 4.1.1, above). PTk **ph-* becomes /ph-/ in all known daughter languages.

| | | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|---|
| (104) | 'foot' | **pey* | **ʔa.phej* | *ʔa.phéj* | *ʔā.phī* | *ʔā.phù* |
| (105) | 'lung' | — | **ʔa.phar* | *ʔà.phar* | *ʔā.phòr* | — |
| (106) | 'mountain' | — | **kə.phuŋ* | *kə̀.phùŋ* | *kə̀.phúŋ* | *ʔá.kə́.phùŋ* |
| (107) | 'seek/search' | **pa* | **kə.pha* | *kə̀.pha* | *kə̄.phù* | *kə.phē* |
| (108) | 'wash (hands)' | — | **kə.phew* | *kə̀.phew* | *kə̄.phì* | — |

### 4.1.4 **t-*

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **t-*, **d-* > **t-* > *t-* | *t-* | *k-* |

PTB **t-* and **d-* become PTK **t-*. Within the bounds of the data now available, it appears that this change is perfectly consistent. This is, of course, contrary to expectation since it is expected that some etyma with PTB **t-* should be reflected by forms with PTk **th-* (parallel to the other voiceless plosives), as discussed in Section 4.1.1. PTk **t-* remains /t-/ in Standard Tangkhul and Kachai but becomes /k-/ in Huishu. It is worthy of note that PTk **k-* and **t-* merge to become Huishu /k-/ but the contrast between PTk **kh-* and **th-* is preserved in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (109) 'cut (vegetables)' | — | **kə.kə.tɐt* | *khə.kə.tɐ̀t* | *kə́.kə̀.tɐ̄t* | *kə.kə.kéjʔ* |
| (110) 'descend' | — | **kə.ta* | *kə̀.ta* | — | *ʔú-kə̄.kɛ̀* |
| (111) 'far' | — | **kə.ta* | *kə̀.tà* | *kə̄.tú* | *kə̄.kɛ̄* |
| (112) 'green' | — | **kə.mə.tek* | *khə̀.mə̀.tek* | *khə́.mə̀.ték* | — |
| (113) 'pine (tree)' | **taŋ* | **mə.tɐŋ* | *mə.tɐŋ* | *ŋə̄.tà* | — |
| (114) 'pound/crush' | **daːy* | **taj* | *khə̀.ŋə̀.tàj* | — | — |
| (115) 'word/speech' | — | **tow* | *tuj* | *te* | — |

### 4.1.5 *th-

| PTB > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|
| **s-* > **th-* | > *th-* | *th-* | *th-* |
| (before high vowels) | | | *t-* |

PTB **s-* becomes PTk **th-*. It is to be expected that some instances of PTB **t-* also become PTk **th-*, but no cases of this sort can be conclusively shown to exist. Normally, PTk **th-* remains /th-/ in all of the daughter languages:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (116) 'awaken' | **m-sow* | **kə.thow* | *kə̀.thuj* | *kə̄.thɛ̀* | *kə̄.thòw* |
| (117) 'be like' | — | **kə.tha* | *kə̀.tha* | *kə̄.thā* | — |
| (118) 'bile' | | **ʔa.thi* | *ʔa.thì* | *ʔā.thɛ́* | — |
| (119) 'clean' | **sar* | **kə.thɐr* | *kə̀.thɐr* | *kə̀.thàr* | — |
| (120) 'drive' | — | **kə.thaw* | *kə̀.thàw* | *kə̄.thō* | *kə̄.thòw* |
| (121) 'dry' | — | **kə.theŋ* | *kə̀.theŋ* | *kə̄.thèŋ* | *kə̄.thē* |
| (122) 'exchange' | — | **kə.ŋə.thɐj* | *khə̀.ŋə̀.thu* | *khə́.ŋə̀.thî* | — |
| (123) 'fast/quick' | — | **kə.thak* | *kə̀.thàk* | *kə̄.thók* | — |
| (124) 'fat' | **saːw* | **ʔa.thaw* | *ʔa.thàw* | *ʔā.thō* | *ʔā.thòw* |
| (125) 'fruit' | **sey* | **they* | *ʔà.thej* | *ʔā.thì* | *ʔá.thā.thù* |
| (126) 'hide' | — | **kə̀.ŋə̀.thum* | *khə̀.ŋə̀.thúm* | *khə́.ŋə̀.thùm* | *kə̄.nə̄.thɛ̂ŋ* |
| (127) 'kill' | **sat* | **-kə.thɐt* | *sá-kə̀.thɐ̀t* | *sù-kə̀.thɐ́t* | *jà-kə́.thɛ̀jʔ* |
| (128) 'know/see' | **syey* | **kə.thej* | *kə̀.thə́j* | *kə.thī* | *kə̄.thù* |
| (129) 'liver' | **m-sin* | **ʔa.mə̀.thin* | *ʔa.mə.thin* | *ʔā.mə̄.thɛ̄n* | *ʔa.mə̀.thɛ̀n* |
| (130) 'lung/chest' | — | **mə.thik-rɐ* | *mə.thik-rɐ* | *mə̄.thɛ̄k-rɐ́* | — |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (131) ‘new’ | *sar | *kə.thɐr | kə̀.thɐ̀r | kə̄.thár | kə̀.thô |
| (132) ‘three’ | *g-sum | *kə.thum | kə.thùm | kə̄.thûm | kə.thèm |

**(119, 131)** Both of these PTk forms are from the same PTB root, with ‘new’ as its basic meaning.

However, before high-vowel open-syllable rhymes, PTk **th-* becomes /t-/ in Huishu:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (133) ‘deep’ | — | *kə.thuk | kə̀.thuk | kə̄.thūk | kə̄.tù? |
| (134) ‘die’ | *səy | *kə.thi | kə̀.thì | — | kə.tìk |

This sound change is interesting, since its outcome is roughly opposite of what might be expected on aerodynamic grounds. The coarticulation of high vowels with stops should cause the volume of the space between the constriction and the glottis to be relatively smaller than the coarticulation of non-high vowels with the same stops. Due to known aerodynamic constraints on voicing, such a configuration should favor a relatively longer voice onset time, which is to say, aspirated stops should be relatively more favored before high vowels than low vowels. In light of these facts, it is probably best to treat this **th* > /t/ change as a kind of hyper-correction: speakers must have attributed the relatively long voice onset time of the stop to the following vowel, rather than parsing it to its actual source, intentional aspiration.

#### 4.1.6 *k-

| PTB | > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|---|
| *k-, *g- | > *k- | > k- | k- | k- |

PTB **g-* and **k-* may both become PTk **k-*. The conditioning environment that causes some instances of PTB **k-* to become PTk **kh-* appears to be the same as that producing the analogous split between PTk **p-* and **ph-* (see Section 4.1.1).

PTk **k-* becomes /k-/ in all known daughter languages.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (135) ‘bite’ | — | *kə.mə.kej | khə̀.mə̀.kej | khə́.mə̀.kī | — |
| (136) ‘break’ | — | *kə.kaj | kə̀.kaj | kə̄.kwè | kə̄.kêj |
| (137) ‘climb/ascend’ | — | *kə.ka | kə̀.ka | kə̄.kú | kə̄.kê |
| (138) ‘cross’ | — | *kə.kan | kə̀.kan | kə̄.kòn | — |
| (139) ‘finish’ | — | *kə.kup | kə̀.kùp | kə̄.kūp | kə̄.kɐ̀p |
| (140) ‘head’ | *s-gaw | *ʔa.kow | ʔà.kúj | ʔā.ké | ʔá.kòw |
| (141) ‘horse’ | *kor | *si.kol | sì.kùj | sī.kwē | sɐŋ-kɐ̀ŋ |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (142) ‘shoot’ | *ga:p | *kə.kap | kà.kap | kā.kōp | kà.kàʔ |
| (143) ‘thin’ | — | *kaw | kà.kàw | kā.kó | kə.tsà |
| (144) ‘twenty’ | *m-kul | *mə.kul | mà.kù | mā.kwî | mə.kɐ̀n |
| (145) ‘year’ | — | *tsiŋ-kum | tsiŋ-kúm | ðɐ̀ŋ-kūm | tsɐ́ŋ-kɐ̂m |

#### 4.1.7 *kh-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *k- > *kh- > kh- | kh- | kh- |

Some instances of PTB *k- are reflected as PTk *kh- (see Section 4.1.1, above), which becomes /kh-/ in all known daughter languages:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (146) ‘back’ | — | *khum | khùm-khor | khùm-khor | ʔā.láʔ-khɐm |
| (147) ‘bark’ | *ko:r | *thiŋ-kor | thiŋ-kor | thɐ̀ŋ-kɐ̄ | ʔā.thɐ́ŋ-kù |
| (148) ‘bee’ | *kwa:y | *khuj | khùj | ʔā.khî | — |
| (149) ‘bitter’ | *ka | *kə.kha | kà.khà | kā.khú | kā.khê |
| (150) ‘breath’ | — | *ʔa.khɐk | ʔa.khɐ́k | — | ʔā.khōʔ |
| (151) ‘chin’ | *m-ka | *mə.kha | mə.khà | mā.khú | ʔā.mā.khɐ̀ |
| (152) ‘cough’ | — | *kə.mə.kha | khà.mà.khá | khá.mà.khú | kā.má.khɐ̀ |
| (153) ‘crooked’ | — | *kə.mə.khej | khà.mà.khej | khá.mà.khì | khaʔ-kā.khú |
| (154) ‘door’ | — | *kham | khám-moŋ | nɐ̀ŋ-khām | ʔā.khɐ̀m-thū |
| (155) ‘grasshopper’ | *ka:w | *khaw | khaw | — | ʔā.kúŋ-kòw |
| (156) ‘hole/anus’ | *kor ∼ *kwar | *-khur | khà.ráŋ-khùr | pù-ʃít-khùr | — |
| (157) ‘insect’ | — | *ʔa.khu | ʔà.kù | ʔà.khɐ̀ | ʔā.khúk-è |
| (158) ‘knee’ | *m-ku:k | *ʔa.khuk | ʔà.khùk | phì-khūk | — |
| (159) ‘sew/needle’ | *ga:p | *khop | kà.khop | kā.khīp | kā.khɐ́p |
| (160) ‘smoke’ | *kəw-t | *mej-khut | mej-khùt | mà.khút | ʔā.mú-khùʔ |

## 4.2 Fricatives

#### 4.2.1 *s-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *ts-, *sy- > *s- > s- | s- | s- |

PTB **ts-* and **sy-* typically become PTk **s-*. This sound change is also shared with the Kuki-Chin languages. PTk **s-* remains /s-/ in all known daughter languages.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (161) 'correct' | — | **kə.mə.ʃuŋ* | *khə̀.mə̀.ʃ̀uŋ* | *khə́.mə̀.ʃúŋ* | *kə̄.mə̄.sūŋ* |
| (162) 'do' | — | **kə.sa* | *kə.sà* | *kə.sù* | *kə̄.sè* |
| (163) 'hair (head)' | **tsam* | **sɐm* | *kúj-sɐm* | *ké-sam* | *ʔā.ków-nə̄.sàm* |
| (164) 'join' | — | **kə.ŋə.sun* | *khə̀.ŋə̀.sun* | *khə́.ŋə̀.sún* | *kə̄.nə́.sɐ̀ŋ* |
| (165) 'meat/animal/' | **sya* | **ʔa.sa* | *ʔa.sà* | *ʔà.sú* | *ʔā.sē* |
| (166) 'old' | — | **kə.sar* | *kə̀.sàr* | *kə̄.sór* | *kə̄.sà* |
| (167) 'one' | — | **kə.si* | — | *kə̄.sɐ̄* | *kə.sík-à* |
| (168) 'rice (hulled)' | — | **ʔa.sam* | *sàm* | *ʔa.sōm* | — |
| (169) 'tempt' | — | **kə.suj* | *kə̀.súj* | *kə̄.sī* | *kə.su-è* |

### 4.2.2 **ʃ-*

| PTB | > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|---|
| **ky-*, **gy-* | > **ʃ-* | > *ʃ-* | *ʃ-* | *s-* |

The usual sources of PTk **ʃ-* are PTB **gy-* and **ky-*, which probably first merged as an aspirated palatal affricate (in opposition to an unaspirated affricate, the reflex of PTB **tsy-* and **kr-*). This aspirated affricate was then reduced to its fricative portion, resulting in the modern phonological opposition between *ʃ-* and *c-* (*ʃ-* typically functioning as the "aspirated" counterpart of *c-*). Prefixal **s-* also became a palatal affricate and appeared as PTk **ʃ-* when it preceded a sonorant-initial root or when it preempted the onset of a root (as in 'blood', Set 184).

PTk **ʃ-* normally remains /ʃ-/ in Tangkhul and Kachai, but merges with /s-/ in Huishu:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (170) 'back' | — | **kə̀.ʃɐn* | *kə̀.ʃɐn* | *kə̀.ʃin* | — |
| (171) 'brush (teeth)' | — | **kə.kə.ʃut* | *kə̀.kə̀.ʃ̀ut* | *kə́.kə̀.ʃút* | *kə̄.kə̄.séjʔ* |
| (172) 'clan' | — | **ʃɐŋ* | *ʃ̀ɐŋ* | *ʔā.ʃā* | — |
| (173) 'clothes' | — | **kə.ʃɐn* | *kə̀.ʃɐŋ* | — | *ʔā.phîk-kə̄.sɐ̀ŋ* |
| (174) 'decay' | **s-zyaw* | **kə.ʃuj* | *kə̀.ʃ̀ùj* | *kə̀.ʃî* | *kə̄.sû* |
| (175) 'eat (fruit)' | — | **kə.ʃaj* | *kə̀.ʃaj* | *kə̄.ʃwè* | — |
| (176) 'eight' | **b-r-gyat* | **ci.ʃat* | *cì.ʃàt* | *tɕī.ʃit* | *tə.tsèjʔ* |
| (177) 'emerge' | **s-twak* | **kə.ʃok* | *kə̀.ʃok* | *kə̄.ʃe* | *ʔú-kə̄.súʔ* |
| (178) 'follow' | — | **thi-kə.ʃur* | *thi-kə̀.ʃur* | *thī-kə̄.ʃur* | — |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (179) 'have the ability' | — | *kə.ʃɐp | kə̀.ʃɐp | kə̄.ʃāp | kə.saʔ |
| (180) 'house' | *kyim | *ʃim | ʃim | ʔā.ʃīm | — |
| (181) 'hundred' | *r-gya | *ʃa-kɐ | ʃá-khɐ̀ | ʃù-khá | se-kɐ̀ |
| (182) 'penis' | — | *ʃɐŋ | ʃɐŋ-kuj | — | ʔá.só |
| (183) 'penis' | — | *ʃɐŋ | ʃɐŋ-kuj | — | ʔá.só |

However, when PTk *ʃ- preceded a high vowel (in an open syllable), it appears to have been dissimilated to *s-* in Kachai:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (184) 'blood' | *s-hywəy | *ʔa.ʃi | ʔà.ʃi | ʔā.sɐ̀ | ʔā.sìk |

### 4.2.3 *h-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *h- > *h- > h- | h- | h- |

PTB *h-* becomes PTk *h-*, which is typically preserved (with some allophonic variation) in daughter languages:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (185) 'big' | — | *kə.hɐk | kə̀.hɐ́k-kə̄.hōʔ | — | kə̄.hōʔ |
| (186) 'call' | — | *kə.ho | kə̀.ho | kə̄.hɐ | — |
| (187) 'curry/green vegetable' | *han | *hɐn | hɐn | ā.hɐ̀n | — |
| (188) 'fowl' | *har | *ʔa.hɐr | hɐ̀r | ʔā.hár | ʔa.hò |
| (189) 'pot' | — | *ʔa.hɐm | hɐ̀m | ā.hàm | — |
| (190) 'red' | — | *kə.huŋ | kə̀.húŋ | — | kə̀.mə̀.hêj |
| (191) 'wither/fade' | *hwaːy | *kə.ŋə.huj | khə̀.ŋə̀.hùj | khə́.ŋə̀.hî | kə́.nə̄.hû |

### 4.2.4 *hw-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *$p^w$-, *$k^w$- > *hw- > h- | f-, hw- | h-, v- |

PTB *$k^w$- and *$p^w$- (voiceless stops with a secondary labial articulation) merge to become PTk *hw-*. This symbol is an abstraction which represents either a labial fricative of some kind (i.e. [f] or [ɸ]) or else a voiceless labiovelar glide (i.e. [w̥]). It is problematic both in that it seems to have been very easily overpowered by its conditioning environment and very easily "overwritten" (or at least crowded) by preceding prefixes.

