

LABIODENTAL NASAL *ɱ* IN THE ANGAMI AREA

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Abstract: The labiodental nasal stop is almost never contrastive in the world's languages and is typically only found as a predictable nasal consonant allophone before labiodentals /f v/. Here we present the results of a detailed survey of so-called Angami Naga languages spoken in northeast India and show that the presence of a labiodental nasal is characteristic of these—both as an allophone with an unusual distribution but also in some cases as a phoneme. There is also detailed discussion of the labiodental nasal's historical development and evolution

Keywords: Tibeto-Burman languages, Angami, Naga, labiodental nasal

1. INTRODUCTION

Tibeto-Burman languages provide a useful resource for the description and analysis of unusual segmental phenomena not usually considered to be typical of the wider Asian region. Previously, Hajek (2006), for instance, outlined the diachronic development and synchronic presence of labial-velar stops and nasals in a small number of Tibeto-Burman languages, including Angami, a Naga language spoken in northeast India. Here we report on the unusual presence of the labiodental nasal *ɱ* in Angami and other closely related Angami Naga languages in the same geographical area. We outline the synchronic distribution and behaviour of *ɱ* as well as its interesting typological characteristics. Previously, only one other language, spoken in Africa, has been identified as having /*ɱ*/ in its phonemic inventory. But evidence given here indicates *ɱ* is also a phoneme in a number of Angami Naga languages. With respect to Angami itself, there is some dispute about the status of *ɱ* in the most prestigious variety of that language, but in at least one other dialect of Angami *ɱ* is certainly allophonic with a distribution very different to that normally reported for that sound elsewhere in the world's languages. We also outline allophonic processes involved, the implications these have for phonological analysis, as well as the historical sources of labiodental nasals in the Angami area. The appearance of *ɱ* is shown to be part of a wider process of labiodentalization that has affected all labial consonants in these languages.

2. LABIODENTAL *ɱ* ACROSS THE WORLD'S LANGUAGES

Labiodental *ɱ* is unusual amongst nasals across different places of articulation, e.g. *m n ŋ ɱ*, in that it occurs in such vanishingly rare fashion as a contrastive segment across the world's languages. According to current generally accepted knowledge (eg Ladefoged and Maddieson 1996), only one language, Kukuya (or Teke, spoken in the Congo) is known to have /*ɱ*/ as part of its phonemic

inventory. [ŋ] does, however, appear frequently as a predictable allophone through nasal assimilation before labiodental oral fricatives, /f v/, in many languages of the world, e.g. English /lɪnf/ [lɪmf] ‘lymph’, /kænvɪ/ [kæŋvɪ] ‘Canvey (Island)’. It is of course typically part of a much wider process and well known phenomenon of assimilation that sees all nasals sharing the place features of the following obstruent, e.g. English [lɪmp] ‘limp’, [lɪnt] ‘lint’ and [lɪŋgə] ‘linger’. Given that its appearance is usually so restricted in distribution (i.e. before *f v* only), little attention is given to the appearance and phonological behaviour of *ŋ* in other languages that do not involve nasal + consonant cluster assimilation.

3. LABIODENTAL *ŋ* IN THE ANGAMI-SPEAKING AREA

3.1. *Angami and other Angami Naga languages: overview and transcription*

Angami is one of the many Naga languages spoken primarily in Nagaland, and surrounding areas, in northeast India. Angami is part of the Angami-Pochuri subgroup within Naga, itself within the Kuki-Chin-Naga branch of Tibeto-Burman (Gordon 2005). Angami has a number of different dialects, e.g. Kohima, Kehena and Khonoma. The Kohima dialect is the best known and forms the basis of the standard variety of Angami. Closely related to Angami and spoken in the same general area are other Angami Naga languages: Rengma (also known as Northern Rengma) and Ntenyi (Southern Rengma), Chokri, Mao and Sumi.¹ While we have most information about labiodental *ŋ* in Angami, there is also reliable evidence of it occurring in Ntenyi, Rengma and Chokri. There is no trace of it elsewhere in the Angami-Pochuri sub-group, e.g. Sumi.

