

The sound change of oralization in Mewahang

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Abstract

This paper discusses the sound change of oralization in the Mewahang language (Eastern Kiranti, Trans-Himalayan/Sino-Tibetan) spoken in eastern Nepal. The sound change of oralization turned syllable-final nasals into homorganic oral stops when followed by voiceless obstruents. This sound change constitutes a diagnostic innovation of Mewahang with regard to its closest relatives Lohorung and Yamphu. In this paper, the process of oralization in both compounding as well as derivational and inflectional morphology is described and illustrated with primary data collected in fieldwork. The explanatory potential of the sound change for synchronic peculiarities in the verbal morphology and morphophonology is discussed, and an overview of exceptions to the sound change is provided.

Keywords: Mewahang, Phonology, Upper Arun, Kiranti, Trans-Himalayan, Historical linguistics

1. Introduction

Mewahang is a Kiranti language of the Upper Arun subgroup (Trans-Himalayan and Sino-Tibetan language family) spoken in the Sankhuwa and Arun river valleys of eastern Nepal, the distribution into the two valleys corresponding roughly to a primary dialect division between Western Mewahang (Sankhuwa valley) and Eastern Mewahang (Arun valley).¹ Kiranti constitutes a conventional, but empirically unproven phylogenetic hypothesis, since no convincing, exclusively shared innovations have so far been detected (cf. Gerber and Grollmann 2018). However, a monophyletic “Eastern Kiranti” branch of Trans-Himalayan, composed of Upper Arun, Khambu, Southern Kiranti, and Greater Yakkha-Limbu, can tentatively be assumed on the basis of the empirical evidence (cf. Shafer 1953; van Driem 1990; Michailovsky 1994; Gerber and Grollmann 2018). Some shared innovations of the individual branches of Eastern Kiranti are presented in Gerber (2022b, under review) and Grollmann (2018/2019, under review). As a consequence, in this paper, the term “Kiranti” is to be understood in an agnostic, areal sense, and the frame of linguistic comparison is generally limited to Eastern Kiranti as

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defined above and excludes languages from the other major, “western” branch of the conventional Kiranti model.²

This paper discusses the sound change of oralization (denasalization) which constitutes a diagnostic innovation of Mewahang with regard to its closest relatives Lohorung and Yamphu. By this sound change, syllable-final nasals of Pre-Mewahang were oralized to homorganic stops when immediately followed by voiceless obstruents. This is reflected in stem allomorphy of nasal-final nominal or verbal stems when followed by morphemes with a voiceless obstruent initial, but also (less obviously) in the lack of clusters of nasals plus voiceless obstruents at the syllable boundary of polysyllabic, morphologically unsegmentable lexemes. This sound change has already been noted by Gaenszle (2007: xiv), but no phonologically informed account with comprehensive illustration has been provided so far.

First, a short, preliminary overview of Western Mewahang phonology will be given in section 2. Section 3 begins by positioning the sound change of oralization in the context of Kiranti verb stem alternation (section 3.1) and then discusses and illustrates the traces of the sound change in compounding and derivational and inflectional morphology (sections 3.2 and 3.3). Section 4 shows how the recognition of this sound change allows for an explanation of certain peculiarities of Mewahang verbal morphology. Finally, exceptions to the sound change are presented in section 5. If not indicated otherwise, the Mewahang data in this paper have been collected by the author, whereas data on other Kiranti languages are taken from the following sources: Rutgers (1998) for Yamphu, van Driem (n.d.) for Lohorung, Doornenbal (2009) for Bantawa (Southern Kiranti), Ebert (1997) for Athpahariya (“Athpare”, Greater Yakkha-Limbu), Rāi et al. (VS 2067) for Chintang (Greater Yakkha-Limbu), Schackow (2015) for Yakkha (Greater Yakkha-Limbu), van Driem (1987) for Limbu (Greater-Yakkha-Limbu), Tolsma (2006) for Kulung (Khambu) and Selin Grollmann (personal communication) for Nachiring (Khambu). The transcription of the data follows the conventions used in the respective source,

- 2 Methodologically, this paper follows the neogrammarian approach to historical-comparative linguistics, which states that the only valid argument for phylogenetic subgrouping of languages are non-trivial linguistic innovations (cf. Leskien 1876: V, VI–VII; Delbrück 1880: 135; Brugmann 1884: 231). Furthermore, innovations in the form of sound changes must conform to the principle of exceptionlessness (cf. Leskien 1876: XXVIII; Osthoff/Brugmann 1878: XIII–XV). Analogy as an explanation should constitute an “ultimum refugium” (Osthoff and Brugmann 1878: XVII) in that recourse to it should only be made when all other explanations, i.e. sound change, borrowing or morphological differences, fail (cf. Brugmann 1879: 3–8; Hill 2014). As pointed out and criticized by Fellner and Hill (2019), these principles are not followed rigorously in the highly influential standard works on Trans-Himalayan historical linguistics such as Benedict (1972), and Matisoff (1978; 2003). The evident benefits of a stricter adherence to the orthodox methodology for Trans-Himalayan historical linguistics have been repeatedly pointed out (cf. Conrady 1896; Miller 1974; Hill 2019; Fellner and Hill 2019). Historical-comparative work on Kiranti languages, on the other hand, shows a principal adherence to the tried-and-tested orthodox methodology since van Driem (1990) and Michailovsky (1994), although with varying quality of the application of the methods and, hence, the findings (cf. Gerber and Grollmann 2018).

Table 1. Consonant phonemes

	Bilabial	Alveolar	Palatal	Velar	Glottal
Voiceless stops	p	t	c [tʰ ~ tɕ]	k	ʔ
Aspirated stops	ph [pʰ]	th [tʰ]	ch [tʰ ~ tɕʰ]	kh [kʰ]	
Voiced stops	b	d	(j [dʒ ~ dʒ̥])	(g)	
Breathy stops	(bh [bʰ])	(dh [dʰ])			
Nasals	m	n		ŋ	
Fricatives		s [ç ~ s]			h [ɦ]
Liquids		r, l			
Glides	w		y [j]		

except for vowel length, which is consistently transcribed as <: >, whereas van Driem (1987) and Rutgers (1998) use <◌◌>.

2. A synopsis of Western Mewahang phonology

The consonant phoneme inventory of Western Mewahang is given in Table 1, with the phonetic value in the International Phonetic Alphabet given in square brackets wherever the phonetic value deviates graphically from the graphemes used to transcribe Mewahang. Brackets around a phoneme indicate that the phonemic status of the phone in question is not yet verified with minimal pairs.³

The breathy bilabial and alveolar stops appear consistently in a small number of lexemes, but may be the result of influence from the Indo-Aryan lingua franca Nepali, of which all Mewahang are fluent speakers and which shows a phonemic contrast between breathy and modal voice for voiced stops.

The two voiced stops [dʒ] and [g] are only attested stably in one lexeme each, viz. *jambu* ‘jackal’ and *goy-* ‘to topple’. Furthermore, these two stops are diachronically secondary. The sound change from Trans-Himalayan *b, *d, *j, *g > Eastern Kiranti *p, *t, *c, *k (cf. Shafer 1953; Michailovsky 1994; van Driem 2001) led to a lack of voiced palatal and velar stops in Eastern Kiranti and, consequently, Upper Arun and Mewahang.⁴ In the light of these historical developments, the instances of [dʒ] and [g] mentioned above must be secondary and rather recent.

Two other phones of Mewahang are likewise diachronically secondary, but synchronically constitute phonemes, namely the glottal stop /ʔ/ and the rhotic /r/. The glottal stop in Mewahang in most cases constitutes an allophone of /t/ in syllable-final position and does not contrast phonemically with /t/, but only with /k/ and /p/. All three voiceless buccal stops are regularly glottalized in

3 Phonetically, the palatal ‘stops’ are in fact affricates, but they are listed under ‘stops’ since they share an initial full closure with this class of consonant.

4 Voiced bilabial and alveolar stops, in contrast, arose secondarily in Khambu, Southern Kiranti, and Upper Arun due to the sound change from Trans-Himalayan *p, *t > *b, *d, probably via intermediate [b ~ 'p], [d ~ 't] (cf. Michailovsky 1994: 769–70). Trans-Himalayan *c and *k, on the other hand, became aspirated *ch and *kh in all Eastern Kiranti subgroups (cf. Shafer 1953; Michailovsky 1994).

syllable-final position and often reduced to bare glottal stops, especially word-finally, where the phonemic contrast seems to have collapsed. However, the glottalization of a word-internal, syllable-final stop is only completed with /t/, which is consistently realized as [ʔ] and never as [tʰ ~ t], whereas /k/ and /p/ are often realized as merely glottalized or, in conscious speech, even as non-glottalized buccal stops [p] and [k]. In the morphophonology of verb stems, the underlying place of articulation of all three buccal stops resurfaces when they do not stand in syllable-final position, i.e. with vocalic suffixes, cf. *phak'ma* “to separate” and *phag-in* “we separated”, *dap'ma* “to come (on same level)” and *dab-a-ŋ* “I came”, *khe:ʔma* “to buy” and *khe:d-a-ye* “buy!”. However, there are a few additional instances of [ʔ] in syllable-initial position that contrast phonemically with /t/, for example *-ʔa* “ERG” vs. *-ta* “LOC”, and therefore justify the assumption of phonemic status.⁵

The rhotic /r/, although occurring only in a handful of lexemes, contrasts phonemically with the lateral approximant /l/ and the two glides /y/ and /w/. Historically, Trans-Himalayan *r became y in the Upper Arun as well as Greater Yakkha-Limbu languages of Eastern Kiranti (cf. van Driem 1990). This explains the rareness of the phoneme /r/ in Mewahang and suggests that the attested instances must be secondary.