In Tankghul, PTk **hw-* becomes /h-/, which has the allophone [f] occuring before the rhyme /-uC/. In Kachai, this onset generally becomes /f-/. In Huishu, if there is a lexical prefix, PTk **hw-* becomes a glide /w/ between the prefix onset and the nucleus of the root syllable. Otherwise, before PTk **-a* or **-aj*, it becomes /v/:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (192) 'ashes' | — | **hwot-la* | *hòt-là* | *fə̄t-lū* | — |
| (193) 'axe' | **r-p$^{w}$a* | **rə.hwa* | *ha* | *kə̄.fú* | *ʔā.rwè* |
| (194) 'bamboo' | **g-p$^{w}$a* | **kə.hwa* | *kə̀.ha-thiŋ* | *kə̀.fù-thɐŋ* | *khwē-thɐ̄ŋ* |
| (195) 'hair (body)' | — | **ʔa.hwa* | *ʔà.ha* | *ʔā.fū* | *ʔā.vém-sé-véj* |
| (196) 'leech' | **k-r-p$^{w}$at* | **mə.hwut* | *mə̀.hùt* | — | — |
| (197) 'vagina' | — | **hwaj* | *haj* | — | *ʔā.vù* |

**(193)** This onset of 'axe' in Huishu provides the one piece of known evidence that the PTB **r-* prefix was preserved in PTk. It survived in Huishu by "preempting" the root onset, or rather, crowding it to form a liquid-glide cluster.

Before rounded vowels, it appears that PTk **hw-* may dissimilate to become Huishu /h-/ (in cases where there was no preempting prefix):

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (198) 'pig' | **p$^{w}$ak* | **ʔa.hwok* | *hòk* | *ʔa.fák* | *ʔa.hùʔ* |

Finally, before **-ɐj*, PTk **hw-* becomes Tangkhul [f-] (allophone of /h-/ conditioned by the rhyme), Kachai /hw-/, and Huishu /h-/, as shown by the example 'dog' (199):

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (199) 'dog' | **k$^{w}$əy* | **hwɐj* | *fu* | *ʔā.hwì* | *ʔā.huk* |

## 4.3 Affricates

### 4.3.1 **ts-*

| **PTB** | **> PTk > Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|
| **dz-, *dzy-* | *> *ts- > ts-* | *ð-* | *ts-* |

PTB **dz-* and **dzy-* become PTk **ts-*, as does at least one irregular and unexplained instance of PTB **ts-* (in 'ill', Set 203). This onset is retained as /ts-/ in Tangkhul and Huishu, but becomes /ð-/ in Kachai:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (200) ‘black’ | — | *kə.tsik | kə̀.tsìk | khə̄.ðə́k | kə̄.tsō? |
| (201) ‘eat (rice)’ | *dzya | *kə̀.phə.tsa | phɐ-kə̀.tsà | kə́.phə̄.ðū | kə̄.phə̄.tsè |
| (202) ‘enter’ | — | *kə.tsɐŋ | kə̀.tsɐŋ | khə̄.ðà | rē-kə̄.tsô |
| (203) ‘ill’ | *tsa (∼ *dza?) | *kə.kə.tsa | kə̀.kə̀.tsa | khə́.kə̀.ðù | kə̄.kə̀.tsê |
| (204) ‘liquor’ | — | *tsɐm | tsɐm | — | — |
| (205) ‘rice (cooked)’ | *dzya-t | *tsat | tsat | ʔā.ðōt | — |
| (206) ‘sharp’ | — | *kə.tsɐn | kə̀.tsɐ́n | — | kə̄.tsèj |
| (207) ‘sister (older)’ | *dzar | *ʔa.tsɐr | ʔa.tsɐr-vu | ʔa.ðār-ì | |
| (208) ‘sky/heaven/rain’ | — | *kə.tsiŋ | kə̀.tsiŋ | kə̀.ðèŋ | ʔā.kə̄.tsèŋ |
| (209) ‘spear’ | — | *kə.tsej | *kə̀.tsej | kə̄.ðî | ʔa.kə.tsú |
| (210) ‘year’ | — | *tsiŋ-kum | tsiŋ-kúm | ðèŋ-kūm | tsɐ́ŋ-kə̂m |

### 4.3.2 *tl-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *kl- > *tl- > t- | t- | l- |

The most speculative of the onsets set up in this reconstruction is the lateral affricate PTk *tl-, which appears to be the PTk reflex of PTB *kl- and which becomes /l-/ in Huishu but /t-/ in both Kachai and Tangkhul. Problematically, most of the argument for this onset is based upon data from Huishu compared with Matisoff’s reconstruction of PTB. Further, it demands that two homophonous PTB roots, *klak ‘cook’ and *klak ‘fall’, both had nasal-final variants (or, in Matisoffian terms, ALLOFAMS). Matisoff (2003) recognizes this type of homorganic manner variation between stops and nasal as a relatively common type of allofamic relationship, but there is no evidence outside of Huishu to suggest the existence of these variants. Of course, even without those roots, the lateral affricate hypothesis would still provide a fairly attractive explanation of the correspondence sets for ‘brain’ (211) and ‘marrow’ (214):

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (211) ‘brain’ | — | *kow-ŋə.tlok | kúj-ŋə̀.tok | — | ʔa.ków-nə.lùʔ |
| (212) ‘cook’ | *klaŋ | *tlɐŋ | — | — | khə̄.lò |
| (213) ‘fall (from a height)’ | *klaŋ | *tlɐŋ | — | — | kh.ló-kə̄.sò |
| (214) ‘marrow’ | *kliŋ | *ʔa.ŋə.tliŋ | — | ʔa.ŋə.tèŋ | ʔā.nə̄.lèŋ |

#### 4.3.3 *c-

| PTB | > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|---|
| *kr-, *tsy- | > *c- > c- | tɕ- | ts- |

PTB *kr- and *tsy- become PTk *c-, the "unaspirated" counterpart of PTk *ʃ-. This onset becomes Tangkhul /c-/, Kachai /tɕ-/, and Huishu /ts-/:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (215) 'clothes' | — | *kə.con | kə̀.con | kə̀.tɕìn | — |
| (216) 'cry/weep' | *krap | *kə.cap | kə̀.càp | kə̀.tɕáp | kə̀.tsàʔ |
| (217) 'deer' | — | *caw | caw | ʔā.tɕō | ʔā.tsò |
| (218) 'dig' | *klaw | *kə.cow | kə̀.cuj | kə̀.tɕè | kə̄.tsôw |
| (219) 'fear' | *kri | *kə.ŋə.ci | khə̀.ŋə̀.cì | khə́.ŋə̀.tsɛ̄ | kə́.tsìk |
| (220) 'help' | — | *kə.ŋə.con | khə̀.ŋə̀.con | khə́.ŋə̀.tɕon | — |
| (221) 'horn' | *krəw | *ʔa.ŋə.ci | ʔà.ŋə̀.ci | ʔā.ŋə̀.tsɛ̄ | ʔa.nə.tsìk |
| (222) 'necklace' | — | *ca | ca | ʔā.tɕú | ʔa.tsè |
| (223) 'salt' | *tsyi | *mə.ci | mə̀.cî | mə.tsɛ̄ | ʔā.mə̄.tsīk |
| (224) 'sister (older)' | — | *ʔa.con | ʔa.con | hī-tɕi | — |
| (225) 'tall' | — | *kə.cow | kə̀.cùj | kə̀.tɕé | kə́.tsôw |
| (226) 'white' | *tsyar | *kə.cɐr | kə̀.cér | kə̄.tɕàr | — |

**(218)** The Tangkhul words for 'dig' suggest PTB *kraw rather than *klaw. The Jingpho reflex of this form is *krāu*, also with a *kr-* cluster, but the Lushai *thlou* does suggest a PTB velar-lateral cluster.

### 4.4 Nasals

#### 4.4.1 *m-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *m- > *m- > m- | m- | m- |

PTB *m- becomes PTk *m-, which is retained without change in all daughter languages:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (227) 'banana' | — | *-mot-thej | mót-thej | — | ʔā.mōt-thù |
| (228) 'brother-in-law' | *s-maːk | *ʔa.mak | ʔi.mak | ʔā.mok-ū | ʔú.maʔ |
| (229) 'cloud' | *r-məw | *muj | mùj-a | — | ʔā.mú-lē-tsò |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (230) ‘dream’ | *maŋ | *ʔa.mɐŋ | mèŋ | ʔā.mà | sə́.mó |
| (231) ‘give’ | — | *kə.mi | khə̀.mì | khə̀.mɐ̄ | khə̄.mê |
| (232) ‘itchy’ | — | *kə.mow | khə̀.múj | — | khə́.mòw |
| (233) ‘more than’ | — | *kə.mej | kə̀.mèj | khə̄.mî | khə̄.mù |
| (234) ‘mouth’ | *muːr | *mor | khə̀.mor | mòr-sɐ́ | ʔa.mū-ʃû |
| (235) ‘name’ | *r-miŋ | *ʔa.miŋ | ʔà.mìŋ | ʔa.mêŋ | ʔa.mèŋ |
| (236) ‘person’ | *mi | *mi | mì | ʔa.mɐ̄ | — |
| (237) ‘ripe/well-cooked’ | *min | *kə.min | khə̀.mìn | khə̄.mɐ́n | khə́.mèŋ |
| (238) ‘squeeze/ extinguish’ | *s-miːt | *kə.ci.met | kə̀.ʃì.met | kə́.ʃi.mɐ̄t | kə́.sə̀.mèjʔ |
| (239) ‘tail’ | *mey | *kə.mej | khə.mej | khə̀.mì | ʔa.khə̄.mù |

**(228)** The PTB form given here means ‘son-in-law’.

### 4.4.2 *n-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *n- > *n- > n- | n- | n- |

PTB *n- becomes PTk *n-, and it too is faithfully conserved in Tangkhul, Kachai, and Huishu:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (240) ‘breast’ | *nəw | *ʔa.nu | ʔà.nù | nɐ́-tɐ̂ | ʔā.nə̄.nùk |
| (241) ‘child’ | *naːw | *naw | shì.nàw | no | kū-nòw |
| (242) ‘damp/gentle’ | *nɐm | *kə.nim | khə̀.nîm | khə̄.nîm | — |
| (243) ‘deceive’ | — | *kə.nɐm | khə̀.nɐ̀m | khə̀.nàm | — |
| (244) ‘ear’ | *r-na | *kə.na | kə̀.nà | kə̄.nɐ̄ | ʔā.khə̄.nî |
| (245) ‘fine, be’ | — | *kə.mə.nɐk | khə̀.mə̀.nɐ̀k | khə́.ŋə̀.nák | — |
| (246) ‘hear’ | *g/r-na | *kə.ŋə.na | khə̀.ŋə̀.nà | khə́.ŋə̀.nɐ̄ | — |
| (247) ‘laugh’ | *m-nwəy | *kə.mə.nɐj | khə̀.mə̀.nù | khə́.mə̀.nî | kə̀.mə̀.nùk |
| (248) ‘leaf’ | *s-nas | *ʔa.na | ʔà.na | ʔā.nɐ̀ | ʔa.nì |
| (249) ‘mother-in-law’ | — | *ʔa.ni | ʔa.ni | ʔa.nɐ̄ | ʔa.nik |
| (250) ‘near’ | *s-naːy | *kə.ŋə.naj | khə̀.ŋə̀.náj | khə́.ŋə̀.nwè | kə̄.nə̄.nêj |
| (251) ‘nose’ | *s-na | *na- | ná-tàŋ | nɐ̄-put | ʔa.ní-ʃù |
| (252) ‘pus’ | *s-naːy | *ci.naj | ʃi.naj | — | ʔa.sə́.nêj |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (253) ‘seven’ | *s-nis | *ci.ni | ʃí.ní | ʃí.nə̂ | thi.nik |
| (254) ‘smell’ | *m-nam | *kə.mə.nɐm | khà.ŋà.nɐ̀m | khá.ŋà.nám | kà.mà.nâm |
| (255) ‘snot’ | *s-nap | *nɐp | nɐp-tiŋ | — | ʔa.nàʔ |
| (256) ‘stand’ | — | *kə.ŋə.niŋ | khà.ŋà.nîŋ | khá.ŋà.nɐ̄ŋ | — |
| (257) ‘stick (v.)’ | — | *kə.nɐp | khə.nɐp | khə.nap | khə.nàʔ |
| (258) ‘think (v.t.)’ | *s-niŋ | *kə.pə.niŋ | kà.phà.niŋ | ká.phà.nɐŋ | — |
| (259) ‘thou’ | *naŋ | *nɐŋ | — | nɐ̀ŋ | nô |
| (260) ‘twist/knead’ | *m-naːy | *kə.ŋə.ŋaj | khà.ŋà.naj | khà.nwē | khə.nêj |
| (261) ‘two’ | *g-nis | *khə.ni | khá.nî | khā.nə̂ | khə.nîk |

**(242)** The PTB etymon **nɐm* actually meant ‘low/soft’.

#### 4.4.3 *ŋ-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *ŋ- > *ŋ- > ŋ- | ŋ- | n- |

PTk **ŋ-* comes from PTB **ŋ-* and is typically regularly retained intact by Tangkhul and Kachai but becomes /n-/ in Huishu:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (262) ‘corpse’ | — | *ʔa.ŋun | ʔa.ŋúŋ | ʔā.ŋùŋ | — |
| (263) ‘desire/want’ | *ŋ-waːy | *kə.ŋaj | khə.ŋaj | khə.mwē | — |
| (264) ‘five’ | *b-ŋa | *pə.ŋa | phə.ŋà | phá.ŋə́ | phā.nì |
| (265) ‘round’ | — | *kə.ŋum | khà.ŋà.thúm | khá.ŋà.thùm | kā.nā.thə̂ŋ |

**(263)** The onset of the Kachai form *khə.mwē* ‘desire/want’ looks irregular, although it is possible that the labial onset is actually the result of assimilation to the following /w/.