Angami is relatively well documented, if not described. An outline grammar of the Khonoma dialect was published in the late 19th century and reading materials for the Kohima dialect available already in the early 20th century (Marrison 1967 for details). More recently, we have detailed information, of varying quality, about the phonetics/phonology of different dialects of Angami, i.e. Burling (1960), Marrison (1967) based on earlier sources, Ravindran (1974), Matisoff (1980), and Giridhar (1980). Our focus here is on information made available since 1960. With the exception of Chokri for which we have a detailed phonological description (Bielenberg and Nienu 2001), there is only limited data available for Ntenyi and Rengma.

An issue in the identification of *ŋ* in the Angami and related languages is the frequent use of the digraph *mv* to represent the labiodental nasal. While *mv* is typographically convenient, it aligns visually with other digraphs *pfh*, *pf* and *bv* used for true affricates /pʰ/, /pf/ and /bv/. As a result, readers may assume it is

¹ For sake of convenience here we use the notional term 'Angami Naga' to refer to Angami and other closely related Naga languages which form a dialect chain with it and are spoken in the same geographical area.

also phonetically some kind of nasal-oral contour segment or affricate, *m̥v*, rather than a true nasal stop *m̥*.

3.2 Angami: *m̥*, phoneme or allophone?

While the presence of labiodental *m̥* in Angami itself is not in doubt, there is disagreement amongst sources that describe it as to its phonemic status or otherwise. Lack of agreement appears to reflect two different factors: (a) the use of only partly overlapping lexical material; as well as (b) differences in analysis.

The first modern phonemic analysis of Angami is provided by Burling (1960) who maps out all consonant initials in the Kohima dialect, as in (1) where his original symbolization is maintained:

(1)	p	f	t	c	k	pr	kr	r	l	w	s
	h	y									
	ph	pf	th	ch	kh	phr	khr	rh	lh	wh	
	b	v	d	j	g						
	m	<i>m̥</i>	n	<i>ñ</i>	<i>ŋ</i>						
	mh	nh	<i>ñh</i>								

He then discusses the status of each member of the set, either as a single unit phoneme or as a cluster. While /Cr/ sequences are treated as biphonemic, all other units in (1) are analysed as single phonemes. We note his inclusion of the single symbol, *m̥*, which he then describes explicitly as a labio-dental nasal phoneme, alongside four other nasal stops /m n ɲ ŋ/. Even more unusually, it is reported to have two allophones: fully labiodental [*m̥*] which occurs in word-initial position and a more complex [*mm̥*] that occurs word-medially between vowels. In the latter context “...it has a slight bilabial nasal onset, followed by a labio-dental nasal, giving it a phonetic quality parallel to pf” (p.53). The examples of /*m̥*/ in his wordlist are /*ŋum̥ə*² ‘enemy’ /*m̥ə*/ ‘to gather’, /*them̥ə*/ ‘goat’, /*them̥ə*/ ‘star’. Burling (1960) does not provide minimal pairs to justify any of his phonemes, but it appears his analysis is based solely on the attached wordlist (approximately 440 items). Perusal of the wordlist confirms that while /*m̥*/ only appears before /ə/, and Burling’s (1960) justification for phonemic status for /*m̥*/ appears to be one apparent case of contrast with bilabial /m/, i.e. /*m̥ə*/ ‘to gather’ v. /*m̥əi*/ ‘tail’. If so, it appears this contrastive pair is problematic for some later sources on Angami, such as Matisoff (1980), given the only partial overlap of the post-nasal vowels: /ə/ is described as an unrounded mid central vowel, while in /əi/ the central vocalic element is very slight and brief before the high front vowel peak (see also Ravindran 1974 and below).

