THE PHONEMIC INVENTORY OF SIKLES GURUNG

Danielle Ronkos

This paper describes the consonant and vowel phonemes of the variety of Gurung, or Tamu Kyui, spoken in Sikles Village. Unlike other documented varieties, Sikles Gurung is analyzed with contrastive vowel duration, word-initial obstruent voicing, and two register categories. This analysis is supported by data collected with the help of Sikles speakers living in Nepal and New York City.

Keywords: Gurung, phonology, phonetics, Tamangic

1. The Gurung language

Gurung, or Tamu Kyui, is the language of the Gurung, or Tamu, people. Linguists have classified the Gurung language as a member of the Tamangic subfamily of the Tibeto-Burman language family, where it is closely related to other languages of Nepal such as Tamang, Manange, Nar Phu, Thakali, Seke, and Chantyal (Delancy, 2003; Noonan, 2008). Because Gurung is the name of both a people and their language, it is unclear how many speakers of Gurung there actually are; 2011 Nepal census reported as many as 325,622 speakers in Nepal, but it is likely this number is inflated (Glover & Landon, 1975; Hildebrandt, 2004; Noonan, 2008). Linguists also do not know how many Gurung speakers reside outside of Nepal's borders, although there are established Gurung communities in many parts of the world, including Belgium, Hong Kong, India, Portugal, Singapore, the United Kingdom, and parts of the United States. The majority of Gurung speakers, including those who helped with this study, are also fluent speakers of Nepali. There is concern in some diaspora communities that younger generations are learning to speak only Nepali, and that knowledge of the Gurung language is being lost.

Gurung is listed under a single ISO code, GVR ISO 639-3 (Lewis, Simons & Fennig, 2017). Within this single language, there can be extensive variation, as pointed out by several sociolinguistic surveys of the Gurung varieties spoken in different villages in Nepal (Glover & Landon, 1975; Chalise & Rai, 2014; Swenson, 2015). Researchers report that Gurung can noticeably vary from one river valley to another, and even from one village to another. In addition to the broader linguistic surveys, descriptive work has been done on the varieties of Gurung spoken in Ghandrung (Burton-Page, 1955), Ghachok (Glover, 1969; Glover & Glover, 1972; Glover, 1974; Glover et al. 1977 among others), Mohoriya (Pignède, 1993), Thak (Sprigg, 1997), Syangja (Nishida, 2004), Sikkim (Nakkeerar, 2009), Sikles (Ronkos, 2020), and Manang and Lamjung (Hildebrandt forthcoming). This paper focuses on the variety of Gurung spoken in Sikles Village, and the ways it is similar to and different from other documented varieties.

2. Sikles Gurung

Sikles Village, or Tsili Nããsa, is located north of Pokhara in the Kaski District. Sikles is one of the largest Gurung villages in Nepal, with several thousand families reportedly living there. Residents speak the local variety of Gurung with each other, though Nepali is taught in the local schools. Nepali is also the language used in formal situations or with people from outside of the village. The data analyzed in this paper was collected with the help of Sikles speakers living in both New York City and Nepal between 2014 and 2018. The following sections present an overview of the phonemic inventory of Sikles Gurung, highlighting areas where it differs from descriptions of other varieties.

3. Obstruents

This section focuses on the obstruents of Sikles Gurung: the stops /p, pʰ, b, ʈ, ʈʰ, ɖ, ʈ, ʈʰ, ɖ, k, kʰ, g/, affricates /ʦ, ʦʰ, ʣ/, and fricatives /s, ɬ, h/. While the stops and affricates have a three-way laryngeal contrast, particularly in the word-initial position, the fricatives are all phonemically voiceless. Minimal and near-minimal sets illustrating the three-way laryngeal contrast for stops and affricates are listed in (1). Note that due to the comparatively small number of words beginning with voiced obstruents in this variety, it is not

possible in all cases to provide exact minimal sets. Transcriptions follow the conventions of the International Phonetic Alphabet (IPA).