### 4.5 Liquids

#### 4.5.1 *l-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *l- > *l- > l- | l- | l- |

PTk **l-* is just as predictable as the nasal onsets: It descends regularly from PTB **l-* and is reflected as /l-/ throughout the family:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (266) ‘be/have’ | — | *kə.lej | khə̀.èj | khə̀.lî | khə̄.lù |
| (267) ‘bow/arrow’ | *m-la | *mə.la | mə̀.là | mə̀.lú | ʔá.mə̀.lè |
| (268) ‘buy’ | — | *kə.lo | khə̀.ló | khə̄.lɐ́ | khə.lù |
| (269) ‘earth’ | *m-ley | *ŋə.lej | ŋə̀.lēj | ŋə̄.lì | ʔā.nə̄.lû |
| (270) ‘field’ | *low | *low | luj | ʔā.lè | ʔá.lòw |
| (271) ‘forget’ | — | *kə.mə.laj | khə̀.mə̀.laj | khə́.mə̀.lwe | kə̀.mə́.lè |
| (272) ‘four’ | *b-ləy | *pə̀.lì | mə̀.tì | pə̀.tsā | mə.kìk |
| (273) ‘heart’ | *m-luŋ | *mə.luŋ | mə̀.lùŋ | mə̀.lúŋ | ʔá.mə̀.lúŋ |
| (274) ‘lick’ | *m-lyak | *kə.mə.lek | khə̀.mə̀.lek | khə́.mə̀.lēk | kə̀.mə̀.léʔ |
| (275) ‘navel’ | *laːy | *laj | — | ʔà.úk-lé | ʔa.pú-lè |
| (276) ‘squirrel’ | *s-rey | *kə.lej | khə̀.réj | khə̄.lì | ʔā.ku.lù |
| (277) ‘steal’ | — | *kə.li | khə̀.lí | khə̄.lɐ̄ | khə̄.lì |

### 4.5.2 *r-

| PTB | > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|---|
| *r-, *l- | > *r- | > r- | r-, ð- | r- |

Along with PTk *w-, PTk *r- presents some of the biggest problems in Proto-Tangkhul consonantism. It may be ultimately necessary to recognize the presence of more than one rhotic proto-onset in the data that are collected here. Generally, these roots can be said to reflect PTB *r-, and the Tangkhul and Huishu reflexes are both quite regularly /r-/, but the Kachai reflexes seem to alternate between /r-/ and /ð-/ without a consistent conditioning environment:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (278) ‘able’ | — | *kə.rar | khə̀.rár | sū-khə̄.lār | — |
| (279) ‘add together’ | — | *kə.ŋə.rum | khə̀.ŋə̀.rùm | khə́.ŋə̀.rúm | — |
| (280) ‘alive’ | *s-riŋ | *kə.riŋ | khə̀.rìŋ | khə̄.rɐ́ŋ | khə̄.rɐ̀ŋ |
| (281) ‘blow’ | — | *kə.mə.ri | khə̀.mə̀.ri | — | kə̄.mə̄.līk |
| (282) ‘bone’ | *g-rus | *ʔa.ru | ʔa.rú-kùj | ʔā.rɐ́ | ʔā.rūk |
| (283) ‘burn’ | — | *kə.rik | khə̀.rìk | khə̄.ðɐ́k | — |
| (284) ‘finger/toe’ | — | *-mə.reŋ | -mə̀.reŋ | — | -mə̀.rē |
| (285) ‘grandchild’ | — | *ru | ʔà.**rù** | ī-**ðɐ̄** | ʔā.**rúk**-rè |
| (286) ‘heavy’ | *s-rəy-t | *kə.rit | khə̀.rìt | khə̄.rə́t | khə.rèjʔ |
| (287) ‘intestines’ | *riːl | *ʔa.kə.ril | ʔa.khə̀.rì | ʔə̄.khə̀.rɐ́ | ʔa.khə.rɐ̂ŋ |
| (288) ‘louse’ | *s-rik | *ʔa.rik | rìk | ʔā.rɐ̄k | ʔa.roʔ |
| (289) ‘medicine’ | *r-tsəy | *ʔa.ri | ʔà.rì | ʔa.rɐ̂ | ʔa.rîk |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (290) ‘otter’ | *s-ram | *si.rɐm | si.rɐm | — | ʃə.rām |
| (291) ‘pound (v.t.)’ | — | *kə.ruŋ | khə̀.ruŋ | khə̄.ðɐ̀ŋ | — |
| (292) ‘rib’ | — | *ʔa.rap | ʔa.rap | ʔā.róp | ʔa.raʔ-thɐŋ |
| (293) ‘scale (of fish)’ | *lip | *ʔa.rip | ʔà.rìp | — | — |
| (294) ‘sharpen’ | — | *kə.kə.ra | kə̀.khə̀.ra | kə́.khə̀.ðù | kə.khə.rê |
| (295) ‘six’ | *d-k-rok | *tə.ruk | thə̀.rùk | ʃə́.rúk | sə.ruʔ |
| (296) ‘snake’ | *s-b-ruːl | *pə.rul | phə́.rù | kə̄.phwí | ʔa.phə.rɐ̀ŋ |
| (297) ‘village/land’ | *ram | *ʔa.rɐm | rɐ̀m | ʔā.rám | ʔā.ràm |
| (298) ‘weave’ | *rak | *kə.rɐk | khə̀.rɐ̀k | khə̄.ðák | khə́.rōʔ |

## 4.6 Glides

### 4.6.1 *w-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *w- > *w- > w- | w-, v- | w-, v- |

The PTk forms reconstructed with the onset **w-* form what may in all justice be called a mess. In some roots, at least those with rhymes like **-a* and **-at*, the Tangkhul reflex is /v-/, the Kachai reflex is /w-/. In these same cases, the Huishu reflex is /v-/, unless there is a lexical prefix with an obstruent onset immediately before the root. In these cases, PTk **w-* is reflected as a medial glide between the consonant that was the onset of the prefix and root rhyme:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (299) ‘burst’ | — | *kə.wat | khə̀.vàt | khə̄.wāt | khə̀.vejʔ |
| (300) ‘bird’ | *wa | *wa | và-nàw | wú-ðū | ʔā.phwè |
| (301) ‘go’ | *wa | *kə.wa | khə̀.và | khə̄.wú | khé.jè |

However, a Tangkhul /v-/, Kachai /h-/, Huishu /v-/ correspondence pattern occurs, apparently with rhymes like PTk **-u* and **-ar*:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (302) ‘carry (on shoulders)’ | — | *kə.ŋə.wu | khə̀.ŋə̀.vù | kə̄.hɐ̄ | kə̄.nə̀.vúk |
| (303) ‘mushroom’ | — | *war | var | hór-tsɐ́ | ʔá-và |

But this still leaves a considerable residue of forms that are reconstructed here with the PTk **w-* onset (either because of PTB onset or because there does not seem to be a better place to put them), but which do not display one of these correspondence patterns:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (304) 'bear' | **wam* | **wam* | *ʃì-ŋòm* | *tɕī-hím* | *ʔā.hɛ̀m* |
| (305) 'belly' | **puːk* ∼ **wuːk* | **ʔa.wuk* | *ʔà.wùk* | *wúk-* | *ʔā.wùʔ* |
| (306) 'flower' | **wan* | **ʔa.won* | *ʔà.wón* | *ʔā.vɛ̄n* | *ʔá.və̄.vɛ̄ŋ-rē* |

**(304)** This root has apparent reflexes in most Tangkhul languages and has apparent cognates in many other TB languages. However, the onsets of these forms display a large amount of variation of a kind that cannot be explained in terms of regular sound change. There seem to be three onset variants: *w/v-* ∼ *ŋ-* ∼ *h-*. Even within the Tangkhul family, all these variants are attested: Khangoi *səwoŋ*; Phadāng *səŋom*, Tangkhul *ʃì-ŋòm*; Kachai *tɕī-hím*, Huishu *ʔā.hɛ̀m*. It may be useful to note that some Tangkhuls have taboos about saying the name of the bear and are said to employ euphemisms such as 'the black one' to refer to bears. It may be, then, that the irregular reflexes are due to taboo distortion.

### 4.6.2 *j-

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **y-* > **j-* > *j-* | *j-* | *j-* |

PTB **y-* becomes PTk **j-*[8], which is regularly reflected as /j-/ in Tangkhul daughter languages:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (307) 'accept' | — | **kə.mə.ja* | *khə̀.mə̀.ja* | *khə́.mə̀.ju* | *kə̄.mə̄.jê* |
| (308) 'ashamed' | **g-yak* | **kə.kə.jɐk* | *kə̀.khə̀.jɐk* | *kə́.khə̀.jak* | *kə̄.khə̄.jōʔ* |
| (309) 'palm (of hand)' | | **-mə.ja* | *paŋ-mə.ja* | *ʔā.pón-mə̀.jú* | — |
| (310) 'root' | — | **ʔa.ŋə.juŋ* | *ʔà.ŋə.juŋ* | *ʔā.ŋə̄.lɛ̀ŋ* | *ʔá.nə.jùŋ* |
| (311) 'sell' | **ywar* | **jwor* | *khə̀.jòr* | *khə̄.wōr* | *khə.jù* |
| (312) 'sleep/lie down' | **yip* | **kə.jip* | — | *khə̄.jíp* | *khə.jêp* |

## 4.7 Summary

With the data now available, it is possible to account for most of the consonant correspondences among the various Tangkhul languages and between PTB and PTk. Several significant problems remain:

1. The aspirated/unaspirated split in PTB voiceless plosives.
2. The nature of the relationship between the sets reconstructed here with the onsets **hw-* and **w-*.

[8]Note that the difference between PTB **y-* and PTk **j-* is one only of transcription.

3. The cause for the mysterious *r*-/ð- split among the Kachai reflexes of PTk **r*-.

We will probably not resolve these problems without additional data.

# 5 Rhymes

The problems in reconstructing the onsets, considerable though they may be, are less significant than those involved in reconstructing the PTk system of rhymes. Here, the traditional East and Southeast Asia practice of reconstructing an inventory of rhymes is followed, rather than the more widely known practice of reconstructing inventories of vowels and consonants. While this practice would not make sense for every language family—especially for language families with phonologically complex and varied stems—it has proved to be the most insightful method for dealing with languages of the Tangkhul type.

The most important reason for this is that the diachronic fate of vowels seems to be intimately tied to the place and manner of following coda consonants. Since the coda consonant of the root rhyme is typically the last segment in a stem, it does not tend to influence any other segment (besides the root vowel). Furthermore, it is not desirable to describe onset consonants and coda consonants together, since they rarely seem to show common developments. Take as an example the nasals of Huishu: in onset positions, the PTk velar nasal **ŋ*- merges with **n*- to become /n-/, leaving only a distinction between /n-/ and /m-/; the velar nasal is not allowed as an onset in Huishu. However, in coda position /-n/ does not occur, and most instances of PTk **-n* and some of **-m* have become /-ŋ/—the favored nasal coda. From a structuralist standpoint, we might want to treat [n-] and [-ŋ] as allophones of the same phoneme, since their distribution seems to be complementary. However, this analysis misses the fundamental generalization that nasals on either side of the nucleus have merged in different places, according to different rationales. The merger in the onset was unconditioned; the mergers in coda were complex and conditioned by the characteristics of the preceding vowel nucleus.

Though reconstructing the rhyme inventory seems to multiply the number of categories to be reconstructed greatly, it actually simplifies the process of reconstruction, and allows the linguist to detect patterns that would otherwise remain obscure.

## 5.1 Developments in the vowel system

Prior to a discussion of the individual rhymes, some general discussion of the development of the Tangkhul vowel systems is in order. The developments that occurred in the vowel system of PTB, yielding PTk—though they must have taken place over thousands of years—are in many ways less dramatic than those that occurred between PTk and some of its daughter languages (especially Huishu).

### 5.1.1 From PTB to PTk

The development of the PTk system of monophthong and diphthong rhymes from PTB is illustrated in Figure 4. There are five very important changes:

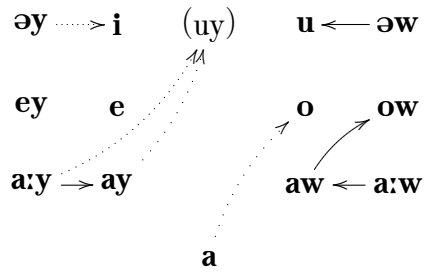


Figure 4: Developments in the vowel system between PTB and PTk (transcribed in terms of the Benedict/Matisoff reconstruction of PTB).

1. PTB **-aw* became PTk **-ow*.
2. The long diphthongs **-aːy*, **-aːw* and **-əy* merged with (what was left of) their short counterparts.
3. When preceded by a medial **-w-* or a plosive with a secondary labial articulation (i.e. **$p^w$*, **$b^w$*, **$k^w$*, and **$g^w$*), PTB **-aːy* and **-ay* became PTk **-uj* (=**-uy*).
4. When preceded by a sibilant, PTB **-əy* merged with PTB **-i* to become PTk **-i*.
5. When preceded by /**-w-*/, PTB /**-a*/ became PTk **-o*.

There were very few other significant changes in the open rhymes between PTB and PTk, but there were some important changes in the closed rhymes. Most significantly, all of the vowel-length distinctions were neutralized except that between **-aC* and **-aːC*. In general, it appears the PTB **-aC* was reflected as PTk **-ɐC*, while PTB **-aːC* was reflected as PTk **-aC*. Also, final **-s* disappeared without a trace, having no apparent effect upon the vowel quality of rhymes. Most aspects of the vocalic and rhyme system that I reconstruct for PTk is reflected unchanged in the highly conservative Standard Tangkhul dialect.

### 5.1.2 From PTk to Huishu

In contrast, Huishu is the product of a number of very dramatic changes occurring subsequent to the PTk level. A summary of these changes is presented in Figure 5.