The alveolar nasal /n/ in Mewahang is prone to assimilation to following segments. The alveolar nasal is assimilated in terms of place of articulation to a following voiced bilabial and velar sound and completely assimilated to a following fricative /s/ and lateral approximant /l/. Before the labio-velar glide /w/, the alveolar nasal is dropped. Before a voiceless stop, the alveolar nasal is completely assimilated. While the partial regressive assimilation to voiced bilabial and velar segments, the total regressive assimilation to the fricative and lateral approximant, and the loss before the glide /w/ are also attested in Yamphu (Rutgers 1998: 43–45)⁶ and therefore chronologically predate the

5 The glottal stop in Yamphu and Lohorung has a similar status, although it is classified as a phoneme without elaborate discussion in the descriptions by Rutgers (1998: 19) and van Driem (n.d.), respectively.

6 Conclusive Lohorung data on this topic were not available at the moment of writing. For Yamphu, Rutgers (1998) further assumes an assimilation of /n/ > [ŋ] before the glottal consonants /ʔ/ and /h/. In contrast to the other assimilation processes listed above, however, this is phonetically implausible and is therefore more likely to reflect a sound change of Yamphu which is not conditioned by the segmental environment, namely *n > ŋ in syllable-final position. This assumption is supported by the fact that [n] is not attested in syllable-final position except when followed by alveolar obstruents or an alveolar nasal (cf. Rutgers 1998: 29). External cognates confirm this analysis, cf. Yamphu *waʔij* : Mewahang *wadin* “egg” or Yamphu *siŋʔa* : Mewahang *chinda* “day after tomorrow”. The derivation of certain instances of [ŋ] from historical *n is recognized by Rutgers (1998: 34), who notes that the second person singular pronoun of Yamphu, *hæŋ*, has the ergative stem *hæn-*. The sound change *n > ŋ in syllable-final position may have been triggered by the prior neutralization of the phonemic contrast between /n/ and /ŋ/ in favour of [n] in syllable-initial position, cf. Yamphu *na* : Mewahang *ŋa* “fish” (cf. also Rutgers 1998: 33). Due to this partial collapse of phonemic opposition, the two nasals may have subsequently been reanalysed as complementary allophones of the same phoneme, leading to the change *n > ŋ in syllable-final position wherever not inhibited by an assimilation process. A similar phonological reanalysis of erstwhile phonemes as allophones of a single phoneme due to the partial collapse of phonemic contrast

Table 2. Vowel phonemes

	Front	Central	Back	
High	i		u	u
Mid	e		o	
Low		a		

splitting up of Upper Arun, the realization as homorganic stop before voiceless stops is due to the Mewahang-specific sound change of oralization which will be described in detail in section 3.

The Mewahang vowel inventory, as shown in Table 2, consists of the three high vowels /i/, /u/ and /u/, the two mid vowels /e/ and /o/ and the low vowel /a/.

Another salient vowel phone of Mewahang, the mid-low front vowel [ɛ], does not have phonemic status. The mid-low front vowel [ɛ] contrasts with both the mid-high vowel /e/, viz. *set-* “to kill” vs. *set-* “to pull”, as well as with the low vowel /a/, viz. *hak-* “to feed” vs. *hek-* “to cut”, but there are no instances of [ɛ] contrasting both with /e/ and /a/. Therefore, the vowel [ɛ] cannot be assigned phonemic status. Historically, the mid-low vowel derives on the one hand from *a before alveolar *t and *n, cf. Mewahang *set-* : Bantawa *sat-* : Athpahariya *sat-* “to pull”, or Mewahang *khen* : Bantawa *khan* (my own data) : Kulung *khai*⁷ “wet side dish (Nepali *tihun*)”, and on the other hand from *e before velar *k and *ŋ, viz. Mewahang *hek-* : Bantawa *hek-* : Athpahariya *hek-* “to cut”, or Mewahang *deŋ* : Bantawa *deŋ* : Athpahariya *eŋsuwa* : Chintang *theŋsi* “back, behind”. In the synchronic phonology of Mewahang, the phone [ɛ] therefore constitutes a complementary allophone of both /e/ and /a/, but no distinct phoneme, since the phone is still confined as an allophone of /e/ and /a/ to its respective conditioning environment. The conditioned sound changes *a > ɛ / _t, n and *e > ɛ / _k, ŋ are also attested in Lohorung and Yamphu, cf. Lohorung *set-* and Yamphu *sæt-* “to pull”, Lohorung *khen* and Yamphu *khæŋ* “wet side dish”, Lohorung *hek-* and Yamphu *hæk-* “to cut”, and Lohorung *deŋkɔʔwa* “back”, *deŋpi* “behind, after” and Yamphu *eŋ* “back”.⁸ These changes therefore constitute shared, diagnostic innovations of Upper Arun (cf. Gerber forthcoming).

The high back unrounded vowel /u/ is a diagnostic innovation of Mewahang which sets the language phylogenetically apart from its relatives Lohorung and Yamphu. The vowel mostly constitutes a complementary allophone of /i/ before velars and bilabials, e.g. Mewahang *muk* : Lohorung *mik* “eye”, Mewahang *suŋ* :

can be observed in Limbu or Yamphu for [r] and [l] (cf. van Driem 1990; Rutgers 1998: 34–5).

- Grollmann (2018–19: 42–4) argues that the change *t and *n > i in syllable-final position is a potential shared innovation of the Khambu branch.
- Both Rutgers (1998: 13, 17) for Yamphu and van Driem (1992: 55) for Lohorung assign phonemic status to [æ] and [ɛ], respectively, but since the distributional observations made for Mewahang above also hold for these two languages, this is analytically problematic.

Lohorong *siŋ* “wood”, or Mewahang *umma* : Yamphu *imma* “to sleep”. Certain other instances of the high back unrounded vowel, however, contrast with /i/, viz. *i.ma* “to say” and *u.ma* “to defecate”, *-mi* “GEN” and *mu:* “fire”, so that /u/ is synchronically phonemic.⁹

While phonotactics and syllable structure are not discussed in detail here, for the discussion of the sound change of oralization it is relevant to state that polysyllabic, morphologically unsegmentable lexemes in Mewahang do not show sequences of nasals and voiceless obstruents at the syllable boundary, the only exceptions attested so far concerning a few proper names, cf. the sequence /m.t/ in *Sisamtiŋ*, “second wife of the mythological first man *Tumna*”, and /ŋ.th/ in *Yunthu* “founder and mythological progenitor of the village of Bala” and *Yantheta* “founder and mythological progenitor of the village of Tamku (or Mangtewa), brother of *Yungthu*” (cf. Gaenszle 1991: 331, passim). Since such sequences are attested more regularly in Lohorong and Yamphu, e.g. Yamphu *aŋghu* : Mewahang *dakhu* “kind of nut used as a hair-care product (Nepali *pāngra*)”, Yamphu *laŋgam* : Lohorong *laŋkam* : Mewahang *lakam* “friend”,¹⁰ or Yamphu *hoŋsi?* : Lohorong *həŋsi* : Mewahang *hoksi* “inside”, the gap in Mewahang can be analysed as systematic and explained by the sound change of oralization. Oralization in morphologically segmentable polysyllabic forms is discussed in section 3.

On the basis of the field notes of the author, the phoneme inventory of Eastern Mewahang as spoken in the villages of Mangtewa, Yaphu and Choyang can be said to be basically the same as that of Western Mewahang, with the sole exception that the high back unrounded vowel is allophonic in Yaphu Mewahang. For concise accounts on Eastern Mewahang phonology, see Mewāhāŋ Rāi Yā-khommā (VS 2062: xiv–xv), Banjade (2009: 12–13) or Mewāhān Rāi (VS 2073: 1–2).

3. The sound change of oralization

The sound change of oralization is a diagnostic innovation of Mewahang within Upper Arun, since it is reflected in both Western and Eastern Mewahang,¹¹ but is not shared by the other Upper Arun languages Lohorong and Yamphu.