Marrison (1967) is next to provide information on labiodental *m̥* in the Angami-speaking area. In a large unpublished doctoral thesis he includes large comparative vocabularies of previously published and unpublished lexical

² Tonal diacritics are not included in any of our transcriptions here, since tone is not relevant to our presentation.

material for 31 Naga dialects/languages as well as seven neighbouring Tibeto-Burman languages. He does not attempt a full phonemicization for any language, but in addition to lexical materials he outlines in tabular form the full range of word-initial consonants and clusters for each. He is also explicit that in his orthographically oriented transcription system the digraph *mv* is a “voiced labiodental nasal”, i.e. *ɱ*, while *ü* is the central vowel /ə/. Specifically with respect to Angami he provides lexical data for two dialects, Kohima, the basis of the standard variety of Angami, and Khonoma. There is no trace of *ɱ* in his Khonoma material, although it has subsequently been reported (see below). But there are rare instances of it in Kohima: to our list we can add *themvü* ‘spindle’ and *ngumvü* ‘to hate’ which is clearly the same as Burling’s /ɱumə/ ‘enemy’. There is also no clear evidence of contrast with /m/, since expected /ə/, given by Burling (1960) and later sources, is often represented by *e* rather than *ü* and cannot be distinguished from true /e/. Although he also collected his own Kohima data, this discrepancy may be due to Marrison’s greater reliance on sources earlier than Burling (1960). These may have under-differentiated the vowel system or described a different sub-dialect of Kohima Angami.

Ravindran (1974) provides an explicit articulatory description of *ɱ* as a labiodental nasal, and, like Burling (1960), also treats it as contrastive in the Kohima dialect of Angami. However, his *m ~ ɱ* pairs (p.52) appear not to be fully contrasting, given different vowel sets:

(2)	<i>mi</i>	‘fire’	v.	<i>ɱə</i>	‘refuse’
	<i>mekra</i>	‘white ant’	v.	<i>ɱəkrə</i>	‘ewe’
	<i>themie</i>	‘man’	v.	<i>themɱə</i>	‘star’
	<i>rəmo</i>	‘hawk’	v.	<i>rəɱə</i>	‘bed-bug’ ³

Matisoff (1980) draws his Kohima Angami data from Marrison’s (1967) unpublished doctoral thesis, published sources, as well as a native speaker resident in California. In his brief phonological account of Kohima Angami he also uses the digraph *mv*, which he refers to explicitly as a ‘nasal labiodental’, while noting that Burling (1960) and Ravindran (1974) use the symbol *ɱ* to write the same sound.

Matisoff (1980) clearly differs from Burling (1960) and Ravindran (1974) with respect to the labiodental’s phonemic status: he considers it to be a predictable allophone of /m/ before /ə/ and in a footnote (p.7) notes that neither Burling (1960), Ravindran (1974) nor Marrison (1967) who uses *mv* makes reference to this fact. Weidert (1981:14) in his critical treatment of Matisoff (1980), claims numerous omissions in the Angami phonemic inventory posited by the latter but refers to ‘...the unique labiodental nasal [mv-] [...which...] occurs only with /ə/.’ It is accepted as an allophone of /m/ by Weidert.

Giridhar (1980) does not make explicit which variety of Angami he describes, although he notes the particular status of the Kohima dialect in the introduction to

³ The root *ɱə* ‘animal’ appears in a number of items in (2), as well as *themɱə* ‘goat’ and *zemɱə* ‘crane’.