(1) /pjɵ̃:bʌ/ ‘to resemble’
/pʰjɵ̟:bʌ/ ‘to clean’
/bjɵ̃:bʌ/ ‘to throw away’

/t̪ɵ̟:bʌ/ ‘to have to’
/t̪ʰɵ̃:bʌ/ ‘to open (something)’
/d̪ɵ̃:bʌ/ ‘to beat, to thresh’

/ʈibʌ/ ‘to live, to sit, to stay'
/ʈʰibʌ/ ‘to strike a match’
/dʐ̪ŋgʈɛ/ ‘skinny, skin and bones (rude)’

/kõ:bʌ/ ‘to echo’
/kʰõ:bʌ/ ‘to be greedy’
/go:bʌ/ ‘to blow (by shaman)’

The three-way laryngeal contrast for stops and affricates is clearly visible in the waveforms made from recordings of Sikles Gurung speech. The example below shows waveforms of a single speaker saying the first syllable of the first minimal set transcribed above in (1) produced using Praat (Boersma & Weenink, 2016). There is a clear difference between the short Voice Onset Time (VOT) of the unaspirated stop /p/, the longer VOT of the aspirated stop /pʰ/, and the prevoicing (or negative VOT) throughout the closure period of the voiced stop /b/.

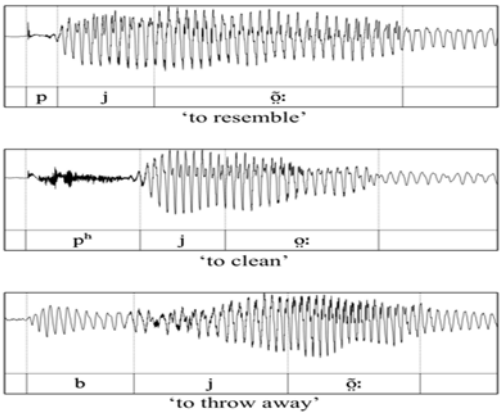


Figure 1: Illustration of 3-way laryngeal contrast in the speech of Speaker 1

In work on Ghachok Gurung, Glover (1969) noted an asymmetry in the distribution of voiced stops and affricates in the word-initial position – he reports that within the lexicon, there are generally fewer voiced stops and affricates in the word-initial position than voiceless ones, and that voiced stops and affricates tend to occur preceding vowels carrying breathy phonation. This observation also holds for the obstruents of Sikles Gurung.

The three-way laryngeal contrast found in Ghachok and Sikles Gurung is not reported for other varieties of Gurung – Nishida (2004) analyzes Syangja Gurung with a four-way phonemic voicing and aspiration contrast, while Hildebrandt (forthcoming) reports that in Manang Gurung there is no voicing of stops word-initially.

Stops in Sikles Gurung have four contrastive places of articulation: bilabial /p, pʰ, b/, dental /t̪, t̪ʰ, d̪/, retroflex /ʈ, ʈʰ, ɖ/, and velar /k, kʰ, g/. A minimal set illustrating these four contrastive places of articulation is given below.

(2) /po:/ ‘leaf, bark'
/t̪o:/ ‘what'
/ʈo:/ ‘tumpline'
/ko:/ ‘blood'

The retroflex stops in Sikles Gurung are different from the retroflex stops found in Nepali, likely due to their historical origin from dental-stop plus rhotic /t̪r̪/ clusters (Michailovsky, 1988; Burton-Page, 1955). Some rhoticity is still audible in the speech of some Sikles Gurung speakers when pronouncing retroflex stops; this was also reported for speakers of Ghandrung Gurung by Burton-Page (1955). Retroflex stops are a common feature found in other Tibeto-Burman languages of Nepal, including Sherpa (Kelly, 2004), Manange (Hildebrandt, 2004), Tamang (Mazaudon, 2003), Nar-Phu (Hildebrandt & Noonan, 2017), and Seke (Honda, 2002).

Sikles Gurung has three affricates that also show a three-way laryngeal contrast in the word-initial position: /ʦ, ʦʰ, ʣ/. This is illustrated by the near-minimal set in (3). Note that there are only a handful of examples where voiced affricates occur word-initially in this variety; instead /ʣ/ is much more common in the word-medial position.

(3) /ʦõ:gu/ ‘cooking stand with three legs’
/ʦʰɔbʌ/ ‘to be fat; to look after cattle, to shepherd’
/ʣɵ̃:bʌ/ ‘to pour; to irrigate; to put’

Determining the place of articulation of these affricates has been difficult. Nepali has been shown to have a series of laminal-alveolar affricates (Clements & Khatiwada, 2007), and the Gurung speakers who assisted with this project have the intuition that the affricates of Sikles Gurung are not the same as the affricates of Nepali. Phonologically, Sikles Gurung affricates pattern with the alveolar fricative /s/ rather than the dentals /t̪, t̪ʰ, d̪, n̪/, but a palatography study like that conducted by Clements and Khatiwada (2007) for Nepali is needed to truly pinpoint the place of articulation of these sounds. It has been suggested that for some speakers of this variety there is a contrast between dental and alveolar affricates; however, this was not observed in the speech of the speakers recorded for this project. The only reliable change in place of articulation observed was due to immediately following front vowels or glides, which caused the affricates to be realized as palatalized allophones. This is illustrated in (4) by the pair /ʦu/ 'this' and /ʦju/ 'ten' where the initial affricate in /ʦju/ 'ten' is realized as palatalized allophone [ʧʲ] because of the immediately following front glide /j/.