- 9 In contrast to the western dialect of Mewahang and the eastern dialect as spoken in Mangtewa village, the dialect spoken in the village Yaphu, situated to the north-east of Mangtewa, shows a clearly subphonemic status of [u], which occurs only before velar stops in this dialect, cf. *muk* “eye”, *siŋ* “wood”, *imma* “to sleep”, *e.ma* “to defecate” and *mi* “fire”.
- 10 In Yamphu, inherited **b* and **d* are lost in word-initial position (cf. van Driem 2001: 620–21). Additionally, the voicing of voiceless stops after nasals in Yamphu and the degemination of geminated stops in Mewahang are regular phonological processes, so that these two lexemes can be reconstructed to Proto-Upper Arun as **daŋkhu* and **laŋkam*.
- 11 Since the data collected by the author on Eastern Mewahang as spoken in Mangtewa, Yaphu, and Choyang are more limited than the data on Western Mewahang, the following discussion focuses on data from the Western Mewahang-speaking area, namely from the village of Bala. However, the participation of Eastern Mewahang in the sound change of oralization is easily provable from Eastern dialect forms such as Mangtewa and Yaphu Mewahang *loko?wa* “stone” (see section 3.2.1), Mangtewa Mewahang *lakphe?wa* “sole

The sound change consists in the regressive assimilation in terms of manner of articulation of a syllable-final nasal to a following voiceless obstruent, namely *p*, *ph*, *t*, *th*, *c*, *ch*, *k*, *kh* or *s*. Velar and bilabial nasals became homorganic stops, i.e. $*\eta > k$ and $*m > p$. In the case of the alveolar nasal $*n$, the assimilation processes described in section 2 predated oralization, since historical $*n$ became a stop with the same place of articulation as the conditioning obstruent rather than *t* and since assimilation with regard to place is shared by Yamphu (cf. section 2), whereas oralization is a Mewahang-specific and therefore logically more recent development. Furthermore, for $*n$, the conditioning environment was more restricted than for $*\eta$ and $*m$ and excluded the alveolar fricative $*s$, as the sequence $*-ns-$ is realized synchronically as [ss], not as [ts] (cf. section 2). Note also that the outcome of $*-nc(h)-$ is [tɕ(h)] and not [tɕɕ(h)].

The sound change must have taken place before the 1850s, since it is attested in the “Báláli”¹² data recorded by Hodgson (1857: 350–71), for example *lu’ko’wa* “stone”, from earlier $*lu\eta\text{-}ko\text{?}wa$ (cf. section 3.2.1), *lák’phékma* “foot [actually ‘sole of foot’]” vs. *láng* “leg” (cf. section 3.2.1), or *mátúpti* “raw (green) [actually ‘it is not yet ripe’]”, from the negative verb stem *ma-tum-* “not to be ripe” plus the negative perfect suffix *-ti:tt* (cf. section 3.3).

The sound change affected both the coda of the first element of compounds as well as the coda of nominal and verbal stems when followed by a morpheme with initial voiceless obstruent. Section 3.2 will show the sound change of oralization in the domain of word formation, that is compounding and derivational morphology, whereas section 3.3 will illustrate its effects in inflectional morphology.

First, however, section 3.1 will briefly present similar processes of nasal oralization attested in a number of Kiranti languages in the restricted domain of verb stem morphophonology.

3.1. Oralization in Kiranti verb stem alternations

While oralization is a clear innovation of Mewahang within Upper Arun and not attested as a regular and productive process in any other Eastern Kiranti language, there are traces of oralization or denasalization preserved in verb stem alternations in a number of Eastern Kiranti languages, including the Upper Arun language Yamphu. These instances of oralization are caused by the stem augments *-s* and *-t*, whereby the element *-s* reflects either a causative or reflexive suffix and the element *-t* an applicative (or “directive” in the terminology

of foot” (see section 3.2.1), *thakpe* “up, above” (see section 3.2.2), *ap-pa* “your father” and *op-cha* “his child” (see section 5.2), Yaphu Mewahang *imak-tok* “how?” (< *iman* “what?” plus similative *-tok*) or *ip-si khexma* “let’s go to sleep” (see example (5)).

12 The word list by Hodgson (1857) constitutes a valuable early source on Mewahang. The apostrophe <’> in Hodgson’s transcription obviously indicates a glottal stop or, in combination with the stops <p, t, k>, a glottalized stop. The designation “Báláli” indicates that Hodgson recorded Western Mewahang, since Bala is the main settlement in the Sankhuwa valley where the western dialect is spoken. However, a part of the data in Hodgson (1857) resembles modern Eastern Mewahang as spoken in the Arun valley more than Western Mewahang. A detailed analytical exploration of the Mewahang data in Hodgson (1857) is a topic for future research.

employed by Michailovsky (1985) or van Driem (1988)), deponent or denominal suffix (cf. Michailovsky 1985; Jacques 2017: 180–85, 207).

Jacques (2017: 181) shows that with a number of verbs in Limbu and Bantawa, the applicative *-t* caused denasalization of a final nasal, cf. Limbu *yuj-* “to sit down” vs. *yukt-* “to sit on, to mount” or Bantawa *thom-* “to dance” vs. *thopt-* “to dance for someone”, although this is no longer a productive process, as there are also verbs with the coda *-Nt* (cf. Jacques 2017: 181, 207–10). In other Eastern Kiranti languages such as Kulung or Yakkha, both the causative *-s* and the applicative *-t* caused oralization of stem-final nasals, viz. Kulung *thaps-* ~ *thəm-* “to cause the shaman to dance” vs. *thəm-* “to dance (shaman)” and *thət-* ~ *thatt-* ~ *thət-* ~ *thən-* ~ *thə:-* “to bring up” vs. *thoj-* ~ *tho:-* “to come up” (Tolsma 2006: 114–15), Yakkha *yuks-* ~ *yuj-* “to put” and *yukt-* “to put for somebody”.

The Upper Arun languages show evidence for the oralization of stem-final nasals with the augment *-s*. In Yamphu, all verbs ending in a nasal show an extended stem with a homorganic oral stop plus *-s* before vocalic suffixes, viz. *khaŋ-* ~ *khaks-* “to look”, *sim-* ~ *sips-* “to ask”, *in-* ~ *iss-* “to buy”. The same alternation is attested in Mewahang, but only for a small number of verbs ending in a velar nasal /ŋ/, viz. *kuŋ-* ~ *kuks-* “to come down” or *yuj-* ~ *yuks-* “to put”. Verbs with final /m/ or /n/ never show a stem augmented with *-s*. In Lohorung, the stem codas *-ŋs* and *-ms* in the available data corpus are rare and do not show oralization in prevocalic position, viz. *lamdhum-* ~ *lamdhums-* “to walk” (van Driem 1992: 65) or *yuj-* ~ *yujŋs-* “to bring down”.¹³ The coda *-ns* is not attested in the available data on Lohorung. Obviously, none of the Upper Arun languages has preserved a functional distribution of the inherited augment *-s*, with Yamphu extending the augmented stem to all verbs ending in a nasal and with Mewahang and Lohorung levelling the alternation in favour of the unaugmented stem in most cases, and Lohorung furthermore showing analogical levelling of the oralized stem.

The augment *-t* is preserved in all Upper Arun languages and caused oralization of nasal-final verbs in Yamphu, cf. *-?ukt-* “to bring down (only used as an auxiliary)”, from *uj-* ~ *uks-* “to come down” or *mitt-* “to direct one’s thoughts towards a certain object”, from *min-* ~ *miss-* “to be occupied by feelings or thoughts”. In Lohorung, the augment *-t* is only scarcely attested in general and never with etymologically nasal-final verbs. In Mewahang, the augment has caused oralization as in Yamphu and other Kiranti languages (cf. section 4.4), but it remains unclear whether this is due to the old process of nasal oralization in verb stem morphophonology or to the more recent, Mewahang-specific and more general oralization sound change.

13 In certain Kiranti languages such as Limbu or Bantawa (cf. Jacques 2017: 181), but also Athpahariya, the causative *-s* caused the nasalization of primary stop codas, viz. Bantawa *ems-* “to make stand” vs. *ep-* “to stand” (Jacques 2017: 181), Limbu *lay-* ~ *laks-* “to give to lick” vs. *lak-* “to lick”, Athpahariya *riŋs-* “to strangle, wring” vs. *rik-* “to wind up”. For Lohorung, however, the alternation *-N* ~ *-Ns* is probably not to be explained by this process, but rather by analogical levelling of earlier **-N* ~ **-Cs*, an alternation that is still attested in Yamphu and Mewahang. Mewahang does not show any direct evidence for stop nasalization, but due to the rare occurrence of the augment *-s*, it is not possible to make elaborate statements about this topic at the moment.

One may speculate, thus, that the oralization in the domain of verb stem morphophonology was the point of origin for the further spread of the sound change of oralization in Mewahang. However, it is probably more accurate to view the two processes as independent and unrelated sound changes, as Mewahang, in its development from Proto-Upper Arun, shows a reduction in the number of augmented, oralized verb stems and therefore also a reduction of the productivity of this old process, while at the same time innovating a more productive oralization sound change not restricted to verb stem morphophonology. Further research will have to address the relationship between the Kiranti-wide oralization of stem-final nasals and the Mewahang-specific, productive oralization sound change.

3.2. Word formation

Word formation in Mewahang comprises both compounding as well as derivation by means of suffixes. In the following, compounding will be presented first (cf. section 3.2.1), followed by an account on derivational morphology (cf. section 3.2.2).

3.2.1. Compounding

Compounds with a nasal-final first element and a second element with initial voiceless obstruent regularly show oralization. This affects noun-noun compounds as well as noun-verb compounds.¹⁴

Examples are given in Table 3. Question marks indicate that the respective compound element is not attested in isolation and its meaning unknown. Lexical roots which are attested in other Eastern Kiranti languages, but not as such in Mewahang, are marked with an asterisk <*>.