his study. Lexical and phonetic differences between his data and those provided by Burling (1960) suggest that if Giridhar's is Kohima Angami, it may be a different sub-dialect. Like Matisoff (1980) and Blankenship *et al.* (1993) below, Giridhar (1980:13) claims the labiodental nasal [m̥] is a predictable allophone of /m/ before /ə/, and provides phonemic and phonetic transcriptions in support, e.g. /mə/ [m̥ə] 'to refuse', /themə/ [them̥ə] 'star', /ŋuməmie/ [ŋum̥əmie] 'enemy', and sometimes also orthographically as *mv* as well (see (2) below and Giridhar 1987). He is clear in his examples when there is a labiodental nasal before *ü* – it is always provided in additional phonetic transcription. It is on this point that Giridhar (1980, 1987) may have missed evidence of contrast between *m̥* and *m* before /ə/ in the dialect he describes, given *rümü* 'bug' which is never transcribed with [m̥] and which surfaces presumably as [rəmə], although it is [rəm̥ə] in Kohima (see above). Examples of /m/ are also found before /əi/, e.g. *aməi* 'uncle', and in the absence of a transcription denoting [m̥], we must assume following Burling (1960), that we have [m] here too as well.

Giridhar (1980, 1987) also usefully provides some extra examples of *m̥* in Angami, as in (3) where his *mü* (and *mvü*) = [m̥ə]:

- (3) *themücie* 'spinning wheel' < *themvü* 'spindle'
themükhenhü 'meteor' < *themvü* 'star'
müdze 'foundation'
kethemü 'witchcraft' (but *kethemu*, Giridhar 1987)
puonumü 'interest' (also *puonumvü* Giridhar 1987)
puomhumü 'border on non-striped parts of *lohe* shawl' (also *puomhumvü* Giridhar 1987)

Labiodental nasals are also reported to occur in the Khonoma dialect of Angami for which Blankenship, Ladefoged, Bhaskararao and Chase (1993) refer briefly to the allophonic presence of 2 fully nasal labiodental allophones: voiced [m̥] and voiceless [m̥^h] that are derived from voiced /m/ and voiceless /m^h/ respectively. While they provide no lexical examples in support, they claim that these labiodentals are part of a more pervasive labiodentalization that also affects /p k^h w kw gw/ before /ə/. According to Matisoff (1980), a similar rule same rule once applied to all labials in the Kohima dialect, but subsequent changes have now led to contrast between /pf pf^h bv/ and /p pf b/ with only [m̥] still predictably allophonic before /ə/.

3.1.1 Other languages in the Angami area: /m̥/ as contrastive

There is clear evidence of labiodental *m̥* appearing in three other Angami Naga languages, all closely related to Angami with which they form a dialect chain. In Rengma, Ntenyi and Chokri phonemic status for /m̥/ seems certain. Rengma and Ntenyi are spoken in the same Kohima district of Nagaland as Kohima Angami, while Chokri is spoken directly to the southeast of Kohima. Data for these languages are drawn primarily from Marrison's (1967) lexical materials. While

his Rengma and Ntenyi data are taken from earlier sources, he collected the Chokri material directly. As a result, we can assume its full phonetic reliability.

A complete list of items with *m̥* in Rengma is provided in (4). Unlike Angami, we see that it appears before two vowels, *u* and *ü* (= [ə]). It is not clear if this apparent distribution reflects a typographical error or confusion in Marrison's source material, but we are aware of frequent alternation among the vowels *ə* and *u* and *o* within and across the Angami Naga languages in Marrison's vocabularies. The lexical items with *m̥* in Rengma can be divided into two groups: (4a) unrelated lexical items; and (4b) items which appear to share the negative marker *mvü/mvu*.

- | | | | |
|--------|---|---|---|
| (4) a. | <i>mvulokeshvu</i>
<i>mvüya</i> | ‘must’
‘to receive’ | cf. Angami /m̥ə/ ‘to gather’ |
| b. | <i>akemvu</i>
<i>ayhiitin-gwakemvü</i>
<i>zozolokemvü</i>
<i>thamekae-mvu</i>
<i>mvule</i>
<i>kemvu, mo, mvü</i>
<i>njükemvü</i>
<i>terogwakemvü</i>
<i>kemvuthe</i>
<i>kemvu</i>
<i>gwakemvu</i> | ‘alone’
‘deaf’
‘dumb’
‘never’
‘no’
‘not’
‘rough’
‘sick’
‘until’
‘without’
‘wrong, wicked’ | cf. <i>zo</i> ‘speak’

cf. <i>terotha</i> ‘lame’

cf. <i>kegwa</i> ‘good, well’ |

Phonemic status of /m̥/ appears certain given contrast with /m/ before /ə/, e.g. /m̥əja/ *mvüya* ‘to receive’ v. /məŋ/ *müŋg* ‘mouth’, and before /u/, if *u* rather than *ü* has been correctly used after *mv*, e.g. *akemvu* v. *gwamu* ‘bad’.