The most surprising of these changes is the development of coda /-k/ after high vowels (a change that is confined to vowels in open syllables). Prior to this change, all instances of PTk **-k* and **-t* became glottal stop. The only velar stop codas in the language have their source in this apparently unusual sound change. While epenthesizing a final *-k* after a high vowel may seem to be a rather unmotivated and odd kind of development, it is actually paralleled cross-linguistically. Burling (1966) created a stir among Tibeto-Burmanists of the 1960s by demonstrating that non-etymological stop consonants were inserted after high vowels in the Burmish language Maru, a very close parallel to the change observed in Huishu. In the Momo group of Grassfields Bantu languages, an equally good parallel is to be found, discussed by Stallcup (1978:124-133). There, as in Huishu, velar stop codas appeared after high vowels.

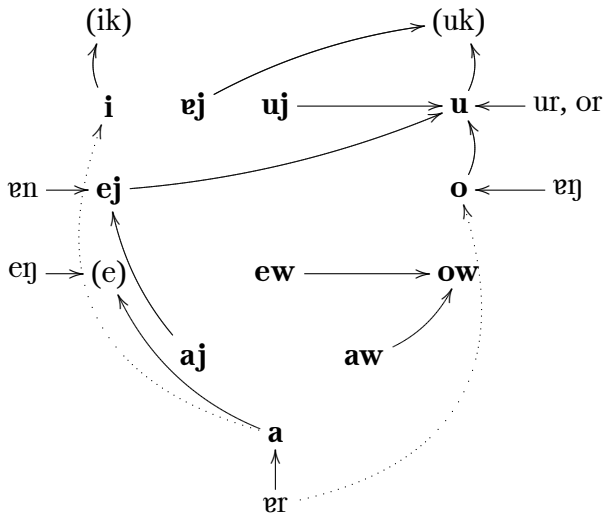


Figure 5: The development of Huishu monophthongal and diphthongal rhymes from PTk rhymes.

This type of development makes relatively little sense from a functional point of view, but seems unsurprising when examined from a articulatory/perceptual perspective. For aerodynamic reasons, high vowels are particularly subject to devoicing. When devoiced, [i] and [u] are more or less indistinguishable from the fricatives [ɕ] and [x][9]. Such epiphenomenal fricative codas could be misperceived, under the right conditions, as final stop bursts, leading listers to posit a stop where none was intended by the speaker. The details of this account, and its ramifications for the phonological development of Huishu deserve an independent treatment. It is mentioned here only in passing[10].

The other developments in the Huishu vowel system, while they may not be as unusual as the appearance of final *-k* "*ex nihilo*", are nevertheless dramatic. The vowels in the lower part of the PTk vowel space "moved up", leaving a gap that was filled only by the reflexes of the relatively rare PTk rhyme **-ɐr*. The only two diphthongs remaining in Huishu are **-ej* and **-ow*, and PTk **-ow* is apparently the only PTk rhyme left unchanged in Huishu.

The changes in Huishu closed rhymes, as will be detailed below, were also impressive, and left Huishu with a much smaller rhyme inventory than PTk or the other modern Tangkhul languages analyzed here.

### 5.1.3 Summary

It is curious that so few sound changes disrupted the rhyme system inherited by Proto-Tangkhul, and even by Standard Tangkhul, in the thousands of years that have elapsed since Proto-Tibeto-Burman was spoken, and yet so many changes must be posited in order to link Huishu to Proto-Tangkhul. In most cases, the rhymes reconstructed here are based upon PTB and Standard Tangkhul, but data from the other languages have made it possible to detect cases where Tangkhul has

[9] A similar pattern of terminal devoicing can be observed in Parisian French.

[10] The broad outline of this account was first suggested to me by John Ohalla.

innovated (PTk *-ɐj* > Tangkhul *-u*, PTk *-ow* > Tangkhul *-uj*, etc.) The most dramatic and theoretically interesting changes discussed here are those evidenced by Tangkhul daughter languages like Huishu, with its emergent velar stops.

## 5.2 Monophthongs

Of all the PTk rhymes, the monophthongs are the most easily and clearly reconstructible. In fact, all of the monophthong rhyme reconstructions are identical to their Standard Tangkhul reflexes. The only great surprise in the reconstructed monophthong rhyme inventory is the fact that *-e* and *-ɐ*—both of which occur in diphthongs and in closed rhymes—are absent. This gap may be accidental. There are a few unusual developments in Huishu (see Section 5.1.2, above) and Kachai, however. In Kachai, PTk **-a* becomes /-u/ or /-ɐ/, depending upon environment, and all of the other monophthongs become /-ɐ/. The other monophthongal rhymes that exist in Kachai are the reflexes, primarily, of diphthongs.

### 5.2.1 *-a

| **PTB > PTk > Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|
| **-a* > **-a* > *-a* | *-u* | *-e* |
| (after *nasals) | *-ɐ* | *-i* |

PTB **-a* was retained in PTk as **-a*, and this form still persists in most, perhaps all, of its reflexes in Standard Tangkhul. However, in Kachai and Huishu, the situation is somewhat more complex. The regular reflexes of PTk **-a* are Kachai *-u*[11] and Huishu *-e*: nasals:

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (313) 'accept' | — | **kə.mə.ja* | *khə̀.mə̀.ja* | *khə́.mə̀.ju* | *kə̄.mə̄.jê* |
| (314) 'ashes' | — | **ɬwot-la* | *hòt-là* | *fɐ̄t-lū* | — |
| (315) 'axe' | **r-p$^{w}$a* | **rə.hwa* | *ha* | *kə̄.fú* | *ʔā.rwè* |
| (316) 'bamboo' | **g-p$^{w}$a* | **kə.hwa* | *kə̀.ha-thiŋ* | *kə̀.fù-thɐŋ* | *khwē-thɐ̄ŋ* |
| (317) 'be born' | — | **-ra* | *kə̀.phə̀.ra* | — | *kə̄.pə.rē* |
| (318) 'bird' | **wa* | **wa* | *và-nàw* | *wú-ðū* | *ʔā.phwè* |
| (319) 'bitter' | **ka* | **kə.kha* | *kə̀.khà* | *kə̄.khú* | *kə̄.khê* |
| (320) 'bow/arrow' | **m-la* | **mə.la* | *mə̀.là* | *mə̀.lú* | *ʔá.mə̀.lè* |
| (321) 'brother (younger)' | — | **ʔa.pa* | *ʔa.pa* | *ʔā.pu* | — |
| (322) 'chin' | **m-ka* | **mə.kha* | *mə.khà* | *mə̄.khú* | *ʔā.mā.khè* |
| (323) 'climb/ascend' | — | **kə.ka* | *kə̀.ka* | *kə̄.kú* | *kə̄.kê* |
| (324) 'cough' | — | **kə.mə.kha* | *khə̀.mə̀.khá* | *khə́.mə̀.khú* | *kə̄.mə́.khè* |

[11] Interestingly, PTk **-a* is also reflected in Champhung as *-u*, but is reflected as *-a* in Phadāng, which is very close to Kachai. The developments in Champhung and Kachai, then, are probably independent.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (325) 'descend' | — | *kə.ta | kə̀.ta | — | ʔú-kə̄.kɛ̀ |
| (326) 'do' | — | *kə.sa | kə.sà | kə.sù | kə̄.sɛ̀ |
| (327) 'eat (rice)' | *dzya | *kə̀.phə.tsa | phɐ-kə̀.tsà | kə́.phə̄.ðū | kə̄.phə̄.tsɛ̀ |
| (328) 'far' | — | *kə.ta | kə̀.tà | kə̄.tú | kə̄.kɛ̄ |
| (329) 'go' | *wa | *kə.wa | khə̀.và | khə̄.wú | khɛ́.jɛ̀ |
| (330) 'hair (body)' | — | *ʔa.hwa | ʔà.ha | ʔā.fū | ʔā.vɐ́m-sé-véj |
| (331) 'he/she' | *ʔa | *ʔa- | ʔà | ʔwú-é | — |
| (332) 'hundred' | *r-gya | *ʃa-kɐ | ʃá-khɐ̀ | ʃù-khá | se-kɐ̀ |
| (333) 'ill' | *tsa | *kə.kə.tsa | kə̀.ə̀.tsa | khə́.kə̀.ðù | kə̄.kə̀.tsɛ̂ |
| (334) 'meat/animal/' | *sya | *ʔa.sa | ʔa.sà | ʔà.sú | ʔā.sɛ̄ |
| (335) 'necklace' | — | *ca | ca | ʔā.tɕú | ʔa.tsɛ̀ |
| (336) 'palm (of hand)' | — | *-mə.ja | paŋ-mə.ja | ʔā.pón-mə̀.jú | — |
| (337) 'seek/search' | *pa | *kə.pha | kə̀.pha | kə̄.phù | kə.phɛ̄ |
| (338) 'sharpen' | — | *kə.kə.ra | kə̀.khə̀.ra | kə́.khə̀.ðù | kə.kə.rɛ̂ |
| (339) 'ten' | — | *-ra | thə̀.ra | ʃə.rú | sə.rɛ̀ |

**(320)** Other reflexes include Champhung *məlu*, N. Tangkhul and C. Tangkhul *məla*. Other cognates with a lateral onset include Maring *la*, Khoibu *məla*, and Marām (Khoirao) *nla*.

**(318)** Other reflexes include Phadāng *wa-naw*. Many of the more southerly group of Tangkhul languages take their words for 'bird' from another root—something like **ʔa.ta*: Khangoi *ʔəta*, N. Tangkhul *ʔəta*, C. Tangkhul *ota*.

However, after nasals, the situation is different. There, PTk **-a* becomes Kachai *-ɐ* and Huishu *-i*:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (340) 'ear' | *r-na | *kə.na | kə̀.nà | kə̄.nɐ̄ | ʔā.khə̄.nî |
| (341) 'five' | *b-ŋa | *pə.ŋa | phə.ŋà | phə́.ŋɐ́ | phə̄.nì |
| (342) 'hear' | *g/r-na | *kə.ŋə.na | khə̀.ŋə̀.nà | khə́.ŋə̀.nɐ̄ | — |
| (343) 'leaf' | *s-nas | *ʔa.na | ʔà.na | ʔā.nɛ̀ | ʔa.nì |
| (344) 'nose' | *s-na | *na- | ná-tàŋ | nɐ̄-put | ʔa.ní-ʃù |

**(340)** Other cognates include Champhung *khunu*, N. Tangkhul *ʔəkhəna*, C. Tangkhul *ʔokhəna*, Khangoi *kəna*, Phadāng *kənew*, all 'ear'.

**(343)** Other cognates include Champhung *siŋ-ni*, N. Tangkhul and C. Tangkhul *thi-na*, Khangoi *thiŋ-na*, Phadāng *thiŋ-ni*, all 'leaf'.

### 5.2.2 *-i

| PTB | > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|---|
| *-i, *-is, (*-əy) | > *-i | > -i | -ɐ | -ik |

PTk *-i* resulted from the conditioned merger of PTB *-əy* with the reflexes of PTB *-i* and *-is*. In general, PTB *-əy* became PTk *-i* when preceded by a fricative or affricate. In Tangkhul, PTk *-i* remains /-i/. In Kachai, it becomes /-ɐ/. In Huishu, /k/ was inserted after all PTk *high vowels in open syllables, so that the Huishu reflex of PTk *-i* is /-ik/ (see Section 5.1.2, above).

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (345) 'bile' | | *ʔa.thi | ʔa.thì | ʔā.thɐ́ | — |
| (346) 'blood' | *s-hywəy | *ʔa.ʃi | ʔà.ʃi | ʔā.sɐ̀ | ʔā.sìk |
| (347) 'blow' | — | *kə.mə.ri | khà.mə̀.ri | — | kə̄.mə̄.līk |
| (348) 'comb' | *si | *rik-si | rik-si | rɐ́k-sɐ | ʔə̄.róʔ-sìk |
| (349) 'die' | *səy | *kə.thi | kə̀.thì | — | kə.tìk |
| (350) 'fear' | *kri | *kə.ŋə.ci | khə̀.ŋə̀.cì | khə́.ŋə̀.tsɐ̄ | kə́.tsìk |
| (351) 'four' | *b-ləy | *pə̀.lì | mə̀.tì | pə̀.tsɐ̄ | mə.kìk |
| (352) 'give' | — | *kə.mi | khə̀.mì | khə̀.mɐ̄ | khə̄.mê |
| (353) 'horn' | — | *ʔa.ŋə.ci | ʔà.ŋə̀.ci | ʔā.ŋə̀.tsɐ̄ | ʔa.nə.tsìk |
| (354) 'medicine' | *r-tsəy | *ʔa.ri | ʔà.rì | ʔa.rɐ̂ | ʔa.rîk |
| (355) 'mother-in-law' | — | *ʔa.ni | ʔa.ni | ʔa.nɐ̄ | ʔa.nik |
| (356) 'one' | — | *kə.si | — | kə̄.sɐ̄ | kə.sík-à |
| (357) 'salt' | *tsyi | *mə.ci | mə̀.cî | mə.tsɐ̄ | ʔā.mə̄.tsīk |
| (358) 'seven' | *s-nis | *ci.ni | ʃí.ní | ʃɐ́.nɐ̂ | thi.nik |
| (359) 'son-in-law' | — | *-ri- | i-rì-ha | ʔā.rɐ̄-hū-u | ú-ré-jè |
| (360) 'steal' | — | *kə.li | khə̀.lí | khə̄.lɐ̄ | khə̄.lì |
| (361) 'two' | *g-nis | *khə.ni | khə́.nî | khə̄.nɐ̂ | khə.nîk |

**(352)** The Huishu form is curious, and apparently irregular. The nasal onset may have conditioned lowering of the vowel, resulting in the unexpected reflex (with no epenthetic /k/).

**(360)** The irregular Huishu form given here is probably a loan from Standard Tangkhul.

### 5.2.3 *-o

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-wa > *-o > -o | -ɐ | -u |

PTk *-o* can be reconstructed for a relatively small number of lexical items. These etyma apparently reflex PTB *-wa*. /-o/ is retained only in Standard Tangkhul. In Kachai, PTk *-o* becomes /-ɐ/, while in Huishu it was raised /-u/ (subsequent to the sound change wherein PTk *-u > /-uk/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (362) 'buy' | — | *kə.lo | khə̀.ló | khə̄.lɐ́ | khə.lù |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (363) ‘call’ | — | **kə.ho* | *kə̀.ho* | *kə̄.hɐ* | — |
| (364) ‘nine’ | **s-gwa*, **d-gwa* | **cə.ko* | *ci.ko* | *tɕī.kɐ̄* | *tə̀.kù* |

### 5.2.4 *-u

| PTB | > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|---|
| **-əw*, **-u*, **-us* | > **-u* | > *-u* | *-ɐ* | *-uk* |

PTk **-u* derives from a few of PTB rhymes, demonstrably including **-əw*, and **-us*, and probably **-u* as well. In Tangkhul, PTk **-u* remains /u/, but it is centralized to /-ɐ/ in Kachai. As is the case with the other high vowels, an excescent /k/ appeared after PTk **-u* in Huishu so that PTk **-u* > Huishu /-uk/ (see Section 5.1.2, above).