The lexeme *lokoʔwa* ‘stone’ deserves a short comment. Although synchronically quite divergent, the first syllable *lo-* continues the widespread Trans-Himalayan root for stone, **luŋ*. This, and consequently the oralization of the final velar nasal in Mewahang, can be proven by adding the Lohorung and Yamphu cognates, *luŋkoʔwa*¹⁵ and *ruŋguʔwa*, respectively. The lexeme can be reconstructed for Proto-Upper Arun as **luŋkoʔwa*, faithfully preserved in Lohorung. Mewahang, in addition to the oralization of the velar nasal in

14 The prosodic status of compounds in Mewahang is not yet fully clarified. Generally, oralization does not seem to have affected word-final nasals across word boundaries, cf. example (1), where the pronoun *anin* ‘you (PL)’ is not oralized by the following verb stem *pitt-*, but the second person plural ending *-nin* is oralized by the nominalizer *-puu*, cf. also the instances of *N#C* in examples (10a) and (18) below. Since compounds, in contrast, are affected by oralization, it seems appropriate to analyse them as single phonological words.

(1) *o:ʃaʔa anin piʔda:knippu*
o:-saʔa anin pitt-da:-k-nin-puu
 3SG-ERG 2PL give-AUX.PURP-NPT-2PL-NMLZ
 ‘He will give it to you.’

15 Van Driem (n.d.) provides the form <luŋkoʔwa>, but [ɔ] in Lohorung, as in Mewahang, is subphonemic and mostly constitutes an allophone of /o/ before velar codas, so that it can be inferred that [ʔ] in this lexeme is an allophone of /k/. This matches with the etymological source provided for *-koʔwa* by van Driem (n.d.) mentioned below.

Table 3. Oralization in compounds

Type	Compound	Meaning	First element	Second element
N + N	<i>haksili</i>	“kind of dance”	<i>hay</i> “king”	<i>sili</i> “dance”
	<i>khamaksili</i>	“kind of dance” (Gaenszle 2000: 240)	<i>khamay</i> “house altar”	<i>sili</i> “dance”
	<i>lakpokhi</i>	“calf”	<i>lay</i> “leg, foot”	<i>pokhi</i> “?”
	<i>lakphe?wa</i>	“sole of foot”	<i>lay</i> “leg, foot”	<i>phe?wa</i> “?”
	<i>loko?wa</i>	“stone”	* <i>luj</i> “stone”	<i>ko?wa</i> “?”
	<i>napkuruj</i>	“thunder”	<i>nam</i> “sun”	<i>kuruj</i> “?”
	<i>napcuylɛj</i>	“lightning”	<i>nam</i> “sun”	<i>cuylɛj</i> “?”
	<i>khupcepa</i>	“female house altar deity”	<i>khum</i> “house”	<i>cepa</i> “?”
	<i>sukcho?</i>	“tree”	<i>suuj</i> “wood”	<i>cho?</i> “top”
	N + V	<i>maksi:ʔma</i>	“to perform the <i>devā</i> ritual”	<i>may</i> “deity”
<i>nuksemma</i>		“to name (ritually)” (Gaenszle 2007: 249)	<i>nuy</i> “name”	<i>semma</i> “to name (ritually) [ritual language]”
<i>laptupma</i>		“welcome gift during marriage or house consecration” (Gaenszle 2000: 263)	<i>lam</i> “road”	<i>tupma</i> “to meet”

Table 4. Oralization with the male gender suffix *-pa*

Lexeme	Lexical root	External cognates
<i>makpa</i> “shaman”	<i>maŋ-</i> “deity”	Lohorung <i>maŋpa</i> , Yamphu <i>maŋba</i>
<i>ŋetekpa</i> “spouse’s younger brother”	<i>ŋetɛŋ-</i> “spouse’s younger sibling”	Lohorung <i>ŋetɛŋpa</i> , Yamphu <i>nettiyaŋba</i>
<i>wathakpa</i> “young man, youth”	* <i>wathaŋ-</i> “?”	Lohorung <i>wathaŋpa</i>

*-*ŋk-* to *-*kk-*, shows assimilation of the vowel **u* to the vowel of the second syllable and degemination of the sequence *-*kk-* (cf. sections 2, 4.3 and 4.4 for further instances of the degemination of stops), whereas Yamphu shows an initial [r] due to the reanalysis of the phonological relationship between the two liquids following the sound change **r* > *y* (see section 2), the regular allophone [g] of /k/ after a nasal and assimilation of the vowel **o* of the second syllable to the vowel of the first syllable. The element *-*koʔwa* in the words for “stone” is of unknown origin, but van Driem (n.d.) assumes for Lohorung that it is derived from the verb *kokma* “to throw”, which matches well with the semantics in Lohorung, where *luŋkoʔwa* designates a stone of “throwable size”, whereas the basic form *luŋ* refers to any kind and size of stone.

3.2.2. Derivational morphology

This section discusses derivational morphemes that cause oralization, namely the male gender affiliation suffix *-pa*, the nominalizers *-pu*, *-pala* and *-kapa* and the purposive suffix *-si*.

The male gender affiliation suffix *-pa* causes oralization of the final nasal of the nominal stem, cf. Table 4. The voiced stop [b] in the Yamphu forms is the regular allophone of /p/ after nasals (cf. Rutgers 1998: 22). Corresponding female forms with the female gender suffix *-ma* exist for “shaman”, namely Yamphu *maŋma*, and “spouse’s younger brother”, namely Mewahang *ŋetɛŋma* or Yamphu *nettiyaŋma*, which secure the isolation of the lexical roots *maŋ-* and *ŋetɛŋ-*.

Additional potential instances of oralization caused by a homophonous suffix *-pa*, which may or may not be cognate with the male gender suffix, exist, but no Lohorung or Yamphu cognate could be found, and these words are therefore not included in Table 4. Those include *calpokpa* “butterfly”, *khakcukpa* “timur pepper”, *khekrokpa* “bird species (black jureli)”, *pacɛkpa* “lizard” and *yaklekpa* “ant”.

Another instance of oralization caused by a suffix *-pa* which is probably not cognate with the male gender suffix, is *thakpa* “up” (Mangtewa Mewahang *thakpe*), with cognates in Lohorung *thanpe* “up there”, Limbu *thaŋ-*, and Kulung *thoŋ-* ~ *tho:-*, both “to come up from below”.

Fully productive derivational suffixes which cause oralization are the nominalizers *-pu*, *-pala* and *-kapa* and the purposive suffix *-si*.

Oralization caused by the versatile nominalizer *-pu* is shown in examples (2a)–(2d). The nominalizer *-pu* is used to nominalize verbs and other parts of speech for grammatical purposes, cf. example (2d), but is also commonly

used with inflected verbal forms with pragmatic, discourse-oriented functions, cf. examples (2a)–(2c).

- (2) a. *aka ɛe:ma kheʔakpu*
 aka se:mak khɛt-k-aŋ-pu
 1SG tomorrow go-NPT-1SG-NMLZ
 “I shall go tomorrow.”
- b. *yakhi:kukpu*
 yakhitt-k-u-ŋ-pu
 bring.for.someone-NPT-3.P-1SG-NMLZ
 “I will bring her [a banana].”
- c. *otsaʔa aka ŋkhama tuŋʔaŋmippu*
 o:ci-ʔa aka ŋkhama tuŋ-k-aŋ-min-pu
 3NSG-ERG 1SG why chase.away-NPT-1SG-3PL-NMLZ
 “Why are they chasing me away?!”
- d. *içippu tokpaŋ i:maphou*
 isin-pu tokpaŋ is-ma=phou
 today-NMLZ like say-INF=EMPH
 “Let’s say: like the one today, right?”

In examples (2a)–(2b), the addition of the nominalizer *-pu* to the first person verb agreement endings for pragmatic reasons causes the oralization of the velar nasal of the first person singular index. Formal and semantic similarities suggest that the resulting endings *-akpu* and *-kpu* served as the source construction for the oral endings *-ak* and *-k*, to be discussed in section 4.1.

The two nominalizers *-pala* and *-kapa*, which derive deverbal nominals co-referential with the P and S/A arguments, respectively, are shown to cause oralization in examples (3a)–(3c) and (4a)–(4c).

- (3) a. *loppala*
 lom-pala
 beat-NMLZ.P
 “The beaten one”
- b. *khakpala*
 khaŋ-pala
 look-NMLZ.P
 “The one looked at”
- c. *aka peppala duŋmaluŋ khennuʔ*
 aka pen-pala duŋmalu-ŋa khenus-k
 1SG sit-NMLZ.P cushion-EMPH be.good-NPT
 “The cushion I am sitting on is comfortable.”
- (4) a. *lopkapa*
 lom-kapa
 beat-NMLZ.S/A
 “The beating one”

- b. *khakkapa*
 khaŋ-kapa
 look-NMLZ.S/A
 “The looking one”
- c. *di: khikkapaʔaŋ duŋum*
 di: khin-kapa-ʔa-ŋa duŋ-a-u-m
 beer carry-NMLZ.S/A-ERG-EMPH drink-PT-3.P-NMLZ
 “The one carrying the beer drank it.”

Oralization caused by the non-finite verbal suffix *-si*, which is used to form a purposive clause, is exemplified in example (5a)–(5b).

- (5) a. *çəkçi khεʔak*
 seŋ-si khεt-k-ak
 brush-PURP go-NPT-1SG
 “I shall go to do the dishes.”
- b. *aka kupçi dabaŋ*
 aka kum-si dap-a-ŋ
 1SG hide-PURP come.across-PT-1SG
 “I came to hide [here].”