(4) /ʦu/ → [ʦʷu] 'this'
/ʦju/ → [ʧʲu] 'ten'

The phonemic contrast between the three fricatives /s, ɬ, h/ in the word-initial position is illustrated by the minimal set in (5).

(5) /sõːbʌ/ 'to put out to dry'
/ɬõːbʌ/ 'to play'
/hõːbʌ/ 'to enter'

The lateral fricative /ɬ/ often corresponds to the cluster /kʰl/ in other Gurung varieties (Glover et al., 1977). When comparing Sikles Gurung with the variety spoken in Ghachok, there is a clear divide based on the phonation features of the following vowel: words in Ghachok Gurung beginning with /kʰl/ clusters followed by vowels with breathy phonation correspond to words in Sikles Gurung beginning with the lateral approximant /l/ (6); while words in Ghachok Gurung beginning with /kʰl/ clusters followed by vowels with modal phonation correspond to words in Sikles Gurung beginning with the lateral fricative /ɬ/ (7). The examples provided below represent a subset of the data following this pattern across Ghachok and Sikles Gurung. The Ghachok transcriptions are based on Glover et al.'s (1977) dictionary and have been transposed from the dictionary's orthography to follow IPA conventions.

(6)

Ghachok	*Sikles*	*Gloss*
/kʰljɐ̰/	/lɐ̰/	'owner'
/kʰljo̰/	/lo̰ː/	'place; sleeping place'
/kʰljɐ̰bri/	/lɐ̰bɽiː/	'shaman, holy man'

(7)

Ghachok	*Sikles*	*Gloss*
/kʰlji/	/ɬi/	'feces'
/kʰljĩ/	/ɬĩː/	'snow'
/kʰljõba/	/ɬõːbʌ/	'to play'

The fricatives /ɬ, h/ are overall low-frequency sounds in the lexicon, particularly when compared with the frequency of the alveolar fricative /s/. The fricative /h/ in particular is more common in words borrowed from Nepali – for instance the Nepali word <हिलो> /hilo/ 'mud' has been borrowed into Sikles Gurung as /hi̤ːl/.

4 Sonorants

The sonorants of Sikles Gurung include three nasals /m, n̪, ŋ/, a lateral approximant /l/, a retroflex rhotic trill /ɽ/, and three phonemic glides: labiovelar /w/, palatal /j/ and unrounded velar /ɯ̽/. The unrounded velar glide /ɯ̽/ corresponds to the low central glide described for other dialects of Gurung (Glover, 1969), as well as related languages like Marphali (Mazaudon, 2007).

Sikles Gurung nasals contrast for three different places of articulation: bilabial /m/, dental /n̪/, and velar /ŋ/. A minimal set illustrating this place of articulation contrast is provided below.

(8) /mãː/ 'mother'
/n̪ãː/ 'rain'
/ŋãː/ 'rim (of a container)'

Nasals in Sikles Gurung are realized as post-stopped allophones before oral (non-nasal) vowels. Examples where these post-stopped nasal allophones surface are listed in (9) with broad and narrow transcriptions.

(9) /mɔ̰/ [mᵇɔ̰] 'small bamboo'
/n̪ɔ/ [n̪ᵈɔ] 'weed'
/ŋɔ̰/ [ŋᵍɔ̰] 'forehead'

Sikles Gurung does not display a voicing contrast for the liquids /l, ɽ/, although such a contrast is

reported for other Tibeto-Burman languages of Nepal, including Seke (Honda, 2002), Thakali (Hari, 1970), and Yolmo (Gawne, 2016). A minimal pair illustrating the contrast between /l/ and /ɽ/ is provided in (10).