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (365) ‘bone’ | **g-rus* | **ʔa.ru* | *ʔa.rú-kùj* | *ʔā.rɐ́* | *ʔā.rūk* |
| (366) ‘breast’ | **nəw* | **ʔa.nu* | *ʔà.nù* | *nɐ́-tɐ̂* | *ʔā.nə̄.nùk* |
| (367) ‘carry (on shoulders)’ | — | **kə.ŋə.wu* | *khə̀.ŋə̀.vù* | *kə̄.hɐ̄* | *kə̄.nə̀.vúk* |
| (368) ‘grandchild’ | — | **ru* | *ʔà.rù* | *ī-ðɐ̄* | *ʔā.rúk-rè* |
| (369) ‘insect’ | — | **ʔa.khu* | *ʔà.kù* | *ʔà.khɐ̀* | *ʔā.khúk-è* |
| (370) ‘tie’ | — | **kə.mə.su* | *khə̀.mə̀.sú* | *khə́.mə̀.sī* | *kə̄.mə́.sūk* |

## 5.3 Diphthongs

As is the case for the monophthongs, the evidence supporting the reconstruction of the PTk diphthongs is strong. Standard Tangkhul preserves these rhymes most faithfully, though it does not preserve PTk **-ɐj* and **-ow* in their original forms. Both Kachai and Huishu have undergone massive restructuring of their diphthong inventories. In Kachai, rising diphthongs only exist marginally. All of the PTB falling diphthongs become either monophthongs or the rising diphthong *we* [o̯ɛ]. The Huishu developments are summarized in Figure 5.

### 5.3.1 *-aj

| PTB | > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|---|
| **-aːy*, **-al* | > **-aj* | > *-aj* | *-we* | *-ej*, *-e*, *-u* |

PTB **-aːy*, when it was not preceded by *-w-*, merged with two (or more) liquid final rhymes to yield PTk *-*aj*. In Tangkhul, this is reflected simply as *-aj*, but it is raised to *-we* in Kachai and *-ej* in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (371) 'break' | — | **kə.kaj* | *kə̀.kaj* | *kə̄.kwè* | *kə̄.kêj* |
| (372) 'desire/want' | **ŋ-waːy* | **kə.ŋaj* | *khə.ŋaj* | *khə.mwē* | — |
| (373) 'easy/cheap' | — | **kə.paj* | *kə̀.paj* | *kə̄.pwè* | *kə̄.pēj-re* |
| (374) 'eat (fruit)' | — | **kə.ʃaj* | *kə̀.ʃaj* | *kə̄.ʃwè* | — |
| (375) 'fish' | **d-kaːy* | **khaj* | *kháj* | *ʔā.khwe* | *ʔā.khéj-ʃēj* |
| (376) 'fly' | — | **kə.paj* | *kə̀.pàj* | *kə̄.pwé* | *kə́.pej* |
| (377) 'lip' | **dyal* | **mor-caj* | *mor-caj* | *mōr-tɕē* | — |
| (378) 'near' | **s-naːy* | **kə.ŋə.naj* | *khə̀.ŋə̀.náj* | *khə́.ŋə̀.nwè* | *kə̄.nə̄.nêj* |
| (379) 'pound/crush' | **daːy* | **taj* | *khə̀.ŋə̀.tàj* | — | — |
| (380) 'pus' | **s-naːy* | **ci.naj* | *ʃi.naj* | — | *ʔa.sə́.nêj* |
| (381) 'twist/knead' | **m-naːy* | **kə.ŋə.ŋaj* | *khə̀.ŋə̀.naj* | *khə̀.nwē* | *khə.nêj* |

**(375)** Other reflexes belonging to this set include Champhung *ʔəkhai*, N. Tangkhul *khi*, Khangoi *khi*, and Phadāng *khaie*, all 'fish'.

However, there are a number of caveats to the scheme described here. First of all, it appears that, after **l-*, the Huishu reflex of PTk **-aj* is **-e* rather than **-ej*:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (382) 'forget' | — | **kə.mə.laj* | *khə̀.mə̀.laj* | *khə́.mə̀.lwe* | *kə̀.mə́.lè* |
| (383) 'navel' | **laːy* | **laj* | — | *ʔà.úk-lé* | *ʔa.pú-lè* |

**(383)** The Kachai form given here is apparently irregular. The expected form would be *ʔà.úk-lwé*.

Furthermore, there are two unexplained cases where PTk forms that have been reconstructed with **-ej* have the Huishu reflex *-u*:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (384) 'knife' | — | **khaj* | *khaj* | *ʔā.khwé* | *ʔa.khū-rè* |
| (385) 'vagina' | — | **hwaj* | *haj* | — | *ʔā.vù* |

**(384)** Another reflex of this form is Khangoi *khe-naw* 'knife'.

Perhaps more examples of this same correspondence set will either give evidence for a conditioning environment leading to this split in Huishu, or demonstrate that a distinct rhyme will have to be reconstructed for the members of this correspondence set.

### 5.3.2 *-aw

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **-aːw* > **-aw* > *-aw* | *-o* | *-ow* |

The **-aw* rhyme in PTk reflects the PTB **-aːw* rhyme, and is reflected as /-aw/ in Tankghul, /-o/ in Kachai, and /-ow/ in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (386) ‘child’ | *naːw | *naw | shì.nàw | no | kū-nòw |
| (387) ‘deer’ | — | *caw | caw | ʔā.tɕō | ʔā.tsò |
| (388) ‘drive’ | — | *kə.thaw | kə̀.thàw | kə̄.thō | kə̄.thòw |
| (389) ‘fat’ | *saːw | *ʔa.thaw | ʔa.thàw | ʔā.thō | ʔā.thòw |
| (390) ‘grasshopper’ | *kaːw | *khaw | khaw | — | ʔā.kúŋ-kòw |
| (391) ‘thin’ | — | *kaw | kə̀.kàw | kə̄.kó | kə.tsà |

### 5.3.3 *-ɐj

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-əy > *-ɐj > -u | -i | -uk |

In the absence of specific conditioning factors, the reflex of PTB *-əy is PTk *-ɐj. In Kachai, PTk *-ɐj becomes /-i/, but Tangkhul it becomes -u. In Huishu, it appears that PTk *-ɐj first merged with pre-Huishu **-u, and therefore is, like it, reflected as /-uk/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (392) ‘dog’ | *kʷəy | *hwɐj | fu | ʔā.hwì | ʔā.huk |
| (393) ‘egg’ | *har-rəy | *har-rɐj | hɛ̀r-ru | hàr-ðî | ʔā.hó-phə̄.rùk |
| (394) ‘exchange’ | — | *kə.ŋə.thɐj | khə̀.ŋə̀.thu | khə́.ŋə̀.thî | — |
| (395) ‘laugh’ | *m-nwəy | *kə.mə.nɐj | khə̀.mə̀.nù | khə́.mə̀.nî | kə̀.mə̀.nùk |
| (396) ‘water’ | *rəy | *-rɐj | tɛ́-ru | tūŋ-ðì | ʔā.rùk |

### 5.3.4 *-ej

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-ey > *-ej > -ej | -i | -u |

There are numerous examples showing that PTk *-ej reflects PTB *-ey. Tangkhul faithfully reflects this rhyme just as it was given it by the proto-language. In Kachai, the reflex of this rhyme is a simple high front monophthong /-i/. In Huishu, the reflex of this rhyme was also raised, but it was backed as well, yielding /-u/. This raising process must have occurred subsequent to the *k*-insertion that closed all of the high monophthongal rhymes in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (397) ‘be/have’ | — | *kə.lej | khə̀.èj | khə̀.lî | khə̄.lù |
| (398) ‘bite’ | — | *kə.mə.kej | khə̀.mə̀.kej | khə́.mə̀.kī | — |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (399) 'brother (older)' | — | **-mej* | *a.mej* | *hī-mì* | — |
| (400) 'crooked' | — | **kə.mə.khej* | *khə̀.mə̀.khej* | *khə́.mə̀.khì* | *kha?-kə̄.khú* |
| (401) 'earth' | **m-ley* | **ŋə.lej* | *ŋə̀.lēj* | *ŋə̄.lì* | *?ā.nə̄.lû* |
| (402) 'fire' | **mey* | **mej* | *mej* | *?ā.mì* | *?ā.mū* |
| (403) 'foot' | **pey* | **?a.phej* | *?a.phéj* | *?ā.phī* | *?ā.phù* |
| (404) 'fruit' | **sey* | **they* | *?à.thej* | *?ā.thì* | *?á.thə̄.thù* |
| (405) 'know/see' | **syey* | **kə.thej* | *kə̀.thə́j* | *kə.thī* | *kə̄.thù* |
| (406) 'more than' | — | **kə.mej* | *kə̀.mèj* | *khə̄.mî* | *khə̄.mù* |
| (407) 'spear' | — | **kə.tsej* | *kə̀.tsej* | *kə̄.ðî* | *?a.kə.tsú* |
| (408) 'squirrel' | **s-rey* | **kə.rej* | *khə̀.réj* | *khə̄.lì* | *?ā.ku.lù* |
| (409) 'tail' | **mey* | **kə.mej* | *khə.mej* | *khə̀.mì* | *?a.khə̄.mù* |
| (410) 'tongue' | **m-ley* | **mə.lej* | *mə.lèj* | *?ā.mə.lî* | *?a.mə.lû* |

**(410)** Pettigrew (1979:205), Luikham (1974:279), and Arokianathan (1987:9) all agree in distinguishing the rhyme in this word from that in 'earth' and in treating it as a monophthong, so that 'tongue' would be pronounced [mə̀lè]. This distinction may represent a conservative feature of Ukhrul dialect that has been lost in the other language varieties represented here, although it is curious that 'earth' and 'tongue' are supposed to by homophonous roots at the PTB level.

### 5.3.5 *-ew

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| ? > **-ew* > *-ew* | *-i* | *-ow* |

The PTk **-ew* rhyme is poorly attested, and its PTB origins can thus not be ascertained. However, it is essential that this rhyme be posited in order to account for two etyma. In Standard Tangkhul, it remains *-ew*, but becomes *-i* in Kachai and *-ow* in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (411) 'crab' | — | **khaj-rew* | *kháj-rèw* | *khu-rì* | *?a.khēj-rów* |
| (412) 'wash (hands)' | — | **kə.phew* | *kə̀.phew* | *kə̄.phì* | — |

### 5.3.6 *-ow

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **-ow, *-aw* > **-ow* > *-uj* | *-e* | *-ow* |

The PTk **-ow* rhyme is very well attested within the Tangkhul family, but it is not possible to assign a Proto-Tibeto-Burman origin to more than a few of the roots reflecting this proto-rhyme.

Thus, there is considerable ambiguity regarding the ideal reconstruction for this category. The rather different diphthongal reflexes in Standard Tangkhul and Huishu seem to point in two different directions: to a palatal diphthong on the one hand or a labial diphthong on the other. The reconstruction *-ow was chosen for three reasons:

1. Four of the five known PTB roots with reflexes in this group are reconstructed with the rhymes **-ow* and **-aw*.

2. The Huishu rhyme in this correspondence set seem to match this PTB rhymes quite well (back rounded vowel followed by /*w*/), and it would seem odd to have one sound change convert /*ow*/ to /*uj*/ (or the like) and another change it back.

3. Other Tangkhul languages tend to have rhymes more like /*ow*/ than /*uj*/ in this correspondence set. Set (419) 'head' (below) also includes Champung *kau* (Brown), N. Tangkhul *akaw*, C. Tangkhul *akaw*, Khangoi *akaw* (McCulloch), and Phadāng *kjew* (McCulloch). all of which suggest that the generally innovative Huishu is conservative in this case and the generally conservative Standard Tangkhul has innovated here.

Tangkhul has merged this rhyme with /-uj/, its reflex of PTk **-uj*. Kachai also displays a rather innovative reflex, /-e/, but this has remained distinct in Kachai from PTK **-uj*, which is reflected there as /-i/.

| | **PTB** | **PTk** | **Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|---|---|
| (413) 'awaken' | **m-sow* | **kə.thow* | *kə̀.thuj* | *kə̄.thè* | *kə̄.thòw* |
| (414) 'brother-in-law' | **s-maːk* | **ʔa.mak* | *ʔi.mak* | *ʔā.mok-ū* | *ʔú.maʔ* |
| (415) 'burn' | — | **kə.cow* | *kə̀.cuj* | *kə̄.tɕè* | *khə̄.ròw* |
| (416) 'cloud' | **r-məw* | **muj* | *mùj-a* | — | *ʔā.mú-lē-tsò* |
| (417) 'dig' | **klaw* | **kə.cow* | *kə̀.cuj* | *kə̀.tɕè* | *kə̄.tsôw* |
| (418) 'field' | **low* | **low* | *luj* | *ʔā.lè* | *ʔá.lòw* |
| (419) 'head' | **s-gaw* | **ʔa.kow* | *ʔà.kúj* | *ʔā.ké* | *ʔá.kòw* |
| (420) 'itchy' | — | **kə.mow* | *khə̀.múj* | — | *khə́.mòw* |
| (421) 'pestle' | — | **si.kow* | *si.kùj* | *sū.kwé* | *ʔā.rúŋ-kòw* |
| (422) 'tall' | — | **kə.cow* | *kə̀.cùj* | *kə̀.tɕé* | *kə́.tsôw* |
| (423) 'word/speech' | — | **tow* | *tuj* | *te* | — |

**(419)** Other reflexes include Champung *kau*, N. Tangkhul *akaw*, C. Tangkhul *akaw*, Khangoi *akaw*, and Phadāng *kjew*.

### 5.3.7 *-uj

| **PTB** | **> PTk > Tangkhul** | **Kachai** | **Huishu** |
|---|---|---|---|
| **-waːy, *-ay* | **-uj* > *-uj* | *-i* | *-u* |

PTk *-uj* comes from PTB *-waːy* and from *-ay* when it follows *-w-* and labialized consonants. In Tangkhul, the rhyme remains *-uj* (with which PTk *-ow* also merges). In Kachai, the end of the diphthong is preserved (resulting in *-i*) which in Huishu, the nucleus is preserved, yielding *-u*.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (424) 'bee' | **kwaːy* | **khuj* | *khùj* | *ʔā.khî* | — |
| (425) 'brother-in-law' | — | **ʔa.ɪmuj* | *ʔa.mùj* | *hī-mì* | — |
| (426) 'cloud' | **r-məw* | **ɪmuj* | *mùj-a* | — | *ʔā.mú-lē-tsò* |
| (427) 'decay' | **s-zyaw* | **kə.ʃuj* | *kə̀.ʃùj* | *kə̀.ʃî* | *kə̄.sû* |
| (428) 'full/complete' | **bway* | **kə.puj* | *kə̀.púj* | *kə̄.pî* | *kə̄.pù* |
| (429) 'leftside' | **bʷay* | **vuj* | *júj-vak* | *ʔā.jí.wá* | *ʔá.vú-è* |
| (430) 'tempt' | — | **kə.suj* | *kə̀.súj* | *kə̄.sī* | *kə.su-è* |
| (431) 'water buffalo' | **lwaːy* | **si.luj* | *sì.lùj* | *sî-lî* | *ʔā.sə.lù* |
| (432) 'wither/fade' | **hwaːy* | **kə.ŋə.huj* | *khə̀.ŋə̀.hùj* | *khə́.ŋə̀.hî* | *ká.nə̄.hû* |

## 5.4 Rhymes with Nasal Codas

The rhymes with nasal codas are reconstructed primarily upon evidence from Standard Tangkhul and reconstructed PTB roots. Kachai typically preserves at least the coda of these rhymes, and often the vowel nucleus. In Huishu, however, PTk *-n* is completely replaced by /-ŋ/, and most rhymes with a coronal nasal coda are reflected as /-ɐŋ/.