3.3. Inflectional morphology

Both nominal and verbal inflectional suffixes cause the oralization of final nasals of inflected stems. We will first discuss morphemes of the verbal morphology in section 3.3.1 before turning to nominal morphology in section 3.3.2.

3.3.1. Verbal markers

The verbal markers that cause oralization comprise inflectional morphemes denoting tense, number and person as well as grammaticalized auxiliaries which function as modifiers with regard to aspect, direction, valence or other semantic nuances.

The verbal markers that trigger oralization are the dual suffix *-ci*, the homophonous third person non-singular marker *-ci*, the exclusive suffix *-ka*, the perfect suffix *-ʔda*, the negative perfect suffix *-ti:tt*, the question marker *-pha* and the emphasis marker *=phou*.¹⁶ Since the third person non-singular marker *-ci* and the exclusive morpheme *-ka* only attach to one and two morphemes with a final nasal, respectively, their occurrence is not productive and the oralization triggered by them can comprehensively be described by listing the respective agreement endings, i.e. *-ukci* “1SG→3NSG” (cf. *-uŋ* “1SG→3SG”), *-ikka* “1PL.EXCL” (cf. *-in* “1PL”) and *-upka* “1PL.EXCL→3” (cf. *-um* “1PL→3”).

The perfect suffix *-ʔda* and the negative perfect suffix *-ti:tt* illustrated in examples (6) and (7) attach directly to the verb stem and therefore trigger oralization on nasal final verbs. Oralization caused by *-ʔda* is shown in examples

16 This morpheme is also found in propositions without a verbal predicate, i.e. in equational propositions, where a preceding nominal element exhibiting a final nasal shows oralization, e.g. *iciga mewahak=phou!* “the two of us are Mewahang, you know?!” or *kha-mak=phou!* “the house altar, it is!”

(6a)–(6b), whereas oralization triggered by *-ti:tt* is illustrated with examples (7a)–(7b).

- (6) a. *suŋ yapʔda*
 suŋ yam-ʔda
 wood rot-PERF
 “The firewood is rotten.”
- b. *kukdaŋ*
 kuŋs-ʔda-ŋ
 descend-PERF-1SG
 “I have already arrived down here.”
- (7) a. *ikkaʔ heŋmawa madukti:tupka*
 ikka-ʔa heŋmawa ma-duŋ-ti:tt-u-m-ka
 1PL.EXCL-ERG liquor NEG-drink-NEG.PERF-3.P-SAP.PL.A-EXCL
 “We have not yet drunk liquor.”
- b. *osaʔa aka malopti:ʔŋa*
 o:saʔa aka ma-lom-ti:tt-ŋa
 3SG-ERG 1SG NEG-beat-NEG.PERF-1SG
 “He has not beaten me.”

Like all person-number markers, the dual morpheme *-ci*, which marks a dual referent irrespective of grammatical person, occurs after the tense-aspect markers. In negated non-past forms, however, there is no non-past marking between the verb stem and the person-number endings, so that the dual suffix is directly added to the verb stem and causes oralization of a nasal verb stem coda, as shown in example (8a). The dual morpheme is also used to mark a dual agent acting on a first person singular patient. In this configuration, *-ci* is added to the first person singular ending, which in the non-past affirmative and in the past tense has the form *-aŋ* and *-ŋ*, respectively, and is therefore subject to oralization, viz example (8b).

- (8) a. *daptsiganam*
 dam-ci-ka-na-m
 stumble-DU-EXCL-NEG-NMLZ
 “The two of us will not stumble and fall.”
- b. *otsi huppaŋa aka tuŋaktsibu*
 o:ci huuk-paŋ-ʔa aka tuŋ-a-ŋ-ci-pu
 3NSG two-CLASS.ANIM-ERG 1SG chase.away-PT-1SG-DU-NMLZ
 “The two of them chased me away.”

The question marker *-pha* and the emphasis marker *=phou* are added to a conjugated verb form to express a question or to emphasize the proposition. When the two morphemes are added to a verb form ending in a nasal, this nasal is oralized, e.g. the final alveolar nasal of the endings *-min*, cf. example

(9a), *-nin*, cf. example (9b), and *-in*, cf. example (10a), or the first person singular suffix *-ŋ* in example (10b).¹⁷

- (9) a. *kuŋwapi khedatsilo minatsi tsu:ʔamiʔpha*
 kuŋwa-piʔ khɛt-a-ci-lo mina-ci cu:-a-min-pha
 water-LOC go-PT-DU-ADVS.CTP human.being-NSG exist-PT-3PL-Q
 “Were there [other] people when the two of you went to the waterhole?”
- b. *aninʔa aka eguʔaŋniʔpha*
 anin-ʔa aka ɛk-uk-aŋ-nin-pha
 2PL-ERG 1SG drive.away-NPT-1SG-2PL-Q
 “Are you chasing me away?”
- (10) a. *ma:kçaʔa ikin tsa:kipʔphou*
 ma:ksa-ʔa ikin ca:-k-in=phou
 bear-ERG 1PL.INCL eat-NPT-1PL=EMPH
 “Oh, the bear is going to eat us all!”
- b. *kupi yuksukphou*
 kupiʔ yuŋs-a-u-ŋ=phou
 here put-PT-3.P-1SG=EMPH
 “I have put it here, right?!”

Mewahang makes extensive use of partially grammaticalized auxiliary verbs which derive from verbs still in use as lexical verbs in most cases and which are added directly to the unmarked lexical verb root to express aspectual, valence-related or more general, semantic differentiations. Historically, the perfect, negative perfect and non-past markers of Mewahang may also have been derived ultimately from this source construction, representing an earlier and more thoroughly grammaticalized layer of auxiliaries. Any auxiliary with a voiceless obstruent initial causes oralization if the lexical verb ends in a nasal, as shown in examples (11a)–(11c).

17 The form and distribution of the question marker *-pha* suggests that it is morphologically complex and consists of the nominalizer *-pu* (cf. section 3.2.2) and the question marker *-ha*. This is based on the fact that the question marker *-pha* occurs only with verb forms which regularly take the nominalizer *-pu* in declarative propositions. Furthermore, *-pha* is not combined with the nominalizer *-pu*, and the question form of a verb marked with the other discourse nominalizer of Mewahang, *-m*, is *-mha*, not **-mpha*. The question marker *-pha* is also restricted to verb forms and cannot be combined with nominals, where *-ha* is used instead, e.g. *chade:pma-ʔa-ha?* [female.youngest.born-ERG-Q] “[do you mean] the youngest-born?”, parallel to the restriction of the nominalizer *-pu* in its pragmatic, discourse-oriented function to verbal forms. The emphasis marker *=phou* may also ultimately go back to the nominalizer *-pu*, fused with the emphatic particle *-hou*, which may itself be derived from the question marker *-ha* by means of expressive diphthongization, which is also used in Mewahang to form the vocative, viz. *chad:epou!* “O youngest-born!”, from *chade:pa*.

- (11) a. *napkho*
 nam-kha-a-u
 smell-AUX.OCC-PT-3.P
 “Smell [lit. take a look at smelling it]!”
- b. *khokseʔtsim*
 khoŋ-sett-a-u-ci-m
 cut-AUX.PERF-PT-3.P-3NSG-NMLZ
 “[Yes], they have already slaughtered [the chicken].”
- c. *khakthapka*
 khaŋ-tha-a-u-m-ka
 look-AUX.ACT.UP-PT-3.P-SAP.PL.A-EXCL
 “We looked up to it from below.”

3.3.2. Nominal markers

The nominal markers that trigger oralization are the three case marker locative *-piʔ*, ablative *-paŋ* and similaritive *-tok*, and the non-singular marker *-ci*. Examples (12a)–(12d) illustrate oralization with these markers.¹⁸

- (12) a. *khupi:ga kheʔma*
 khum-piʔ-yu-ka khet-ma
 house-LOC-LEV-towards go-INF
 “Let’s go to the house over there.”
- b. *mewahakpaŋ iɕe to*
 mewahaŋ-paŋ is-a-u-ye to
 Mewahang-ABL say-PT-3.P-IMP PRCL
 “Come on, say it in Mewahang!”
- c. *hako khuptoʔ ɲɛ:*
 hakoʔo khum-tok ɲett-k
 DEM.FOC house-SIM be.like-NPT
 “This looks like a house.”
- d. *buŋwam nuktsi*
 buŋwa-mi nuŋ-ci
 flower-GEN name-NSG
 “The names of the flowers”

Oralization is also caused by a suffix which is no longer productive in Mewahang, namely *-ta*. This suffix is only attested in a number of frozen, lexicalized instances relating to different times of a day, as shown in examples (13a)–(13c). With the two lexical roots *len-* “day” and *sen-* “night”, the addition of *-ta* has caused the oralization of the final nasal. This analysis is justified by the occurrence of the presumed lexical root *len-* of *letta* as an independent

18 Note that the oralization caused by the similaritive suffix *-tok* was observed to be somewhat unstable and that the form in example (12c) is also attested with a final nasal, i.e. [khumtoʔ]. More pervasive exceptions to the sound change of oralization are discussed in section 5.