(10) /li̱ːbʌ/ ‘heavy’
/ɽi̱ːbʌ/ ‘to beg’

Although the IPA character /ɽ/ is typically used to represent a retroflex flap with a single closure, it is used in this description to represent a rhotic retroflex trill. This follows Ladefoged & Maddieson’s (1996) transcription of the rhotic retroflex trill in Toda, a Dravidian language of southern India, using /ɽ/. For some speakers of Sikles Gurung, this retroflex trill can also be pronounced with spirantization, which has also been reported for some varieties of Tibetan (Denwood, 1999; Leongue, 2018), Manange (Hildebrandt, 2005), and Ghandrung Gurung (Burton-Page, 1955). As discussed in detail in Ronkos (2020), there is a great deal of variation in the production of the Sikles Gurung rhotic, both across the speech of different speakers and across different lexical items.

Retroflexion seems to be a key phonological feature of the rhotic in Sikles Gurung; words borrowed from Nepali with retroflex stops are often phonologized into Gurung as rhotics. For example, the Nepali word <पहाड> /pʌhaɖ/ ‘foothills, hilly region’ has been adapted into Gurung as /pʌhaːɽ/. This is particularly expected for Nepali words with retroflex stops in the word-final position because they are typically pronounced by Nepali speakers as a retroflex flap allophone [ɽ] (Khatiwada, 2009). Furthermore, as mentioned in the section on obstruents, the retroflex stop series in Gurung has been shown to historically come from dental stop plus rhotic /tɽ/ clusters, suggesting retroflexion may have already been a feature of the rhotics in those clusters (Michailovsky, 1988; Burton-Page, 1955).

The lateral approximant /l/ contrasts with the lateral fricative /ɬ/. A minimal pair illustrating this contrast is given below. Note that /-bʌ/ is a suffix marking the infinitive form of these verbs.

(11) /lũbʌ/ ‘to break’
/ɬũbʌ/ ‘to empty a container, to flip upside down’

The three glides in Sikles Gurung have asymmetric distributions. The palatal glide /j/ occurs before back vowels /uː, u, oː, ɔ, aː, ʌ/, while the labiovelar glide /w/ occurs before the front vowels /iː, i, eː, ɛ/ and the low back vowels /aː, ʌ/. The unrounded velar glide /ɯ/, on the other hand, occurs only as the second consonant (C_2) in a syllable onset cluster, and even more specifically only occurs before front vowels. A minimal pair illustrating the contrast between /j/ and /w/ before low back vowels is provided in (12).

(12) /jaː/ ‘to be’
/waː/ ‘question particle’

A minimal pair showing the contrast between the two velar glides in the C_2 position of an onset cluster is listed in (13).

(13) /kwi̱bʌ/ ‘to beg’
/kɯi̱bʌ/ ‘to be late’

Consonants in Sikles Gurung have a close relationship with immediately following vowels or glides (Ronkos 2020). The two velar glides /w, ɯ/ pattern together with the back vowels in assigning allophonic secondary velar articulation to preceding consonants, while the palatal glide /j/ patterns with front vowels in assigning allophonic secondary palatal articulation to preceding consonants. Hari (1970) describes a similar phonological system for the obstruents and velar nasal stops in Thakali – before front vowels, the place of articulation of these consonants fronts; before low vowels, the place of articulation of these consonants backs; and before round vowels, these consonants are pronounced with a labial release.

5 Vowels

Sikles Gurung vowels contrast for height, backness, and rounding, as well as nasalization and duration, which will be indicated with diacritics. In addition to quantifiable differences in duration, mid and low vowels also have a qualitative difference between the long and short pairs, which is indicated by using different characters: /eː, ɛ, oː, ɔ, aː, ʌ/. This sets Gurung apart from languages like Japanese and Yolmo, in which short and long vowels have durational differences but not vowel

quality differences (Labrune, 2012; Gawne, 2016). The high back and mid back vowels of Sikles Gurung are round, as their characters suggest, while the low vowels are not. Additionally, vowels can be specified for breathy phonation or modal phonation as part of Gurung's register system; breathy vowels will be marked in transcriptions with the diacritic /V̤/. The register system of Sikes Gurung is the topic of the next section.

Table 1: Sikles Gurung vowel phonemic vowel inventory

	Front	Back
High	/iː, i/	/uː, u/
Mid	/eː, ɛ/	/oː, ɔ/
Low		/aː, ʌ/

The height, backness, rounding, and duration of vowels is contrastive in all positions in Sikles Gurung. Nasalization and breathy phonation are generally word-level processes. The near minimal set in (14) shows the contrast between vowels with different height and backness features.