### 5.4.1 *-ɐm

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-am > *-ɐm > -ɐm | -am | -am |

PTB *-am* becomes PTk *-ɐm*. This is the best-attested of the PTk **m*-final rhymes. In Kachai and Huishu, it is reflected as *-am*.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (433) 'basket strap' | — | **-nɐm* | — | *ʔā.nàm* | *ʔá.khə̄.nàm* |
| (434) 'chase' | — | **-sɐm* | *khə̀.ŋə̀.sɐ̀m* | *kə̄.sām* | *kə̄.kə̄.sàm* |
| (435) 'deceive' | — | **kə.nɐm* | *khə̀.nɐ̀m* | *khə̀.nàm* | — |
| (436) 'hair (head)' | **tsam* | **sɐm* | *kúj-sɐm* | *ké-sam* | *ʔā.ków-nə̄.sàm* |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (437) ‘liquor’ | — | *tsɐm | tsɐm | — | — |
| (438) ‘otter’ | *s-ram | *si.rɐm | si.rɐm | — | ʃə.rām |
| (439) ‘pot’ | — | *ʔa.hɐm | hɐ̀m | ā.hàm | — |
| (440) ‘run/flee’ | — | *-sɐm | khə̀.ŋə̀.sɐ̀m | khə́.ŋə̀.nám | kə̀.mə̀.nâm |
| (441) ‘sit’ | — | *kə.pɐm | kə̀.pɐm | kə̄.pàm | — |
| (442) ‘smell’ | *m-nam | *kə.mə.nɐm | khə̀.ŋə̀.nɐ̀m | khə́.ŋə̀.nám | kə̀.mə̀.nâm |
| (443) ‘village/land’ | *ram | *ʔa.rɐm | rɐ̀m | ʔā.rám | ʔā.ràm |

### 5.4.2 *-am

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| ? > *-am > -am | -am, -om | -ɐm |

While it seems that PTk *-am must be distinguished from *-ɐm, *-am is poorly attested and it is thus difficult to distinguish which phonetic correspondences, within this rough set, are regular and which are idiosyncratic. In general, Standard Tangkhul preserves this rhyme as -am, while in Huishu it becomes -ɐm. The normal Kachai reflex is difficult or impossible to determine at this point.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (444) ‘bear’ | *wam | *wam | ʃì-ŋòm | tɕī-hím | ʔā.hɐ̀m |
| (445) ‘door’ | — | *kham | khám-moŋ | nɐ̀ŋ-khām | ʔā.khɐ̀m-thū |
| (446) ‘rice (hulled)’ | — | *ʔa.sam | sàm | ʔa.sōm | — |

**(444)** Other reflexes belonging to this set include Khangoi *səwoŋ* and Phadāng *səŋom*. Perhaps it should actually be reconstructed as PTk **si.woŋ*.

**(446)** Other reflexes of this form include Phadāng *sam*. Cognates include Kabui (Songpu) *sam*, Khoirao (Tukaimi) *ʔasam*, and Tangsa *sam*.

### 5.4.3 *-im

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-em, *-im > *-im > -im | -im | -em |

PTk faithfully preserved PTB *-im as *-im, as did both Tangkhul and Kachai. In Huishu, this rhyme appears to be reflected as /-em/, although the evidence is scant at present.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (447) ‘damp/gentle’ | *nem | *kə.nim | khə̀.nîm | khə̄.nîm | — |
| (448) ‘house’ | *kyim | *ʃim | ʃim | ʔā.ʃīm | — |
| (449) ‘needle’ | — | *-pim | kə̀.pìm | rēm-pim | ʔā.jém-pèm |
| (450) ‘sweet’ | *dzyim | *-ʃim | kə̀.ʃim | kə̄.sīm | — |

### 5.4.4 *-um

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-um > *-um > -um | -um | -ɐm, -ɐŋ |

The solidly attested PTk *-um* rhyme reflects PTB *-um.* In both Kachai and Tangkhul, the reflex is /-um/, but the Huishu reflex is /-ɐm/ (except for two apparently irregular examples, ‘hide’ and ‘round’, where the reflex is /-ɐŋ/).

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (451) ‘add together’ | — | *kə.ŋə.rum | khə̀.ŋə̀.rùm | khə́.ŋə̀.rúm | — |
| (452) ‘back’ | — | *khum | khùm-khor | khùm-khor | ʔā.láʔ-khɐm |
| (453) ‘hide’ | — | *kə̀.ŋə̀.thum | khə̀.ŋə̀.thúm | khə́.ŋə̀.thùm | kə̄.nə̄.thêŋ |
| (454) ‘round’ | — | *kə.ŋum | khə̀.ŋə̀.thúm | khə́.ŋə̀.thùm | kə̄.nə̄.thêŋ |
| (455) ‘three’ | *g-sum | *kə.thum | kə.thùm | kə̄.thûm | kə.thèm |
| (456) ‘warm’ | *lum | *kə.lum | khə̀.lùm | khə̄.lúm | khə.lèm |
| (457) ‘year’ | — | *tsiŋ-kum | tsiŋ-kúm | ðèŋ-kūm | tsɐ́ŋ-kêm |

### 5.4.5 *-ɐn

| PTB > PTk | > Tangkhul | Kachai | Huishu |
|---|---|---|---|
| *-an > *-an | > -ɐn | -ɐn | -ej |
| (after alveopalatals) | | -in | -ɐŋ |

The genealogy of PTk *-ɐn* is somewhat dubious, although the little evidence that exists suggests that it is primarily the reflex of PTB *-an.* In Standard Tangkhul, it remains *-ɐn,* and it is also normally reflected as /-ɐn/ in Kachai, but a different reflex /-in/ seems to appear after alveopalatals. In Huishu, the normal reflex seems to be /-ej/, but after alveopalatals, the reflex is /ɐŋ/ instead.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (458) ‘blow’ | — | *-phɐn | kə̀.phɐn | kə̄.phɐ́n | phēj-kə̄.tsèjʔ |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (459) 'curry/green vegetable' | *han | *hɐn | hɐn | ā.hɛ̀n | — |
| (460) 'expect' | — | *kə.ci.hɐn | kə̀.cì.hɛ́n | kɔ́.tɕì.hɔ́n | kə̄.tsɛ́.hɛ̀j |
| (461) 'sharp' | — | *kə.tsɐn | kə̀.tsɛ́n | — | kə̄.tsɛ̀j |

Unfortunately, the two roots with this rhyme and with root-initial alveopalatals are homophonous and do not overlap in their Kachai and Huishu reflexes:

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (462) 'back' | — | *kə̀.ʃɐn | kə̀.ʃɐn | kə̀.ʃin | — |
| (463) 'clothes' | — | *kə.ʃɐn | kə̀.ʃɐŋ | — | ʔā.phîk-kə̄.sɛ̀ŋ |

### 5.4.6 *-an

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-an > *-an > -an | -on | -ɐŋ |

PTk *-an*, like PTk *-am*, is poorly attested, and shows irregular patterning. It is reflected as Tangkhul /-ɐn/, Kachai /-on/, Huishu /-ɐn/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (464) 'cross' | — | *kə.kan | kə̀.kan | kə̄.kòn | — |
| (465) 'hand/arm' | *wan | *ʔa.pan | ʔà.pàŋ | ʔā.pón | — |

**(465)** The velar nasal coda in the Tangkhul form is almost certainly an irregular innovation. The original coda is **-n*, as suggested by the PTB reconstruction and data from other languages in the group: Phadāng *pan*, Champhung *ʔəpan*, Marām *chabɐn*.

### 5.4.7 *-in

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-in > *-in > -in | -ɐn | -ɐŋ |

Despite being represented by only two etyma, PTk **-in* seems to have an unambiguous history. It reflects PTB **-in* and is reflected as /-in/ in Standard Tangkhul and /-ɐn/ in Kachai and *-ɐŋ* in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (466) 'liver' | *m-sin | *ʔa.mə.thin | ʔa.mə.thin | ʔā.mə̄.thɐ̄n | ʔa.mə̀.thɛ̀ŋ |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (467) 'ripe/well-cooked' | *min | *kə.min | khə̀.mìn | khə̄.mɛ́n | khə́.mɛ̀ŋ |

### 5.4.8 *-on

| PTB > PTk > Tangkhul | | Kachai | Huishu |
|---|---|---|---|
| ? | > *-on > -on | on, ɐn | -ɐŋ |

The PTk *-on* rhyme reconstructed here is supported by very weak evidence. Curiously, most of the exemplars have the same PTk onset (*c-), and it seems entirely possible that these cognate sets actually belong to two or three different rhyme categories. The paucity of Huishu cognates makes it difficult to make a definite assignment, so they are left here until a better analysis presents itself. These etyma are grouped together based upon their Standard Tangkhul reflexes (with the /-on/ rhyme) but show two different rhyme-reflexes in Kachai.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (468) 'clothes' | — | *kə.con | kə̀.con | — | — |
| (469) 'flower' | *wan | *ʔa.won | ʔà.wón | ʔə̄.vɐ̄n | ʔá.və̄.vɐ̄ŋ-rɐ̄ |
| (470) 'help' | — | *kə.ŋə.con | khə̀.ŋə̀.con | khə́.ŋə̀.tɕon | — |
| (471) 'sister (older)' | — | *ʔa.con | ʔa.con | — | — |

**(468)** In Tangkhul, this etymon can mean either 'clothing' or 'cloth'. Other reflexes include the (irregular) Khangoi *kəɟol*, the (regular) Phadāng *kəɟon*, both glossed as 'cloth' by McCulloch (1859), and possibly the (irregular) Kachai form *kə̀.tɕìn* 'clothes'.

**(469)** Other reflexes include Phadāng *on* and Champhung *abun*.

**(471)** Cognates to this Tangkhul form include Phadāng *icon* 'sister' and possibly Khangoi *iɟoi* 'older sister' and Kachai *hī-tɕi* 'older sister; sister-in-law'.

### 5.4.9 *-un

| PTB > PTk > Tangkhul | | Kachai | Huishu |
|---|---|---|---|
| ? | > *-un > -un | -un | -ɐŋ |

The PTk *-un* rhyme is supported by only two examples, which are sufficient to establish the existence of the rhyme in Tangkhul but are insufficient to ascertain its PTB origins. It is reflected as /-un/ in both Standard Tangkhul and Kachai.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (472) ‘corpse’ | — | *ʔa.ŋun | ʔa.ŋúŋ | ʔā.ŋùŋ | — |
| (473) ‘join’ | — | *kə.ŋə.sun | khə̀.ŋə̀.sun | khə́.ŋə̀.sún | kə̄.nə́.sə̀ŋ |

### 5.4.10 *-ɐŋ

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-aŋ > *-ɐŋ > -ɐŋ | -a | -o |

PTk *-ɐŋ*, the principal reflex of PTB *-aŋ*, is unexpectedly rare in the Tangkhul Languages, given the large number of roots that can be reconstructed with the *-aŋ* rhyme at the PTB level. The correspondences for its reflexes also seem somewhat uneven, with Standard Tangkhul preserving /-aŋ/, Kachai reflecting it as /-a/ in most cases, and Huishu typically showing /-o/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (474) ‘clan’ | — | *ʃɐŋ | ʃə̀ŋ | ʔā.ʃā | — |
| (475) ‘cook’ | *klaŋ | *tlɐŋ | — | — | khə̄.lò |
| (476) ‘dream’ | *maŋ | *ʔa.mɐŋ | mə̀ŋ | ʔā.mà | sə́.mó |
| (477) ‘drink’ | — | *kə.mɐŋ | khə̀.mə̀ŋ | — | khə̄.nùŋ |
| (478) ‘enter’ | — | *kə.tsɐŋ | kə̀.tsɐŋ | khə̄.ðà | rē-kə̄.tsô |
| (479) ‘fall (from a height)’ | *klaŋ | *tlɐŋ | — | — | kh.ló-kə̄.sò |
| (480) ‘penis’ | — | *ʃɐŋ | ʃɐŋ-kuj | — | ʔá.só |
| (481) ‘pine (tree)’ | *taŋ | *mə.tɐŋ | mə.tɐŋ | ŋə̄.tà | — |
| (482) ‘thou’ | *naŋ | *nɐŋ | — | nə̀ŋ | nô |

### 5.4.11 *-eŋ

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-aːŋ > *-eŋ > -eŋ | -eŋ | -i, -e |

Of the few PTk roots showing the *-eŋ* rhyme, only one (‘lightweight’) can be assigned a PTB origin at this point. It is possible that the other etyma in this group also reflect (directly or indirectly) the PTB *-aːŋ* rhyme. This rhyme persists as /-eŋ/ in Standard Tangkhul and Kachai, but becomes /-e/ (normally) or /-i/ (after *v-) in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (483) ‘dry’ | — | *kə.theŋ | kə̀.theŋ | kə̄.thèŋ | kə̄.thē |
| (484) ‘finger/toe’ | — | *-mə.reŋ | -mə̀.reŋ | — | -mə̀.rē |
| (485) ‘hunt’ | — | *khə.reŋ | khə̀.reŋ | khə̄.réŋ | khə.rê |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (486) ‘lightweight’ | *yaːŋ | *kə.ŋə.vɛŋ | khə̀.ŋə̀.vèŋ | khə́.ŋə̀.vēŋ | kə̄.nə̄.vî |

### 5.4.12 *-iŋ

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-iŋ > *-iŋ > -iŋ | -ɐŋ | -ɐŋ |

In contrast to the non-high vowel plus nasal coda rhymes, PTk *-iŋ and *-uŋ are both very well attested and are easy to assign to PTB antecedents. PTB *-iŋ, in predictable fashion, becomes PTk *-iŋ, which is retained in Standard Tangkhul but which becomes /-ɐŋ/ in both Kachai and Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (487) ‘alive’ | *s-riŋ | *kə.riŋ | khə̀.rìŋ | khə̄.réŋ | khə̄.rèŋ |
| (488) ‘name’ | *r-miŋ | *ʔa.miŋ | ʔà.mìŋ | ʔa.mêŋ | ʔa.mèŋ |
| (489) ‘sky/heaven/rain’ | — | *kə.tsiŋ | kə̀.tsiŋ | kə̀.ðèŋ | ʔā.kə̄.tsèŋ |
| (490) ‘stand’ | — | *kə.ŋə.niŋ | khə̀.ŋə̀.nîŋ | khə́.ŋə̀.nēŋ | — |
| (491) ‘think (v.t.)’ | — | *kə.pə.niŋ | kə̀.phə̀.niŋ | kə́.phə̀.nɐŋ | — |
| (492) ‘tree/wood’ | *siŋ | *ʔa.thiŋ | thiŋ | ʔā.thèŋ | ʔā.thɐŋ |
| (493) ‘year’ | — | *tsiŋ-kum | tsiŋ-kúm | tsèŋ-kūm | tséŋ-kêm |

### 5.4.13 *-oŋ

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-uŋ > *-oŋ > -oŋ | — | -u |

There is only one example supporting the reconstruction of Proto-Tangkhul *-oŋ, but the evidence supporting this reconstruction is quite strong.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (494) ‘monkey’ | — | *na-joŋ | nà-jòŋ | — | ʔa.jù |

**(494)** Other reflexes of this PTk form include Khangoi *nai-joŋ*, Phadāng *ni-joŋ*, Champhung *khəjo*, N. Tangkhul *nəjoŋ*, and C. Tangkhul *nəjoŋ*. This form has cognates in a number of other Kamarupan language families: KUKI-CHIN Anal *joŋ*, Kuki Thado *joŋ*; ZELIANGRONG Liangmai *taʒoŋ*, Marām *saʒoŋ*, Khoirao *kaɟoŋ*, Nruanghmei *zou*, Puiron *kajoŋ*; OTHER Meithei *joŋ*, Maring *jeuŋ*. These forms most likely reflect a nasal-final variant *yuŋ of the PTB root *yuk ‘monkey’. If so, it would be an additional example of an already well attested pattern of variation (Matisoff 2003:520-525).