Table 5. Case paradigm of *aka* “I”

Case	Stem	Form
Absolutive	<i>aka-</i>	<i>aka</i>
Ergative	<i>aka-</i>	<i>akaʔa</i>
Comitative	<i>aka-</i>	<i>akaloŋ</i>
Similaritive	<i>aka-</i>	<i>akatok</i>
Genitive	<i>akaŋ-</i>	<i>akaŋmi</i>
Ablative	<i>akaŋ-</i>	<i>akakpaŋ</i>
Locative	<i>aka-, akaŋ-</i>	<i>akapiʔ, akakpiʔ</i>

lexeme meaning “day” in Mewahang and by external Upper Arun cognates for the presumed lexical root *sen-* of *setta*, namely Lohorong *sensen* “all night” and Yamphu *senda* “night”.¹⁹

- (13) a. *letta*
 len-ta
 day-LOC
 “During the day, daytime”
- b. *seta*
 sen-ta
 night-LOC
 “At night, during the night”
- c. *yuta*
 yu-ta
 evening-LOC
 “In the evening”

In addition to these suffixes which are the trigger of oralization on the verb coda, the oblique stem of the first person pronoun, *akaŋ-*, is the locus of oralization in inflected forms with a suffix with voiceless obstruent onset, namely *-piʔ* “LOC” and *-paŋ* “ABL”. Table 5 shows the case paradigm of the first person singular pronoun, including the oralized forms *akakpaŋ* and *akakpiʔ*. Note that for the locative, both the basic and the extended, oblique pronominal stem may be used.

The nominal possessive prefixes *aŋ-* “1SG”, *am-* “2SG” and *om-* “3SG” are another locus of oralization when added to nominal stems with initial voiceless obstruent, but since they seem to have been oralized only irregularly, they are discussed below in section 5.2.

4. Explanatory potential

This section illustrates the explanatory potential of the recognition of the sound change of oralization for certain morphophonological and morphological peculiarities in Western Mewahang verbal morphology.

19 The suffix *-ta* may be cognate to the alveolar-initial locative case markers attested in Southern Kiranti, e.g. Bantawa *-da* (cf. Gerber 2022a). However, the sound correspondences here are irregular, as Southern Kiranti *d* regularly corresponds to Upper Arun *d*, not *t*. The cognacy of these suffixes and the reason for the irregular sound correspondences must be investigated in future research.

The recognition of the sound change of oralization allows for a diachronic evaluation of the first person oral agreement suffixes *-ak* and *-k*, for the internal reconstruction of the allomorphy of non-past tense suffixes and causative prefixes and for an explanation of the stem alternation between nasal and homorganic stop observed for certain verbs. These topics are discussed in sections 4.1–4.4.

4.1. Oral agreement suffixes

Mewahang indexes a first person singular actant with a velar nasal, which is a widespread and old etymon in Trans-Himalayan (cf. Bauman 1975; DeLancey 1989; van Driem 1993). However, Mewahang also shows another set of first person indices which are characterized by a final velar oral stop, namely *-ak* and *-k*, with identical distribution as *-aŋ* and *-ŋ*, i.e. *-aŋ* ~ *-ak* for intransitive forms and transitive forms with a first person singular patient in the affirmative non-past tense, and *-ŋ* ~ *-k* for intransitive forms and transitive forms with a first person singular patient in the past tense and transitive forms with a first person singular agent and a third person singular patient, see examples (14a)–(14c).

- (14) a. *aka ne tsaʔak*
 aka ne ca:ˈk-ak
 1SG also eat-NPT-1SG
 “I am also eating [now].”
- b. *oʃaʔa pɛːtak*
 oː-saʔa pɛːtt-a-k
 3SG-ERG scold-PT-1SG
 “He scolded me.”
- c. *aka yəkʃeː khimma fuuːkuuk*
 aka yokse: khin-ma hus-k-u-k
 1SG carrying.basket carry-INF can-NPT-3.P-1SG
 “I can carry a carrying basket (*doko*)”

The functional difference to the corresponding forms with a velar nasal seem to be mainly discourse-oriented and pragmatic, although a definitive analysis is still outstanding. Since this is a similar difference to that between the plain nasal endings and the nominalized forms (cf. section 3.2.2) and since the addition of the nominalizer *-pu* to the first person nasal endings caused the oralization of the final nasal, there are semantic as well as formal indications that the oral endings result from back formation of earlier *-(a)kpu* (cf. Gerber 2020). While this is still a mere hypothesis that needs to be tested in future research, alternative explanations are not easy to find. A retention from an earlier language stage is implausible, given that no other Upper Arun or Eastern Kiranti language with cognate morphology shows such doublets, and other sources for a recent innovation in Mewahang have not been detected either.

4.2 Non-past marking

Tense marking in Mewahang is based on a primary, equipollent opposition between past and non-past, whereby past is marked by the suffix *-a* and non-past

by an array of different suffixes, namely *-k*, *-uk* and *-yuk*, which can be analysed as allomorphs of the same morpheme, internally reconstructible as **-yuk* (cf. Gerber 2022b). That these different allomorphs are historically related can be shown with the following data, which directly relate the allomorphy to the process of oralization. Examples (15a)–(15d) show the use of the allomorph *-k*, which is employed with vowel-, sibilant-, and nasal-final verb stems.

- (15) a. *nam i:kpu*
 nam is-k-puu
 sun be.negative-NPT-NMLZ
 ‘‘There is no sunshine.’’
- b. *honan hade ta:ʔnam*
 honan hade ta:k-na-m
 now when appear-NPT-2SG-NMLZ
 ‘‘So, when will you come [again]?’’
- c. *lomkutsibha*
 lom-k-u-ci-pha
 beat-NPT-3.P-3NSG-Q
 ‘‘Are you going to beat them up?’’
- d. *khaŋkubuu waʔa*
 khaŋ-k-u-puu wa:ʔa
 look-NPT-3.P-NMLZ chicken-ERG
 ‘‘It’s [only] looking at it, the chicken.’’

The observation relevant here is that the non-past marker in examples (15c)–(15d) does not trigger oralization, although synchronically there are direct sequences of nasal and voiceless obstruent. This irregularity can be explained by assuming that the non-past allomorph in this environment historically did not start in *k*, but in an element which did not trigger oralization, i.e. a sonorant. Given the other non-past allomorphs *-uk* and *-yuk* with initial sonorants, a very plausible hypothesis would be that the allomorph *-k* historically also had the form **-uk* or **-yuk*.²⁰ The complementary distribution of the three non-past allomorphs further supports this assumption,²¹ although the conditions for the

20 The evidence of verbs with the complex codas **-nt* or **-ŋt* (cf. section 4.4), which show the non-past stem forms *-n-k-* and *-ŋ-k-*, respectively, allows us to state with some confidence that for these verbs and, by logical extension, also for verbs on simple nasal as in examples (15c)–(15d), the non-past marker must originally have been **-yuk* and not **-uk*. The vowel-initial allomorph **-uk* would not have blocked the oralization of the complex codas by the augment **-t*, i.e. **-nt-uk* > **-tt-uk* and **-ŋt-uk* > **-kt-uk*, with the subsequent reduction of the non-past marker to *-k* leading to the unattested synchronic non-past stem forms **-t-k-* and **-k-k-*. By contrast, the assumption of a glide-initial non-past marker **-yuk* with these verbs results in the attested synchronic non-past forms mentioned above, first by causing the complex codas to be reduced because of their syllable-final position, i.e. **-nt-yuk* > **-n-yuk* and **-ŋt-yuk* > **-ŋ-yuk*, and subsequently by the reduction of the non-past marker **-yuk* to *-k*.

21 The allomorph *-uk* appears with stems in labial and velar stops, cf. *dab-uk-* ‘‘come.NPT’’ and *ŋa:g-uk-* ‘‘demand.NPT’’ and the allomorph *-yuk* is used with certain verbs ending in

reduction of **-yuk* to *-uk* after non-alveolar stops and to *-k* after vowels, nasals, and the sibilant *s* are not yet fully understood.

Importantly, it is the recognition of the sound change of oralization which compels us to identify the lack of oralization before non-past *-k* as unexpected and indirectly provides evidence for its etymological identity with *-uk* and *-yuk*.

4.3. Causative prefix **yaŋ-*

Certain transitive verbs of direction exhibit a prefix *ya-* ~ *yam-* ~ *yak-*, namely *yamdapma* “to bring across”, *yakhε?ma* “to take away”, *yake?ma* “to bring up”, *yakuŋma* “to bring down”, and *yakte?ma* “to bring”. The isolation of a causative prefix is justified by morphological minimal pairs for these verbs, cf. *dapma* “to come across”, *khe?ma* “to go away”, *kε?ma* “to come up, ascend”, *kunma* “to come down, descend” and *ta.ma* “to come from far, to appear”. The prefix is an innovation of Mewahang, since Lohorung and Yamphu differentiate these morphological minimal pairs exclusively by a valence-increasing suffix *-t* (cf. section 3.1), whereas Mewahang reinforced this suffix with a prefix, the source of which is unknown.²²

The prefix shows an idiosyncratic allomorphy, occurring as *ya-* before a velar stop, as *yak-* before a voiceless alveolar stop and as *yam-* before a voiced alveolar stop. The consideration of the sound change of oralization allows for the internal reconstruction of the causative prefix and accounts for a part of the allomorphy observed. Conceivably, the sound change of oralization also affected this prefix, the allomorph *yak-* in *yakte?ma* therefore reflecting the oralization of the nasal before *t*. The different place of articulation of the nasal in *yamdapma* and the stop in *yakte?ma* looks like an obstacle to this analysis, but the modern Western Mewahang form *yamdapma* can be identified as innovative, since Eastern Mewahang shows *yaŋdapma*, and Hodgson (1857: 366) recorded the form *yangdāppu* also for “Báláli”, i.e. Western Mewahang. Thus, we can assume that the prefix was originally **yaŋ-* and was oralized before *t* to *yak-* and changed to *yam-* before *d*. A plausible phonetic explanation for the latter

an alveolar stop with loss of the alveolar stop and compensatory lengthening, e.g. *the:-yuk-* “lift.NPT” vs. *thed-a-* “lift.PT”.