(14) /kḭː/ 'you'
/keː/ 'work'
/kaː/ 'lid'
/koː/ 'blood'
/ku/ 'nine; chest'

The minimal pairs in (15) show the contrast between vowels with the same height and backness features but different duration features.

(15) /t̪iː/ 'load'
/t̪i/ 'corner'
/seː/ 'louse'
/sɛ/ 'meat'
/t̪aː/ 'needle'
/t̪ʌ/ 'axe'
/n̪oː/ 'garlic'
/n̪ɔ/ 'weed'
/kjuː/ 'sheep'
/kju/ 'water'

Vowel duration is not described as a robust contrastive feature for other documented varieties of Gurung. Instead, it is often characterized as marginal, and in the case of Ghachok Gurung only consistently realized for the low vowels (Glover 1969, 1974; Glover et al., 1977). The analysis of Sikles Gurung presented in this paper most closely aligns with the brief description of Mohoriya Gurung vowels provided in Pignède (1993). A number of other Tibeto-Burman languages of Nepal are described with vowel systems that include duration contrasts, including Tamang (Mazaudon, 2003, 2015), Seke (Honda, 2002), Kham (Watters, 2004), and Lamjung Yolmo (Gawne, 2016).

The minimal pairs in (16) show nasalization as a contrastive vowel feature in Sikles Gurung. Nasal vowels are also widely reported in other varieties of Gurung.

(16) /t̪ĩː/ 'heart (physical organ)'
/t̪iː/ 'load'
/sɯẽː/ 'heart (feelings)'
/sɯeː/ 'price'
/n̪ãː/ 'rain'
/n̪aː/ 'snot'
/pɽõː/ 'cow shed'
/pɽoː/ 'cliff'
/kũ/ 'urine'
/ku/ 'nine; chest'

6 Register

In addition to the features already addressed, vowels in Sikles Gurung carry contrastive breathy phonation that is part of a register system with two opposing categories: modal vowels with higher relative pitch, and breathy vowels with lower relative pitch. Minimal pairs illustrating the difference between these two register categories are provided below.

(17) /t̪ḭː/ 'sun'
/t̪ĩː/ 'heart (physical organ)'
/lɛ̤/ 'owner'
/lɛ/ 'tongue'
/n̪a̤ː/ 'outer ear'
/n̪aː/ 'snot'
/ʦɔ̰̃ː/ 'nest'
/ʦõː/ 'sister-in-law, daughter-in-law'
/kṵ/ 'umbrella'
/kũ/ 'urine'

Register systems are traditionally distinguished from tone systems by additional vowel quality features like phonation (Abramson & Luangthongkum, 2009). In the case of Sikles Gurung, the phonation contrast aligns with what Abramson & Luangthongkum (2009) describe as a

fairly typical pitch correspondence, where breathy phonation lowers the fundamental frequency of nuclear vowels. While other researchers working on other varieties of Gurung have characterized breathy phonation as a feature of two of four lexical tones (Glover & Glover, 1972; Sprigg, 1997; Nishida, 2004), this paper analyzes Sikles Gurung with only two pitch-based categories, in line with descriptions by Burton-Page (1955) and Pignède (1993). This is largely because the combination of vowel duration and a two-category register system is sufficient to account for all collected Sikles data. Pairs of words that fall into different tone categories in other varieties of Gurung are distinguished by some other feature in Sikles Gurung without an appeal to additional pitch-based categories. This can be a difference in vowel nasalization, as seen in the Sikles words that correspond to a minimal tone pair in Ghachok Gurung in (18), or even a difference in vowel height, as seen in (19). Most frequently, minimal tone pairs in Ghachok Gurung correspond to minimal pairs in Sikles distinguished by vowel length; examples of this are given in (20).