In Ntenyi, *m̥* is very rare, as in (5), but it is contrastive nevertheless with /m/ before /ə/, e.g. /m̥əja/ *mvüya* ‘to receive’ v. /m̥ə/ *müe* ‘to suck’. We also find alternation with /m̥/ ~ /m/ and /ə/ ~ /o/ ~ /u/ in *mo/mu/mvü* and the unusual sequence *mmv* (*mm̥* or *m̥m̥*?) in one example, which appears to derive from an earlier vowel syncope.

- | | | | |
|-----|--|--|--|
| (5) | <i>mmvü</i>
<i>mvü, mo,</i>
<i>mvü, mu</i>
<i>mvüya</i> | ‘to fast’
‘to find’
‘to look at, to see’
‘to receive’ | cf. Mzieme Angami <i>m’mwang</i> , <i>mmong</i>

but <i>münga</i> ‘five’, <i>müe</i> ‘to suck’ |
|-----|--|--|--|

There is evidence, albeit also rare, of *m̥* appearing in two different dialects of Chokri. In the Cheswezumi dialect spoken some 70 kilometres to the southeast of Kohima, there are only two examples of *m̥*, given by Marrison (1967) and listed in (6). Yet despite its low frequency, it is clearly contrastive with /m/ before /o/ and /ə/.

- (6) / η ovo/ *mvovo* ‘to fast’ but /mo/ *mo* ‘not’, /umo/ *umo* ‘body’
 /t η m η / *thümvü* ‘star’ but /k η m η th η / *kümiüthu* ‘empty’

In the Phek Chokri dialect spoken further afield in Sohima, / η / is even rarer but still contrastive with bilabial /m/. Bielenfield and Niune (2001) report that η occurs only in [t η m η] ‘star’. Their claim that η is an allophone of /m/ before [ə], itself an allophone of /i/, is an evident error: numerous examples of [ə] are easily found after bilabial [m] in their own data, e.g. [m η .y \tilde{e} .n \tilde{u}] ‘orphan’, [m η .khi] ‘bee’, [ã-m η .si] ‘hassle me’.

3.3 η across the borders of Nagaland?

In Marrison’s (1967) lexical material, we find three items written with the digraph *mv* in word-medial position – one each in three Tibeto-Burman languages, spoken just beyond the Angami area, across the political boundaries of Nagaland itself:

- (7) a. Tangsa (Yogli) *kamvai* ‘to swim’
 b. Tangsa (Moshang) *lamvan* ‘to take’
 c. Mikir *lamve* ‘dumb’

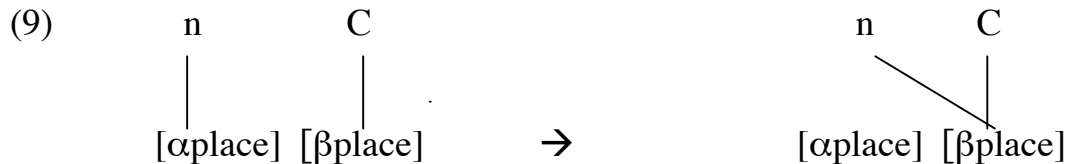
The three languages are not part of the same Kuki-Chin-Naga subgroup as Angami languages, although Mikir directly borders Angami, in which case we may have evidence of areal diffusion. The items were not directly collected by Marrison (1967) and, in the absence of more information, it is not certain whether here we have η or indeed a true cluster ηv , or even *mv*.