#### 5.4.14 *-uŋ

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **-uŋ* > **-uŋ* > *-uŋ* | *-uŋ, -ɐŋ* | *-uŋ,* (*-ej*) |

PTk **-uŋ* is perhaps the least surprising of the nasal coda rhymes. PTB **-uŋ* is retained intact as /-uŋ/ in all of the Tangkhul languages, with the exception of a few irregular forms in Kachai.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (495) 'correct' | — | **kə.mə.ʃuŋ* | *khə̀.mə̀.ʃùŋ* | *khə́.mə̀.ʃúŋ* | *kə̄.mə̄.sūŋ* |
| (496) 'heart' | **m-luŋ* | **mə.luŋ* | *mə̀.lùŋ* | *mə̀.lúŋ* | *ʔá.mə̀.lúŋ* |
| (497) 'mountain' | — | **kə.phuŋ* | *kə̀.phùŋ* | *kə̀.phúŋ* | *ʔá.kə́.phùŋ* |
| (498) 'pound (v.t.)' | — | **kə.ruŋ* | *khə̀.ruŋ* | *khə̄.ðèŋ* | — |
| (499) 'red' | — | **kə.huŋ* | *kə̀.húŋ* | — | *kə̀.mə̀.hêj* |
| (500) 'root' | — | **ʔa.ŋə.juŋ* | *ʔà.ŋə.juŋ* | *ʔā.ŋə̄.lèŋ* | *ʔá.nə.jùŋ* |
| (501) 'stone' | **r-luŋ* | **-luŋ* | *ŋə̀.luŋ* | *kə̀.lùŋ* | *sə.lûŋ* |

## 5.5 Rhymes with Liquid Codas

Unlike the nasal coda rhymes, those with liquid codas cannot be accurately reconstructed based only or primarily upon data from Standard Tangkhul since Standard Tangkhul does not preserve PTk form*-l. In these cases, the Huishu data is important, in that Huishu preserves PTk **-l* as a final nasal. Other Tangkhul languages like Champhung and Khangoi actually preserve PTk **-l* as /-l/, but less data is available for these languages.

The *r*-final rhymes are comparatively easier to reconstruct than those with lateral codas. While lateral codas became glides in Standard Tangkhul, Kachai, and Phadāng but become nasals in Huishu and are preserved in Champhung and Khangoi, rhotic codas are preserved as /-ɾ/ in Standard Tangkhul, Kachai, Champhung, and Phadāng and are lost in Huishu and Khangoi.

#### 5.5.1 *-al

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **-aːl* > **-al* > *-aj* | *-we* | — |

There are two forms with solid PTB etymologies that allow the reconstruction of PTk **-al*, which comes from PTB **-aːl* and becomes /*-aj*/ in Tangkhul and /*-we*/ in Kachai.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (502) 'defecate' | **baːl* | **kə.pal* | *kə̀.páj* | *kə̀.pwè* | — |
| (503) 'enemy/war' | **raːl* | **kə.ral* | — | — | — |

**(503)** Reflexes of this form have not yet been identified in Kachai or Huishu, but they are to be found in Tangkhul *raj* 'war/foe', Khangoi *rel* 'enemy', and Phadāng *rai* 'enemy'.

### 5.5.2 *-il

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-iːl > *-il > -i | -ɐ | -ɐŋ |

There is but one precious example of PTk *-il*—reflecting PTB *-iːl*—that has been identified up to this point. None of the example languages actually preserve the liquid as a liquid at this point, but a final liquid is attested in reflexes of this PTB etymon in many languages. The liquid is preserved as a nasal in Huishu /-ɐŋ/, but simply disappears in Standard Tangkhul (/-i/) and Kachai (/-ɐ/).

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (504) 'intestines' | *riːl | *ʔa.kə.ril | ʔa.khə̀.rì | ʔə̄.khə̀.ré | ʔa.khə.rêŋ |

### 5.5.3 *-ol

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-or, *-ul > *-ol > -uj | -we | -ɐŋ |

A somewhat better attested lateral-final PTk rhyme is *-ol.* This rhyme occurs in reflexes of words reconstructed at the PTB level with the rhymes *-or* and *-ul.* In Standard Tangkhul, it is reflected as /-uj/, and in Kachai the reflex is /-we/. There is unexplained variation in the place of articulation of the nasal coda in Huishu, with both /-ɐŋ/ and /-ɐn/ as reflexes.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (505) 'horse' | *kor | *si.kol | sì.kùj | sī.kwē | sɐŋ-kèŋ |
| (506) 'skin/bark' | *hul | *hol | sà-húj | — | ʔa.hèn |

**(505)** Additional reflexes include Khangoi *sigol,* Phadāng *sakoi,* Champhung *sagol,* N. Tangkhul *sakoi,* and C. Tangkhul *sakoi,* all 'horse'.

**(506)** Additional reflexes include Khangoi *aha,* Phadāng *ahoi,* Champhung *ahul,* N. Tangkhul *ahɯ,* and C. Tangkhul *ohoi,* all 'skin'.

### 5.5.4 *-ul

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-uːl, *-ul > *-ul > -u | -wi | -ɐŋ |

There are also three examples of PTk *-ul,* showing the same perplexing variation in Huishu reflexes. PTk *-ul* from PTB *-uːl* and *-ul* is reflected in Huishu as either /-ɐŋ/ or /-ɐn/, suggesting (perhaps) that it merged with the reflex of *-ol* at some intermediate point. In Standard Tangkhul and Kachai, the reflexes are perfectly distinct and regular: /-u/ and /-wi/ respectively.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (507) ‘snake’ | *s-b-ruːl | *pə.rul | phə́.rù | kə̄.phwí | ʔa.phə.rɛ̀ŋ |
| (508) ‘twenty’ | *m-kul | *mə.kul | mə̀.kù | mə̄.kwî | mə.kɛ̀n |
| (509) ‘village’ | — | *khul | khu | — | — |

**(507)** Other relfexes include Khangoi *phuru*, Phadāng *phui*, N. Tangkhul *phrɯ*, and C. Tangkhul *phrɯi*.

**(508)** Other reflexes include Khangoi *məku-het* and Phadāng *məkui*.

**(509)** Cognates to this Tangkhul form include Khangoi *khul* ‘village’, Champhung *khul*, C. Tangkhul *khui*, and Phadāng *khui* ‘village’. These forms are almost certainly cognates to, or borrowed forms of, Meithei *khul* ‘village’.

### 5.5.5 *-ɐr

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-ar > *-ɐr > -ɐr | -ar | -o |

PTB *-ar* became PTk *-ɐr*, which is reflected as Standard Tangkhul /-ɐr/, Kachai /-ar/ and Huishu /-o/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (510) ‘clean’ | — | *kə.thɐr | kə̀.thɐr | kə̀.thàr | — |
| (511) ‘fowl’ | *har | *ʔa.hɐr | hɛ̀r | ʔā.hár | ʔa.hò |
| (512) ‘new’ | *sar | *kə.thɐr | kə̀.cɛ̀r | kə̄.thár | kə̀.thô |
| (513) ‘sister (older)’ | *dzar | *ʔa.tsɐr | ʔa.tsɐr-vu | ʔa.ðār-ì | |
| (514) ‘white’ | *tsyar | *kə.cɐr | kə̀.cɐ́r | kə̄.tɕàr | — |

**(511)** Other members of this cognate set include Khangoi *ha* and Phadāng *her*, both ‘hen’.

**(512)** Other members of this set include Khangoi *kətha* and Phadāng *kəther-u-e*, both ‘new’.

**(514)** Phadāng *koecer-u-e* ‘white’ is also a reflex of this root.

### 5.5.6 *-ar

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| ? > *-ar > -ar | -or | -a |

PTk *-ar* is quite well attested, but it seems impossible, at this point, to specify its PTB origin since PTB roots have not yet been reconstructed for any of the PTk roots that are here assigned to this rhyme.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (515) ‘able’ | — | **kə.rar* | *khə̀.rár* | *sū-khə̄.lār* | — |
| (516) ‘lung’ | — | **ʔa.phar* | *ʔà.phar* | *ʔā.phòr* | — |
| (517) ‘mushroom’ | — | **war* | *var* | *hór-tsɐ́* | *ʔá-và* |
| (518) ‘old’ | — | **kə.sar* | *kə̀.sàr* | *kə̄.sór* | *kə̄.sà* |

**(518)** Phadāng *kəsar-o* ‘old’ is also a reflex of this PTk root.

### 5.5.7 *-or

| PTB | > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|---|
| **-oːr, *-uːr, *-war* | > **-or* > *-or* | *-or, -ɐ* | *-u* |

PTB **-oːr* and some instances of**-uːr* become PTk **-or*, which is reflected as Tangkhul /-or/, Kachai /-or/, and Huishu /-u/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (519) ‘bark’ | **koːr* | **thiŋ-kor* | *thiŋ-kor* | *thɐ̀ŋ-kɐ̄* | *ʔā.thɐ́ŋ-kù* |
| (520) ‘mouth’ | **muːr* | **mor* | *khə̀.mor* | *mòr-sɐ́* | *ʔa.mū-ʃû* |
| (521) ‘sell’ | **ywar* | **jwor* | *khə̀.jòr* | *khə̄.wōr* | *khə.jù* |

**(520)** Other members of this set include Champhung *khəmɐr*, Khangoi *kəmo*, and Phadāng *mɐr-su*.

**(521)** Other reflexes of the same PTk root include Khangoi *jo-ma* and Phadāng *jo-lo*, both ‘sell’.

### 5.5.8 *-ur

| PTB | > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|---|
| **-or, *-uːr* | > **-ur* > *-ur* | *-ur* | *-u* |

Some instances of PTB **-or* and **-uːr* were reflected as **-or* in PTk. This PTk rhyme yields Standard Tangkhul /-ur/, Kachai /-ur/, and Huishu /-u/.

| | PTB | | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|---|
| (522) ‘hole/anus’ | **kor*<br>**kwar* | ∼ | **-khur* | *khə̀.ráŋ-khùr* | *pù-ʃít-khùr* | — |
| (523) ‘follow’ | — | | **thi-kə.ʃur* | *thi-kə̀.ʃur* | *thī-kə̄.ʃur* | — |
| (524) ‘sour’ | **suːr* | | **thur* | *kə̀.thur* | *kə̄.thùr* | *kə̄.thū* |

**(522)** The PTB root **kor* actually means ‘hole’, and this is probably basic meaning of the PTk root **khur* as well. However, both the Tangkhul and Kachai forms given here mean ‘anus’.

## 5.6 Rhymes with Stop Codas

The evidence for the various stop coda rhymes remains scant at this point. The reconstructions given here rely heavily upon data from Standard Tangkhul and Kachai, since most of these rhyme contrasts have been neutralized in Huishu. Huishu preserves **-p* after non-low vowels. All other PTk stop codas become glottal stop. Many of the vocalic contrasts are also collapsed in Huishu: most PTk rhymes with **-t* are reflected as Huishu /-ej?/. However, both Standard Tangkhul and Kachai are quite conservative in their treatment of these rhymes.