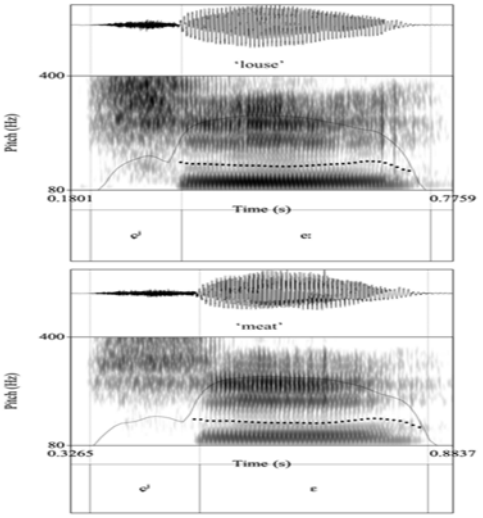
	Ghachok	*Sikles*	*Gloss*
(18)	/¹ɾu/	/ɾũː/	‘thread’
	/²ɾu/	/ɾu/	‘horn’

	Ghachok	*Sikles*	*Gloss*
(19)	/³tɻ̈/	/t̪ɛ̈/	‘time of year’
	/⁴tɻ̈/	/t̪ɻ̈ː/	‘load’

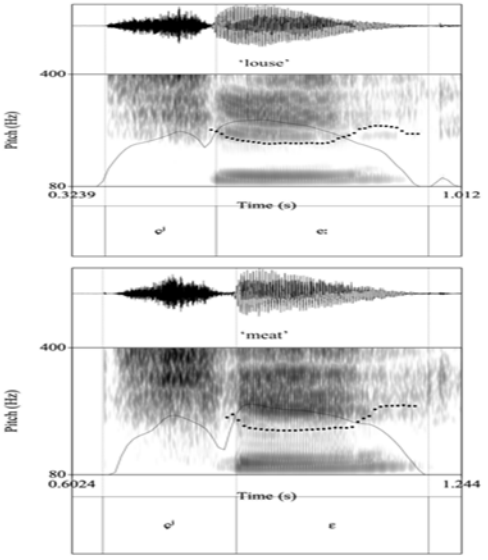
	Ghachok	*Sikles*	*Gloss*
(20)	/¹se/	/seː/	‘louse’
	/²se/	/sɛ/	‘meat’
	/¹to/	/t̪oː/	‘what’
	/²to/	/t̪ɔ/	‘wild pig’
	/¹ŋi/	/ŋiː/	‘seven’
	/²ŋi/	/ŋi/	‘we (exclusive)’

The spectrograms and waveforms in Figure 2 show recordings of three male speakers of Sikles Gurung saying the pair /seː/ ‘louse’ and /sɛ/ ‘meat’ in isolation (narrowly transcribed as [ɕʲeː] and [ɕʲɛ] in the accompanying Textgrids). Pitch tracks are indicated on the spectrograms below using dashed lines, and intensity is superimposed using solid lines. Note that for each Sikles speaker, the pitch track is all but identical across the two lexical items. Strikingly, the pitch track contour is different for each speaker: for Speaker 1 it is level, for Speaker 2 it is rising, and for Speaker 3 it is falling.

Speaker 1



Speaker 2



Speaker 3

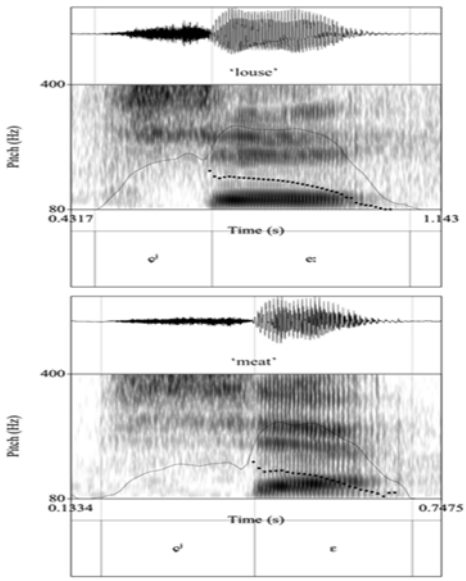


Figure 2: Spectrograms and waveforms of /seː/ 'louse' and /sɛ/ 'meat' for three Sikles Gurung speakers

These six recordings, along with recordings of other Sikles Gurung speakers saying these same lexical items, can be reliably identified as either /seː/ 'louse' or /sɛ/ 'meat' when played back to the primary language consultant for this project in a randomized order. Although these two lexical items represent a minimal tone pair in Ghachok Gurung, pitch clearly cannot be the distinguishing feature for these items in Sikles Gurung. Instead, aspects of contrastive vowel duration – including differences in the vowel formant structure and the intensity peak pattern – are hypothesized to be the perceptual cues that allow speakers to distinguish these lexical items. Future work will aim to tease these cues apart using perception studies.