4. SYNCHRONIC PROCESSES AND CONTRASTIVITY OF / η /

In Khonoma Angami, where η is reportedly allophonic, it is part of a larger, synchronically productive process of labiodentalization that also affects /p k^hw kw gw/ before the vowel /ə/ (see Blankenship *et al.* 1993). Their synchronic allophones in this context are [f k^{hf} kf gv] respectively. From a synchronic perspective it is not clear what the motivation for such a shift would be—as is evident in any feature-based rule that aims to capture *m* > η specifically, which is the simplest part of the whole process of labiodentalization, as in (8):

- (8) m → η
 [+dist] → [-dist] / ___ ə

The rule is one of place shift, involving a change in specification of the consonant feature [distributed], but which is not directly conditioned by the apparent trigger, which makes no use of what is an exclusively consonantal feature (see, e.g. ISP). It cannot, therefore, be labelled assimilation. This is very different from the more usual process of nasal labiodentalization that is very much part of a larger process of nasal place assimilation to following consonants, e.g. English /lnk/ --> [ln η k] ‘link’, seen in (9):



While labiodentalization appears to be allophonic in Khonoma Angami, we have seen that in Chokri, Ntenyi, Rengma (and possibly in Kohima Angami), *ŋ* is now phonemic. Phonemicization to /ŋ/ has occurred as a collateral effect of vowel shifts and mergers that have led to contrast between *m* and *ŋ* in the same vowel environment, already seen in (5) and (6) above.

5. HISTORICAL DEVELOPMENT: WHERE DOES *ŋ* COME FROM?

As already noted in section 4, the development of a labiodental nasal *ŋ* in the Angami area is linked to a more general labiodentalization of labials. The low frequency of labiodental nasals, compared to other nasals, is a function of the restricted environments in which *ŋ* and labial affricates *pf pʃh bv*, etc.... have arisen. According to Matisoff (2003: 23-24) labiodentals have developed in Angami from velars and labials in three contexts, i.e. before:

- (10)a. primary medial **-w-*, e.g. **m-kwa:y* > *mèpfi* ‘bee’, **d-ŋwa* > *tèmvə* ‘goat’
 b. primary vocalic **-u*, e.g. **m-kul* > *mèpfə* ‘all’, **pu* > *pfu* ‘male’
 c. secondary vocalic **-u* (< PTB **-a*), e.g. **ka* > *pfə* ‘span’, **ba* > *pfə* ‘carry on back’

Modern examples of *ŋ* have been identified before Proto-Tibeto-Burman (PTB) **-w-*. All reconstructed forms are taken from Matisoff (2003):

- (11)a. **s-ŋwa-t* > Angami *themə*, Chokri *thiimvü* ‘star’
 b. **s-mwəy* > Angami *themə* ‘spindle’
 c. **mwa* ‘curse, revile’ > Angami *ŋumə* ‘enemy’
 d. PLB **mwat* ‘hungry’ > Ntenyi *mmvü* and Chokri *mvovo* ‘to fast’

Matisoff (2003:353) notes reflexes of the reconstructed Proto-Lolo-Burmese (PLB) root **mwat* ‘hungry’ have been found only in Lolo-Burmese and can only be reconstructed for that branch. Given (11d), it can now also be extended to the Kuki-Naga-Chin branch.

The presence of a historical **w* in **mw* and **ŋw* provides the most common source for *ŋ* in our data. In the case of velar **ŋw*, there was an intermediate stage with doubly articulated labial-velar nasal with labial offlide, **ŋmw*, before this was reduced to **mw* (see Hajek 2006 for details). We cannot confirm an effect of a primary **-u* (i.e. 9b) leading to the development of *ŋ* but Matisoff’s secondary **-u* from PTB **-a* needs some expansion. The shift to **-u* follows an intermediate stage of spontaneous labialization of labials and velars before **a*, i.e. *ma* > *mwa*, as in (12, 13). Such labialization is well-known across languages and is reconstructed as an intermediate stage for Angami and other Tibeto-Burman

languages (Hajek 2006). Given the phonetic variability in reflexes across Angami Naga languages, seen in the multiple final pathways in (12), labiodentalization of *Cw* to *Cv* must have occurred before complete loss of a glide, and was often followed by subsequent vowel lowering to *ə* as is always the case in Kohima and Khonoma Angami:

(12) **ma* > *mwa* > *mwɔ* > *mwo* > *mvo*, *ɱvo* > *mo*, *ɱo*
> *mwu* > *mvu*, *ɱvu* > *mu*, *ɱu* > *mə*, *ɱə*

(13) **ma* negative adverb > **mwa* > Rengma *mvü*, *mvu*, *mo*
(Angami, Chokri *mo*, Ntenyi *ma*)
**ma-t* ‘join, bring together’ > **mwa* > Ntenyi *mvüya* ‘to receive’

For one modern form, the reconstructed PTB form has an initial **mr* cluster. The rhotic here was later lost, as elsewhere, leading to the same spontaneous labialization before **a*:

(14) **mraŋ* ‘to see, look toward’ > Ntenyi *mvü*, *mu* ‘to look at, to see’, *mvü*,
mo ‘to find’ (cf. Lahu *mɔ*)

Finally, for completeness we note Weidert (1981) offers very different looking etymologies for some Angami words. We find spontaneous labialization reconstructed for (15a) but not for (15b), although it is not clear why it should not have occurred here as well. Overall these alternative etymologies seem less likely than those offered by Matisoff (2003).

(15)a. PTB **s-meel?* > **s-meɪ?* > Angami **t-meɪ?* > **t-mwəi?* >
t-mwə > *themə* ‘goat’
b. PTB **smxar* ~ **msxar* > **s-mxar* > **s-mxan* > **th-ma* > *th-mvə*
[*themə*] ‘star’

6. FINAL DISCUSSION AND CONCLUSION

The number of languages around the world known to have a contrastive labiodental nasal /*ɱ*/ can now be greatly expanded from its current one, i.e. Kukuya. Although lexical examples of *ɱ* are few in number in Angami Naga languages, there is no doubt that the labiodental nasal is fully phonemic in at least four of these: Rengma, Ntenyi, and the Cheswezumi and Phek dialects of Chokri. With respect to Angami itself, sources disagree about the phonemic status of *ɱ* but overall our evaluation of the evidence points to possible but still uncertain status in the Kohima dialect. In the Khonoma dialect, currently available information indicates that voiced *ɱ* and voiceless *ɱ^h* are predictable allophones of bilabial /*m*/ and /*m^h*/ respectively before /*ə*/ . Further investigation and data may alter that analysis in the future.

There is no doubt that the presence of *ɱ* in the Angami area is an areal phenomenon in Nagaland, but there are hints that it may extend into other non-

Naga Tibeto-Burman (TB) languages on the edges of Nagaland. Mikir (a separate branch of TB, Gordon 2005), which directly borders Angami, is a possible candidate to have *m̥*, although the current paucity of data makes evaluation of this hypothesis impossible.

Our survey of Angami Naga languages has also uncovered a range of different labiodental nasal segment types not previously noted in the general literature, i.e. voiced labiodental [m̥], voiced doubly articulated bilabial-labiodental [mm̥] (Kohima Angami), voiceless labiodental [m̥^h] (Kohima Angami), as well as a possibly long or rearticulated [m̥m̥] (Ntenyi).

The historical origins of *m̥* in Angami Naga are easily discernible: it has arisen as part of a wider process of secondary labiodentalization of historically labialized segments in the Angami Naga area. The frequent appearance today of *m̥* before *ə* is somewhat misleading: it is the result of a more recent vowel laxing that has obscured the historical roots of labiodentalization, cf. (10). In any case, our data show that *m̥* can also appear before vowels other than *ə*, as in Cheswezumi Chokri /m̥ovo/ *mvovo*.

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