### 5.6.1 **-ɐp*

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **-ap* > **-ɐp* > *-ɐp* | *-ap* | *-aʔ* |

PTB **-ap* becomes PTk **-ɐp*, which becomes Tangkhul /-ɐp/, Kachai /-ap/, and Huishu /-aʔ or /-eʔ/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (525) 'have the ability' | — | **kə.ʃɐp* | *kə̀.ʃɐp* | *kə̄.ʃāp* | *kə.saʔ* |
| (526) 'snot' | **s-nap* | **nɐp* | *nɐp-tiŋ* | — | *ʔa.nàʔ* |
| (527) 'stick (v.)' | — | **kə.nɐp* | *khə.nɐp* | *khə.nap* | *khə.nàʔ* |
| (528) 'tie' | | **kə.kə.lɐp* | *kə̀.kə̀.lɐp* | — | *kə̄.khə̄.réʔ* |

### 5.6.2 **-ap*

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **-ap, *-aːp* > **-ap* > *-ap* | *-ap, -op* | *-aʔ* |

PTk **-ap* come from PTB **-ap* and **-aːp*. The Tangkhul reflex is /-ap/. In Kachai, the vowel assimilates to the coda, becoming /-op/, except when it is preceded by a palato-alveolar (in which case it also remains /-ap/). In Huishu, the coda becomes a glottal stop, yielding /-aʔ/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (529) 'cry/weep' | **krap* | **kə.cap* | *kə̀.càp* | *kə̀.tɕáp* | *kə̀.tsàʔ* |
| (530) 'rib' | — | **ʔa.rap* | *ʔa.rap* | *ʔā.róp* | *ʔa.raʔ-thɐŋ* |
| (531) 'shoot' | **gaːp* | **kə.kap* | *kə̀.kap* | *kə̄.kōp* | *kə̀.kàʔ* |

**(529)** Phadāng *cɐp-lo* and Khangoi *chət-lo*, both 'weep', are reflexes of the same PTk root.

### 5.6.3 *-ip

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-ip > *-ip > -ip | -ip | -ɐp |

Though the evidence is scarce and fragmentary, it seems that PTB *-ip* became PTk *-ip*, which is reflected as Tangkhul /-ip/, Kachai /-ip/, and Huishu /-ɐp/. What is especially curious about this rhyme, though, is that Huishu seems to have retained PTk *-p* as /-p/ rather than neutralizing it to glottal stop, as occurs with the other oral stops and *-p* in other environments.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (532) 'sleep/lie down' | *yip | *kə.jip | — | khə̄.jíp | khə.jêp |
| (533) 'scale (of fish)' | *lip | *ʔa.rip | ʔà.rìp | — | — |

### 5.6.4 *-op

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-ap > *-op > -op | -ip | -ɐp |

A similarly frustrating correspondence set (with a cardinality of one) is the one reconstructed here as PTk *-op.* Here, Huishu also seems to conserve *-p* in a most disturbing fashion, reflecting this rhyme as /-ɐp/. Tangkhul and Kachai, more predictably, reflect it as /-op/ and /-ip/, respectively.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (534) 'sew/needle' | *gaːp (?) | *khop | kə̀.khop | kə̄.khīp | kə̄.khɐ́p |

### 5.6.5 *-up

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| ? > *-up > -up | -up | -ɐp |

The comparative evidence for PTk *-up* is scant at best. Based on the single etymon given here, PTk *-up* (whose earlier history is unknown) is reflected as Tangkhul and Kachai /-up/ and Huishu *-ɐp.*

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (535) 'finish' | — | *kə.kup | kə̀.kùp | kə̄.kūp | kə̄.kɐ̀p |

### 5.6.6 *-ɐt

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-at > *-ɐt > -ɐt | -ɐt | -ejʔ |

PTB *-at* became PTk *-ɐt*, which becomes Tangkhul and Kachai /-ɐt/ and Huishu /-ejʔ/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (536) 'cut (vegetables)' | — | **kə.kə.tɐt* | *khə̀.kə̀.tɐ̀t* | *ká.kə̀.tɐ̄t* | *kə.kə.kéjʔ* |
| (537) 'kill' | **sat* | **-kə.thɐt* | *sá-kə̀.thɐ̀t* | *sù-kə̀.thɐ́t* | *jà-ká.thèjʔ* |

### 5.6.7 *-at

| PTB | > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|---|
| **-at, *-aːt* | > **-at* > *-at* | *-at* | *-ejʔ* |

PTB **-aːt* and some instances of **-at* (perhaps those in syllables with a medial) became PTk **-at.* It remains /-at/ in Tangkhul and Kachai, but becomes /-ejʔ/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (538) 'burst' | — | **kə.wat* | *khə̀.vàt* | *khə̄.wāt* | *khə̀.vejʔ* |
| (539) 'eight' | **b-r-gyat* | **ci.ʃat* | *cì.ʃàt* | *tɕī.ʃit* | *tə.tsèjʔ* |
| (540) 'rice (cooked)' | **dzya-t* | **tsat* | *tsat* | *ʔā.ðōt* | — |

### 5.6.8 *-et

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **-iːt* > **-et* > *-et* | *-ɐt* | *-ejʔ* |

PTB **-iːt* becomes PTk **-et* which becomes, in turn, Tangkhul /-et/ and Huishu /-ejʔ/. It is difficult to determine the regular Kachai reflex, since both /-et/ and /-ɐt/ are attested.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (541) 'soft (to touch)' | — | **kə.ŋə.pet* | *khə.ŋə̀.pet* | *khə́.ŋə̀.pōt* | *kə̄.nə̄.véjʔ* |
| (542) 'squeeze/ extinguish' | **s-miːt* | **kə.ci.met* | *kə̀.ʃì.met* | *kə́.ʃi.mɐ̄t* | *kə́.sə̀.mèjʔ* |

### 5.6.9 *-it

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| **-əy-t* > **-it* > *-it* | *-ɐt* | *-ejʔ* |

There is, at this point, only one known example of the PTk rhyme **-it,* which reflects PTB **-əy-t.* It becomes Tangkhul **-it,* Kachai **-ɐt,* and Huishu *ejʔ.*

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (543) 'heavy' | *s-rəy-t | *kə.rit | khə.rìt | khə̄.rə́t | khə.rèjʔ |

### 5.6.10 *-ot

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-uːt > *-ot > -ot | -ɐt | -oʔ |

The reconstruction of PTk *-ot*, as a reflex of PTB *-uːt*, should be considered tentative pending the emergence of more data. At this point, neither of the roots reconstructed with this rhyme has known cognates in Huishu, making it difficult to know if the category given here is meaningful or spurious. The roots have been reconstructed this way based upon their Tangkhul reflexes, which have the /-ot/ rhyme. The Kachai rhymes, however, are not regular. It is hoped that further data will help solve this problem.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (544) 'ashes' | — | *hwot-la | hòt-à | fɐ̄t-lū | — |
| (545) 'banana' | — | *-mot-thej | mót-thej | — | ʔā.mōʔ-thù |
| (546) 'scratch/scrape' | *kuːt | *-khot | kə̀.khōt | khə́.mə̀.khɐ̄ | — |

**(545)** Other reflexes of this form include Khangoi *motha*, N. Tangkhul *mot-thai*, and C. Tangkhul *mot-thəi*. Cognates in other languages include S. Tangkhul *mɯt*, Chairel *mot*, Maring *muthai*, Khoibu *mothai*, Anal *mo*, Kuki Thado *mot*. This root seems to be widespread in Tangkhul, Kuki-Chin, and closely allied languages, but is not a general PTB root.

### 5.6.11 *-ut

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-əw-t > *-ut > -ut | -ut | -uʔ, -ejʔ |

PTk *-ut* becomes /-ut/ in Tangkhul and Kachai. The regular Huishu reflex is indeterminate since both /-uʔ/ and /-ejʔ/ seem to be attested as reflexes.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (547) 'brush (teeth)' | — | *kə.kə.ʃut | kə̀.kə̀.ʃùt | kə́.kə̀.ʃút | kə̄.kə̄.séjʔ |
| (548) 'leech' | *k-r-p$^{w}$at | *mə.hwut | mə̀.hùt | — | — |
| (549) 'smoke' | *kəw-t | *mej-khut | mej-khùt | mə̀.khút | ʔā.mú-khùʔ |

### 5.6.12 *-ɐk

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-ak > *-ɐk > -ɐk | -ak | -oʔ |

PTk *-ɐk* comes from PTB *-ak* and becomes Tangkhul /-ɐk/, Kachai /-ak/ (except after labials, where it becomes /-ok/), and Huishu /-oʔ/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (550) 'ashamed' | *g-yak | *kə.kə.jɐk | kə̀.khə̀.jɐk | kə́.khə̀.jak | kə̄.khə̄.jōʔ |
| (551) 'big' | — | *kə.hɐk | kə̀.hɐ́k-kə̄.hōʔ | — | kə̄.hōʔ |
| (552) 'breath' | — | *ʔa.khɐk | ʔa.khɐ́k | — | ʔā.khōʔ |
| (553) 'fine, be' | — | *kə.mə.nɐk | khə̀.mə̀.nɐ̀k | khə́.ŋə̀.nák | — |
| (554) 'weave' | *rak | *kə.rɐk | khə̀.rɐ̀k | khə̄.ðák | khə́.rōʔ |

### 5.6.13 *-ak

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-aːk > *-ak > -ak | -ak | -oʔ |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (555) 'brother-in-law' | *s-maːk | *ʔa.mak | ʔi.mak | ʔā.mok-ū | ʔú.maʔ |
| (556) 'fast/quick' | — | *kə.thak | kə̀.thàk | kə̄.thók | — |

### 5.6.14 *-ek

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-yak > *-ek > -ek | -ek | -ejʔ |

PTB *-yak* becomes PTk *-ek*, which is reflected as Standard Tangkhul /-ek/, Kachai /-ek/, and Huishu /-eʔ/.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (557) 'green' | — | *kə.mə.tek | khə̀.mə̀.tek | khə́.mə̀.té̱k | — |
| (558) 'lick' | *m-lyak | *kə.mə.lek | khə̀.mə̀.lek | khə́.mə̀.lē̱k | kə̀.mə̀.léʔ |

**(557)** Phadāng *kəntek-oe* is also a reflex of this PTk root.

### 5.6.15 *-ik

| PTB > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|
| *-ik > *-ik > -ik | -ɐk | -oʔ |

PTB *-ik* became PTk *-ik*, which was preserved in Standard Tangkhul but became /-ɐk/ in Kachai and /-oʔ/ in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (559) ‘eye’ | *s-mik | *ʔa.mik | ʔa.mìk | ʔā.mɐ̄k | ʔā.mōʔ |
| (560) ‘louse’ | *s-rik | *ʔa.rik | rìk | ʔā.rɐ̄k | ʔa.roʔ |
| (561) ‘black’ | — | *kə.tsik | kə̀.tsìk | khə̄.ðɐ́k | kə̄.tsōʔ |
| (562) ‘burn’ | — | *kə.rik | khə̀.rìk | khə̄.ðɐ́k | — |
| (563) ‘lung/chest’ | — | *mə.thik-rɐ | mə.thik-rɐ | mə̄.thɐ̄k-rɐ́ | — |

**(559)** Other members of this set are Champhung *ʔəmak*, C. Tangkhul *omit*, Khangoi *ʔəmit*, and Phadāng *mik*.

### 5.6.16 *-ok

| PTB | > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|---|
| *-wak, *$^{w}$ak | > *-ok > -ok | -ak | -uʔ |

PTk *-ok* seems to find its origin in PTB *-ak* when it is preceded by medial *-w- or a labialized onset. It remains /-ok/ in Tangkhul, but becomes /-ak/ in Kachai and /-uʔ/ in Huishu.

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (564) ‘brain’ | — | *kow-ŋə.tlok | kúj-ŋə̀.tok | — | ʔa.ków-nə.lùʔ |
| (565) ‘emerge’ | *s-twak | *kə.ʃok | kə̀.ʃok | kə̄.ʃe | ʔú-kə̄.súʔ |
| (566) ‘pig’ | *p$^{w}$ak | *ʔa.hwok | hòk | ʔa.fák | ʔa.hùʔ |
| (567) ‘rat/rodent’ | *r-wak | *-rwok | ʃi.ok | ʃim-rɐ́k | ʔā.phə̄.jùʔ |

**(566)** Other members of this set include Champhung *ʔəvək*, N. Tangkhul *hok*, C. Tangkhul *hok*, Khangoi *huk*, Phadāng *hək*.

### 5.6.17 *-uk

| PTB | > PTk > Tangkhul | Kachai | Huishu |
|---|---|---|---|
| *-uːk, *-ok | > *-uk > -uk | -uk | -uʔ |

PTB *-uːk* and *-ok* merge as PTk *-uk*, which is preserved intact in both Tangkhul and Kachai but which becomes /-uʔ/ in Huishu.

| | PTB | | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|---|
| (568) ‘belly’ | *puːk<br>*wuːk | ∼ | *ʔa.wuk | ʔà.wùk | wúk- | ʔā.wùʔ |

| | PTB | PTk | Tangkhul | Kachai | Huishu |
|---|---|---|---|---|---|
| (569) 'borrow' | — | **kə.ʃuk* | *kə̀.ʃùk* | *kə̄.thūk* | *kə̄.tù?* |
| (570) 'deep' | — | **kə.thuk* | *kə̀.thuk* | *kə̄.thūk* | *kə̄.tù?* |
| (571) 'knee' | — | **?a.khuk* | *?à.khùk* | *phì-khūk* | — |
| (572) 'six' | **d-k-rok* | **tə.ruk* | *thə̀.rùk* | *ʃə́.rúk* | *sə.ru?* |

**(568)** Other reflexes of the same root include Khangoi *?apuk* (preserving the plosive onset reconstructed for PTB), and Phadāng *uk*, both 'belly'.

**(571)** This set also includes Khangoi *khu-ɟeŋ* and Phadāng *kuk-saw*, both 'knee'.

# 6 Conclusions

The Tangkhul languages comprise a rigorously definable subgroup within Tibeto-Burman, and are probably allied (within TB) most closely to Maring and the Kuki-Chin languages, and somewhat less closely to the Zeliangrong languages and Meithei. These impressions should be verified through further comparative work among the languages of the Burma-India border region, but it seems that even if these language subgroups do not form a larger genetic group within the Tibeto-Burman family, they nevertheless participate in a single continuum of areal features.

Whatever the exact genetic position of the Tangkhul languages may be, their value to comparative Tibeto-Burman studies and the theory of language change is considerable. The relative morphological conservatism of Tangkhul languages provides a number of possible insights into the Proto-Tibeto-Burman prefix system. Tangkhul languages also present a number of interesting and almost untapped case-studies in the re-emergence of productivity of formerly unproductive morphology (for example, the PTk **ci-* prefix and the *phə-* prefix in Kachai). Likewise, the phonological developments in individual daughter languages, especially Huishu (with its emergent velar stops after high vowels), provide strong arguments for a perceptually driven model of sound change that is not motivated by a functional teleology.

At present, though, our knowledge of the Tangkhul languages is still woefully inadequate. This study could only touch upon a few of the problems that present themselves in the historical comparison of these languages, and of those problems, could only decisively solve a minority. The data raise many tantalizing questions that have not been answered here:

- What is to be made of the tonal correspondences that exist, albeit rather irregularly, between Tangkhul languages? Can tone be reconstructed for the Tangkhul family as a whole? If so, what is the nature of the reconstructible tone system?

- How does the Tangkhul aspiration rule relate to the similar voicing alternation shown by Jingpho prefixes? Are both of these morphophonological patterns inherited from the proto-languages? If so, how was this alternation expressed at the PTB level? If not, what are the conditions that lead to the development of this type of dissimilatory morphophonological process?

- What is the correct account of the aspirated/unaspirated distinction that emerged in the PTk reflexes of PTB voiceless plosives? Is this same innovation shared by any other TB languages?

- Why did Kachai and especially Huishu innovate so much more readily than Standard Tangkhul or the dialect of Ukhrul? Was this rapid innovation the product of language contact, or of some other sociolinguistic factor, or was it simply the result of a coincidence of several small accidental developments?

There are other questions that are less salient, but that are nevertheless essential to a full understanding of the Tangkhul language family. For example, the phonological correspondences between PTk and daughter languages other than Standard Tangkhul, Kachai, and Huishu have yet to be worked out, and numerous details of the construction remain tenuous (for example, the reconstruction of PTk **r-*).

What have been established here are the most obvious of the phonological correspondences that relate PTB to PTk and most of the sound changes that relate PTk to three daughter languages, as well as an explicit set of criteria for identifying descendents of PTk as reconstructed here, and a modest collection of reconstructed PTk lexical items. The outstanding problems, of which there are many, are left as avenues for future research.

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