7. Summary

This paper presents an analysis of the phonemic inventory of Sikles Gurung based on original data collected with the help of Sikles Gurung speakers. The overview it presents focuses on the aspects of Sikles Gurung that set it apart from other documented varieties. For the obstruents, these aspects include a three-way laryngeal contrast in the word-initial position, and the presence of the lateral fricative /ɬ/. For the sonorants, these aspects include the post-stopped nasal allophones that surface before phonemically oral vowels, as well as the analysis of the third glide as an unrounded velar /ɯ̨/. Additionally, Sikles Gurung shows robustly contrastive vowel duration at all vowel heights, and a two-category register system that combines breathy phonation with a basic high-low pitch dichotomy. Together these sound patterns characterize the variety of Gurung spoken in Sikles Village. This work contributes to linguists' knowledge of the kinds of language variation that exists among the Tibeto-Burman languages of Nepal, and establishes a point of comparison for future crosslinguistic work on Gurung and other Tamangic languages.

Acknowledgements

This work would not have been possible without the help of many people. I would especially like to thank Narayan Gurung and his family, Khim Gurung, Kumari Gurung and her parents, Iman Gurung, Suraj Gurung, Peu Maya Gurung and Saĩĩli, Khemar Gurung and his wife, Baabita Gurung, Mãã, Kaaji Didi and her children, Mãã and her husband, Roshni Gurung, Man Bahadur Gurung, Ruben Coppolse, and the principal and students of the secondary school in Sikles. Thanks also to Zach Wellstood and Lingzi Zhuang, and the Endangered Language Alliance in New York City. I am grateful for the feedback I have received from audiences at Linguistic Society of Nepal annual meetings, Linguistic Society of America annual meetings, several meetings of the South Asian Languages Analysis Roundtable, and PhonFest. Special thanks to Janel Swenson, who I met at my first LSN meeting. I am also grateful to the Endangered Language Initiative, the Lewis and Clark Fund, the Graduate Center Dissertation Fellowship, and the Provost's Pre-Dissertation Grant, all of which supported this research. Finally, I would like to thank Jason Kandybowicz, Suzanne van der Feest, Dianne Bradley, and Kristine Hildebrandt for helping me to polish the analyses and hypotheses presented in this work.

References

Abramson, A. S., & Luangthongkum, T. (2009). A fuzzy boundary between tone languages and

voice-register languages. *Frontiers in phonetics and speech science*, 149-155.

Boersma, P. & Weenink, D. (2016). Praat: doing phonetics by computer [Computer program].

Burton-Page, J. (1955). Two studies in Gurungkura: I. Tone; II. Rhotacization and retroflexion. *Bulletin of then School of Oriental and African Studies*, *17*(01), 111 119.

Chalise, K. & T. Rai. (2014). A Sociolinguistic Survey of The Gurung Language. *Linguistic Survey of Nepal.* Central Department of Linguistics, Tribhuvan University.

Clements, G. N., & Khatiwada, R. (2007). Phonetic realization of contrastively aspirated affricates in Nepali. In *Proceedings of the 16th International Congress of Phonetic Sciences* (pp. 629-632).

Dawson, W. (1980). Tibetan phonology. Doctoral dissertation, University of Washington.

DeLancey, S. (2003). Classical Tibetan. *The Sino-Tibetan Languages*, *3*, 255.

DeLancey, S. (2017). Lhasa Tibetan. *The Sino-Tibetan Languages, 2nd Edition*. Ed. by G. Thurgood & R. J. LaPolla. Routledge.

Denwood, P. (1999). *Tibetan* (Vol. 3). John Benjamins Publishing. Dixon, R. M., & Aikhenvald, A. Y. (2002). Word: a typological framework. *Word: A crosslinguistic typology*, *1*, 41.

Gawne, L. (2016). *A sketch grammar of Lamjung Yolmo*. Asia-Pacific Linguistics, School of Culture, History and Language, College of Asia and the Pacific, The Australian National University.

Glover, W. W. (1969). *Gurung phonemic summary* (Vol. 1).Summer Institute of Linguistics, Tribhuvan University. Glover, W. W. (1974). *Sememic and grammatical structures in Gurung (Nepal)*. Summer Institute of Linguistics.

Glover, W. W. & Glover, J. (1972). *A guide to Gurung tone*. Tribhuvan University & Summer Institute of Linguistics.

Glover, W. W., Glover, J. R. & Gurung, D.B. (1977). Gurung Nepali-English dictionary, with English-Gurung and Nepali-Gurung indexes, *Pacific Linguistics, Series C*, 51. Canberra: Australian National University.