22 The assumption of a recent innovation is supported by the fact that the verb *yamdapma* “to bring across” still appears without the prefix in the Mewahang word list of Hodgson (1857: 366), alongside the prefixed form, e.g. *dāppu* ~ *yangdāppu* “bring [actually IMP]”. The need for a reinforcement of the inherited applicative suffix *-t* in Mewahang may have come about by the loss of the suffix as a separate segment. In Mewahang as well as in Lohorung, the suffix is only indirectly preserved with stop-final verbs in the consistent voicelessness of this stop, cf. Mewahang *yamdap-uŋ* and Lohorung *dap-uŋ* “I brought it across” (< **dap-t-*), whereas verbs ending historically in a simple stop show lenition in intervocalic position, cf. Mewahang *dab-aŋ* and Lohorung *dab-iŋ* “I came across” (< **dap-*). An intermediate state is attested in the wordlist by Hodgson (1857: 366), where the verb “to bring across” in both Mewahang and Lohorung is recorded with a geminated *p*. Another indirect trace of the suffix *-t* is found in Mewahang verbs with the stem alternation *-n* ~ *-t* and *-ŋ* ~ *-k*, cf. section 4.4. Yamphu, in contrast to Mewahang and Lohorung, has preserved the suffix *-t* intact as a separate segment, cf. *khi:-?apt-uŋ* “I brought it, carrying it on my back” (< **dap-t-*, only attested as auxiliary) vs. *ab-iŋ* “I came” (< **dap-*).

change is outstanding and the assumption therefore remains speculative. For verbs with initial velar stop, the sequence **-kk-* was degeminated after the oralization, hence **yaŋ-k-* > **yak-k-* > *ya-k-*.²³ The consideration of the sound change of oralization thus allows us to trace all the allomorphs of the causative prefix back to a single form **yaŋ-*.

4.4. Nasal–oral stem alternation

A group of verbs in Mewahang exhibit a stem alternation between nasal and homorganic oral stop, e.g. *len-* ~ *let-* “to come out, leave”, *lin-* ~ *lit-* “to be heavy”, *sin-* ~ *sit-* “be sour” or *yakuŋ-* ~ *yakuk-* “to bring down”. These verbs show the nasal coda before consonantal suffixes and the stop coda before vocalic suffixes, as shown in examples (16a)–(16d). Since there are verbs which invariably show a nasal or stop coda, cf. examples (16e)–(16h), the verbs with the alternation between nasal and stop can internally be reconstructed with a complex coda of nasal plus stop, i.e. **-NC*, which became **-CC* by means of oralization and was later degeminated to *-C* before vowel-initial suffixes. Before consonant-initial suffixes, however, the final stop was dropped in a cluster reduction process and oralization did not take place, so that in this environment, the modern outcome is a simple nasal.

- (16) a. *lenʔaŋ*
 lent-k-aŋ
 come.out-NPT-1SG
 “I am leaving.”
- b. *letaŋ*
 lent-a-ŋ
 come.out-PT-1SG
 “I left.”
- c. *yakuŋkuŋ*
 yakuŋt-k-u-ŋ
 bring.down-NPT-3.P-1SG
 “I will bring him down.”
- d. *yakukuŋ*
 yakuŋt-a-u-ŋ
 bring.down-PT-3.P-1SG
 “I brought him down.”
- e. *denuŋ*
 den-a-u-ŋ
 sell-PT-3.P-1SG
 “I sold it.”
- f. *khɛʔŋana*
 khɛt-ŋa-na

23 The degemination of homorganic stops is also observed elsewhere in Mewahang, cf. sections 2, 3.2.1 and 4.4.

go-1SG-NEG
 “I’m not going.”

g. *khaŋuŋ*
 khaŋ-a-u-ŋ
 look-PT-3.P-1SG
 “I looked at it.”

h. *puuk²na*
 puuk-na
 become-NEG
 “It is not necessary.”

Although the final oral stop is not directly retained in the Mewahang forms in examples (16a)–(16d), there is indirect evidence that the final stop was **-t* for all verbs with **NC-coda*, namely that most Kiranti languages, including all Upper Arun languages, exhibit a stem augment *-t* (cf. section 3.1). This augment has different functions (cf. Michailovsky 1985; Jacques 2017: 180–85, 207), i.e. causative, applicative, denominal derivation and deponent, and is likely to stem from more than one etymological source (cf. Jacques 2017: 180–85, 207). Although the exact individual etymologies still need to be worked out for Mewahang, it is clear from the comparative evidence that all the verbs with a complex **NC-coda* involve the augment *-t* and therefore had the form **-Nt*. A question not yet conclusively clarified and to be addressed in future research is whether the oralization of this complex coda in Mewahang reflects the Mewahang-specific oralization sound change or the older process of denasalization of nasal verb codas caused by the augment *-t* also attested in other Kiranti languages (cf. section 3.1).

5. Exceptions

The sound change of oralization shows some exceptions, that is morphemes that seem not to or only sporadically to have triggered or undergone the process of oralization, although the conditions seem to be met on first sight.

One important reason for exceptions to the regularity of oralization is the fact that Mewahang is an endangered language no longer actively transmitted to children, and the resulting fading of language competence among the younger generation. This has led to a regularization of stem forms, i.e. the oralized allomorphs are replaced by the more regular and transparent free-standing allomorphs, e.g. *haksili* “dance performed during house consecrations” (cf. Gaenszle 2000: 263–4) is replaced by *hansili* due to the identification of the lexical element *haŋ* “king” in this compound. Such morphophonological regulation and reduction of complexity is a typical pattern of change in endangered languages (cf. Campbell and Muntzel 1989).

Besides these “re-nasalizations” caused by exaggeratedly cautious etymological analysis and language attrition, there are analytically more substantial exceptions to the oralization sound change. This concerns cases where oralization did not take place at all, or only in a few cases of the same environment, although the necessary phonological conditions were met. Since these

irregularities cannot be explained conclusively at the moment, and since exceptions to sound laws are to be treated as “problems” to be solved in further research rather than “methodological insights worthy of incorporation into the practice of historical linguistics” (Fellner and Hill 2019: 110), this section is basically restricted to listing these irregularities to lay a foundation for future research on the topic.²⁴

5.1. Cotemporal adverbializer *-saʔa*

The cotemporal adverbializer *-saʔa* is sometimes observed to have triggered oralization, as shown in example (17a). More often, however, the suffix did not affect stem-final nasals, as in examples (17b)–(17e), in example (17b) even with the same verb as in example (17a).

- (17) a. *mu: duksaʔa tsannukpu*
 mu: duŋ-saʔa canus-k-pu
 fire warm.up-ADVS.CTP be.tasty-NPT-NMLZ
 “Warming up oneself at the fire, it’s cosy.”
- b. *mu duŋçaʔa tsama*
 mu: duŋ-saʔa ca:-ma
 fire warm.up-ADVS.CTP eat-INF
 “Let’s eat, warming ourselves at the fire!”
- c. *kuŋwa duŋçaʔa tɛhu:çi kheʔma*
 kuŋwa duŋ-saʔa chus-si khet-ma
 water drink-ADVS.CTP urinate-PURP go-INF
 “By drinking [a lot of] water, it’s going to pee.”
- d. *makhaŋsaʔa*
 ma-khaŋ-saʔa
 NEG-look-ADVS.CTP
 “[Me] not looking . . .”
- e. *pensaʔa*
 pen-saʔa
 sit-ADVS.CTP
 “Sitting . . .”

A lexicalized instance of oralization caused by *-saʔa* is the morphologically complex adverbializer *-loksaʔa*, which is composed of the consecutive marker *-loŋ* followed by the cotemporal adverbializer *-saʔa*, cf. examples (18a)–(18b).

- (18) a. *itsiga tɛm tsa:loksaʔa khedatsiga*
 iciga cam ca:-loŋ-saʔa khet-a-ci-ka
 1DU.EXCL cooked.rice eat-ADVS.CNS-ADVS.CTP go-PT-DU-EXCL
 “Having eaten, the two of us will leave.”

24 Besides the cases discussed here, where oralization generally did not take place, there are other morphemes that show a degree of variation, but where it is not possible quantitatively to assess whether oralization in general did or did not take place, e.g. the similari-tive case suffix *-tok* (cf. section 3.3.2).

- b. *toŋlokçaʔa lomkippu*
 toŋ-loŋ-saʔa lom-k-in-puu
 match-ADVS.CNS-ADVS.CTP beat-NPT-1PL-NMLZ
 “Having come to an agreement, they will beat us up.”