Glover, W. W. & Landon, J. K. (1975). *Gurung dialects*. Summer Institute of Linguistics.

Government of Nepal National Planning Commission Secretariat, Central Bureau of Statistics (2011). *National Population and Housing Census*. Hari, M. (1970). Thakali segmental synopsis. *Tone systems of Tibeto-Burman languages of Nepal*, *1*, 258-78.

Hildebrandt, K. A. (2004). A grammar and glossary of the Manange language. *Tibeto-Burman Languages of Nepal: Manange and Sherpa, 241*.

Hildebrandt, K. A. (2005). A phonetic analysis of Manange segmental and suprasegmental properties. *Linguistics of the Tibeto-Burman area*, *28*(1), 1-36.

Hildebrandt, K.A. (forthcoming). A Grammar of Gurung. Mouton de Gruyter.

Hildebrandt, K.A. & Noonan, M. (2017). Nar-Phu. *The Sino- Tibetan Languages, 2nd Edition*. Ed. by G. Thurgood & R. J. LaPolla. Routledge.

Honda, I. (2002). Seke phonology: a comparative study of three Seke dialects. *Linguistics of the Tibeto-Burman area*, *25*(1), 191-210.

Kelly, B. F. (2004). A grammar of Sherpa. *Tibeto-Burman languages of Nepal: Manange and Sherpa*, 232-440.

Khatiwada, R. (2009). Nepali. *Journal of the International Phonetic Association*, *39*(3), 373-380.

Labrune, L. (2012). *The phonology of Japanese*. Oxford University Press.

Ladefoged, P., & Maddieson, I. (1996). *The sounds of the world's languages* (Vol. 1012). Oxford: Blackwell.

Leongue, V. (2018). *Structural Evolution of the Tibetan Syllable: A Cross-Dialectal Study* (Doctoral dissertation, Indiana University).

Lewis, M. P., Simons, G. F. & Fennig, C. D. (eds.) (2017). *Ethnologue: Languages of the World, Twentieth edition*. Dallas, Texas

Mazaudon, M. (2003). Tamang. The Sino-Tibetan Languages, ed. by G. Thurgood & R. J. LaPolla, 291–314.

Mazaudon, M. (2007). A low glide in Marphali. *Linguistics of the Himalayas and Beyond.*

Bielmeier, R. and Haller,F. (eds.), Trends in linguistics. Studies and monographs 196, Berlin, New York, Mouton de Gruyter. pp. 163-188.

Mazaudon, M. (2007). A low glide in Marphali. *Linguistics of the Himalayas and Beyond.*

Bielmeier, R. and Haller, F. (eds.), Trends in

linguistics. Studies and monographs 196, Berlin, New York, Mouton de Gruyter. pp. 163-188.

Mazaudon, M. (2015). The evolution of vowel length in TGTM (Tamangish) languages. Language and Culture in Northeast India and Beyond: In Honour of Robbins Burling, 23, ANU, pp.211-221, 2015, Asia-Pacific Linguistics.

Michailovsky, B. (1988). Phonological typology of Nepal languages. *Linguistics of the Tibeto-Burman Area*, *11*(2), 25-50.

Nakkeerar, R. (2009). *Gurung.* In Sikkim: Part-I, 456-498. Kolkata, India: Language Division Office of the Registrar General & Census Commissioner.

Nishida, F. (2004). A Phonology of Synagja Gurung. *Reitaku Journal of Interdisciplinary Studies,* 12 (1): 15-33.

Noonan, M. (2008). Contact-induced change. *Language contact and Contact languages*, *7*, 81.

Pignède, B. (1993). *The Gurungs: A Himalayan Population of Nepal*. Ratna Pustak Bhandar.

Ronkos, D. (2020). The Sounds of Sikles Gurung: A Phonetic and Phonological Description of a Tibeto-Burman Language of Nepal. Doctoral dissertation, The Graduate Center, CUNY.

Sprigg, R. K. (1997). *A tonal analysis of Gurung, with separate systems for register and contour pitch features.* Bulletin of the School of Oriental and African Studies, 60(03), 448-454.

Swenson, J. J. (2015). *A Sociolinguistic Survey of Gurung in Nepal*. Tribhuvan University & SIL International.

Watters, D. E. (2004). *A dictionary of Kham: Taka dialect (a Tibeto-Burman language of Nepal).* Central Department of Linguistics, Tribhuvan University.