There are two potential explanations for the inconsistency of oralization with the adverbializer *-saʔa*. The first is that *-saʔa* is phonologically less bound than suffixes that consistently cause oralization. The sporadic oralization in some instances may be caused by the high salience of the phonological process of oralization in the synchronic morphophonology of Mewahang, i.e. as a process of analogical extension of oralization to instances where the conditions are actually not met. The second explanation is to assume analogical levelling of erstwhile oralized forms in favour of a consistent nasal stem. This, however, is less likely given the fact that for other suffixes, there is no inconsistency in oralizing nasal-final stems.

5.2. Possessive prefixes

Mewahang exhibits a set of possessive prefixes for singular referents, namely first person *aŋ-*, second person *am-* and third person *om-*. When added to the kinship terms *pa:pa* “father” and *cha* “child”, the nasal coda of these prefixes are oralized, as shown in the first part of Table 6. The non-oralized form for “my father”, i.e. **aŋpa*, was consciously rejected by speakers of Mewahang. However, with most other nominal stems, oralization does not seem to have taken place, as the second part of Table 6 illustrates. When the abundant Nepali (ad hoc) loan words are combined with possessive prefixes, these likewise show the nasal, i.e. non-oralized form, e.g. *am-parivār* “your family”, *om-citra* “its picture”, *om-chāyā* “its shadow”. Three nominal stems in the data corpus, namely *ten* “village”, *khum* “house” and *takro* “head”, however, are attested in both variants, conditioned by inter-speaker variation.²⁵

The inconsistency of possessive prefixes to show the expected oralization is not understood so far and awaits further investigation. As with the adverbializer *-saʔa*, there are basically two explanations. The small number of nominal stems that actually trigger oralization implies that the prefixes were originally not affected by oralization, possibly because of having been only loosely bound phonologically to the nominal stem. The variation that is observable may indicate that the possessive prefixes are sporadically being oralized before voiceless obstruents due to analogical extension, primarily affecting those nominal stems that are most frequently used with possessive prefixes, namely basic kinship

25 In one case, a speaker first used the oralized variant, before correcting herself and using the nasal variant, viz. example (19), so that there also seems to be some intra-speaker variation.

(19) *apkhupi- amkhubi na .. ʔi:ʔminlo anin khum- khum- khumnuppuloō ki iʔ- iyu- kniphui?*
 am-khum-pi na si:-k-min-lo anin khum-k-n-u-m-puu-lo ki_{NEP} it-yuk-nin-pha
 2SG.POSS-house-LOC PRCL.FOC die-NPT-3PL-ADVS.CTP 2PL bury-NPT-2-3.P-SAP.PL.
 A-NMLZ-Q or burn-NPT-2PL-Q
 “And at your-, your place . . ., when people die, do you bury-, bury them or do you bu-, burn [them]?”

Table 6. Oralization with possessive prefixes

Nominal stem	Examples
<i>pa.pa</i> “father”	<i>akpa</i> “my father”, <i>appa</i> “your father”, <i>oppa</i> “his father”
<i>cha</i> “child”	<i>akcha</i> “my child”, <i>opcha</i> “his child”
<i>pui?</i> “language”	<i>aŋpu?</i> “my language”
<i>pe?la</i> “neck”	<i>aŋpe?la</i> “my neck”
<i>phoba</i> “grandfather”	<i>aŋphoba</i> “my grandfather”
<i>taŋa?</i> “hair”	<i>aŋtaŋa?</i> “my hair”
<i>tho?</i> “innards”	<i>omtho?</i> “its innards”
<i>thapma</i> “wife”	<i>aŋthapma</i> “my wife”
<i>thappa</i> “husband”	<i>aŋthappa</i> “my husband”
<i>kocuma</i> “dog”	<i>aŋkocuma</i> “my dog”
<i>koyeŋ</i> “maternal uncle”	<i>aŋkoyeŋ</i> “my mother’s brother”
<i>keŋ</i> “tooth”	<i>aŋkeŋ</i> “my tooth”
<i>ke?</i> “side”	<i>aŋke?pi?</i> “beside me [lit. on my side]”
<i>khen</i> “wet side dish”	<i>aŋkhen</i> “my lentil soup”
<i>khambe?</i> “mouth”	<i>amkhambe?</i> “your mouth”
<i>caca</i> “grandchild”	<i>aŋcaca</i> “my grandchild”
<i>suiŋ</i> “wood”	<i>aŋsuiŋ</i> “my firewood”
<i>saho?</i> “skin”	<i>omsaho?</i> “its skin”
<i>ten</i> “village”	<i>aŋten</i> “my village”, <i>amten</i> vs. <i>apten</i> “your village”
<i>takro</i> “head”	<i>aŋtakro</i> vs. <i>aktakro</i> “my head”
<i>khum</i> “house”	<i>aŋkhum</i> vs. <i>akkhum</i> , “my house”, <i>amkhum</i> vs. <i>apkhum</i> “your house”, <i>omkhum</i> “his house”

terms. Another possibility is that the possessive prefixes originally underwent oralization consistently and that the alternation between nasal and oral coda was subsequently levelled analogically in favour of the nasal coda, except for a few frequent lexemes, including basic kinship terms.

5.3. *anci* “the two of you”

The second person dual pronoun of Western Mewahang, *anci*, does not show the expected oralized form, i.e. **atci*. A possible explanation for this is that the form *anci* in Mewahang is the result of analogical restoration of the nasal under the influence of the singular and plural forms *ana* and *anin* after the oralization, i.e. **anci* > **atci* → *anci*. However, it is also conceivable that the nowadays disyllabic form *anci* is recent and derives from earlier **anaci*, transparently built on the second person singular pronoun *ana*, and was therefore not affected by oralization. In fact, Hodgson (1857: 358) recorded the form *anáchí* for Mewahang in the 1850s, and modern Eastern Mewahang shows *anaci*, too. However, Lohorong as well as the Khambu languages Kulung and Nachiring show the form *anci*, suggesting either that this form is older than the Mewahang-specific oralization sound change and that the forms in Hodgson (1857) and Eastern Mewahang reflect an analogical extension of the root *ana-*

to the dual form, or that Khambu, Lohorong, and Western Mewahang all independently changed inherited **anaci* to *anci*.²⁶

6. Summary

This paper presented and discussed the sound change of oralization that took place in the common ancestor of all Mewahang dialects, and constitutes an innovation that defines Mewahang within Upper Arun. The sound change is visible in compounding, derivational and inflectional morphology as well as in general phonotactic restrictions.

The historical process of oralization has left prevailing traces in the synchronic morphophonology in that it caused predictable and transparent stem alternations. As a consequence, oralization is readily transmitted to new forms by analogy in present-day Mewahang and speakers may construct new forms like *khotakpi* ‘in Khotang (district)’ or *nachirikpaŋ* ‘from Nachiring [i.e. in the Nachiring language]’. Once, a cheerful speaker spontaneously came up with the neologism *Yagakpa* to designate the imaginary male counterpart of the female harmful spirit or witch *Yagaŋma*, using the male gender suffix *-pa* (see section 3.2.2). Another speaker even used an oralized allomorph of the question formative *ŋ-* in combination with an ad hoc borrowing from Nepali, i.e. *sāhro* ‘hard’, in the sentence *uk-sa:ro huukwaba lus-a-bha* [Q-hard wind to.be.felt-PT-Q] ‘What kind of wind is that?/How violently the wind blows!’

Despite its prevailing status, the sound change shows certain so far inexplicable exceptions which need to be scrutinized in future research. Some of these morphemes were originally probably not affected by the sound change, probably due to prosodic distance from the conditioning environment, and are only nowadays partially realized in oralized variants because of the salience of oralization for the speakers of Mewahang. Other instances of unexpected nasal forms may be attributed to analogical levelling of formerly oralized forms.

Abbreviations

1	First person	IMP	Imperative
2	Second person	INCL	Inclusive
3	Third person	INF	Infinitive
>	Sound change	LEV	Level
→	Analogical change / transitive relationship	LOC	Locative
A	Agent	NEG	Negative
ABL	Ablative	NEP	Nepali
ACT	Action	NMLZ	Nominalizer
ADVS	Adverbializer	NPT	Non-past
AFF	Affirmative	NSG	Non-singular

26 If the pronoun had the form **anci* already in Pre-Upper Arun, the regular outcome in Proto-Upper Arun would be **enci* (cf. section 2). The fact that this is not the attested reflex is a further argument that the change **anaci* > *anci* in Western Mewahang is rather recent and, thus, independent of the one in Khambu. However, it is also possible that the form **enci* existed at a point in time and that *anci* was only later analogically restored.

ANIM	Animate	OCC	Occasional
AUX	Auxilliary	P	Patient
CLASS	Classifier	PERF	Perfect
CNS	Consecutive	PL	Plural
COM	Comitative	PRTCL	Particle
CTP	Cotemporal	PT	Past
DEM	Demonstrative	PURP	Purposive
DU	Dual	Q	Question
EMPH	Emphasis	S	Subject of intransitive verb
ERG	Ergative	SG	Singular
EXCL	Exclusive	SIM	Similaritive
FOC	Focus	UP	Upwards
GEN	Genitive		

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