PRELIMINARY PHONOLOGY OF RERA, A TANGSA VARIETY OF NORTHEAST INDIA1

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Abstract
This paper provides a synchronic phonological analysis of the Rera language, a Tangsa language of the Northern Naga subgroup of Tibeto-Burman. It is spoken by approximately 2,000 people in Northeast India. Based on the author’s own fieldwork, the study describes Rera Tangsa segmental phonology, tones, and phonotactics. It differs from four previously described Tangsa languages in that it does not distinguish aspiration. Rera does not distinguish diphthongs like three other Tangsa varieties but has a relatively simple vowel inventory with eight monophthongs, similar to Hawa-Lak with five monophthongs.

Keywords: Rera, Tibeto-Burman, phonology

ISO 639-3 codes: nst

1 Introduction
This paper provides a first description of the phonology of the Rera variety of Tangsa, a Tibeto-Burman language spoken in Northeast India with an estimated population of 2,000 speakers. They are commonly referred to by the exonyms Ronrang and Roira. Rera speakers themselves currently use the autonym Rera /re²ra², ru²ra²/ in contemporary writings and official documents. The socio-political identity of the Rera in Northeast India is associated with the greater Tangsa ethnicity. The word Tangsa, containing the etyma /taŋ²/ ‘mountain’ and /sa¹/ ‘person’, basically means ‘mountaineers’, a name coined by an Indian political officer (Morey 2017: 350). Another term for the Tangsa subgroup is Tase (Morey 2014). In Myanmar, the Tangsa people are also known as the Tangshang, though these two words are not cognate with Tangsa but a combination of the first names from a story of two siblings Tangnyu Wang and Shangnyu Wang (Statezni 2013: 5).

Rera does not have its own ISO code but is referred to by the larger Tangshang ISO 639-3 code: nst (Simons & Fennig, 2017). Within the greater Tibeto-Burman family, Tangsa languages are placed within the Bodo-Konyak group (Burling, 2002) and have been classified as Eastern Naga (Grierson 1903) and also Northern Naga (Voegelin 1977). Morey (2013) identifies around seventy Tangsa languages, which are further divided into the Pangwa and non-Pangwa groups. Pangwa differs from non-Pangwa in that it does not mark hierarchical relations in verbal person agreement markers (Morey 2013). The Pangwa groups are also known for their ritual and historical songs, called the Wihu songs, or Sahwi songs (Morey n.d.a). The Rera belong to the Eastern Pangwa subgroup of Northern Naga (Khan 2017).

The Rera people originally came from Myanmar, according to a 100-year-old map of Indo-Myanmar by a British colonist (Couchman 1934, see Appendix B). They were among the earliest Tangsa-speaking language groups to settle in Northeast India in the state of Arunachal Pradesh, Manmao district. There are also Rera communities in Changlang district. The location of Rera communities is shown in Figure 1. The

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1 This work is part of Dr. Stephen Morey’s language documentation project ‘A Multifaceted Study of Tangsa—A Network of Linguistic Varieties in Northeast India’ sponsored by the Australian Research Council Future Fellowship (ARCFT100100614).

2 I would like to thank Rera speakers, especially Sahtum Ronrang, Manshan Shamma Ronrang and Tenny Shamma Ronrang, for their help in collecting linguistic and cultural data.

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red circles indicate the Rera villages situated in the frontier of Assam and Arunachal Pradesh states in India, including Balinong village, where the majority of the Rera people live.

The data collection for this project was made possible by a general interest on the part of native speakers in preserving their language and by collaboration with the “Rera Welfare Society”, which represents community interests and development work related to the community. While Manmao district is the Rera people’s original home, most of the research was carried out in Changlang district because of easy access to the villages. Audio recordings were created in .wav format with a sampling rate of 48 kHz, with a 16 bit depth. The recording equipment included a high definition ZoomQ3 audio-video recorder and, for most recording sessions, a high definition Olympus WS-852 audio recorder, along with omni-directional microphones. The recording process involved initial elicitation in groups of multiple speakers, which was later rechecked at the individual level and reanalysed for the best possible research and archiving results. In addition, most of the data was recorded from two native speakers, a female aged 55 and a male aged 27. The data comprised a total of 800 lexemes from various semantic domains. Each item was repeated three times at an interval of approximately two seconds, then recorded in a sentence frame to elicit connected speech. Transcriptions were then checked with community members across multiple sessions.

Figure 1: Location of Rera villages (Google maps 2017)

2 Previous research

Initial consonant inventories are similar across Tangsa languages in Northeast India. Stops usually occur in both the onset and coda positions, but voicing and aspiration contrasts are found only in the onset (Burling 2002). In-depth phonological descriptions are available for four Tangsa varieties. These include Moshang Tangsa with 22 consonants, nine monophthongs, and three diphthongs (Marrison 1967, as cited in Namkung 1996), Hawa-jap Tangsa with 23 consonants and five vowels (Das Gupta 1971, as cited in Namkung 1996), Chamchang Tangsa with 24 consonants, eight monophthongs, and three diphthongs (Morey n.d. b), and Shecyü Tangsa with 25 consonants, eight monophthongs and three diphthongs (Khan 2017). These phoneme inventories are summarized in Table 1.

All the varieties in Table 1 include contrastive voicing and aspiration for stop onsets, except for the alveolo-palatal phonemes which only contrast in aspiration. Shecyü has an additional dental obstruent, usually realized as a stop, which is the equivalent of the Chamchang /ts/ (Khan 2017). Furthermore, these two varieties are lexically identical (Jay and Khan 2012). Like Rera, Shecyü and Chamchang belong to the Eastern Pangwa subgroup of Tangsa.

While Moshang, Chamchang and Shecyü distinguish monophthongs and diphthongs, Hawa-jap only has monophthongs. Moshang, which is geographically closer to the Rera village where the current research was conducted, has more diphthongs than other Tangsa varieties (Morey n.d.a). It also shares many phonological as well as syntactic features with Rera (Morey p.c.). Therefore, the vowel inventory of Rera is expected to be
similar to Moshang, Chamchang, and Shecyü. Hawa-jap has five monophthong phonemes, whereas the other varieties distinguish six (Moshang) or eight (Chamchang, Shecyü) monophthongs and three diphthongs.

Recent descriptions of Tangsa tonal contrasts are provided for eight Tangsa varieties, i.e. Moshang, Chamchang, Mungray, Cholim, Lochhang, Ngaimong, Shecyü, and Rera (Morey 2014). The realisation of tones shows a high degree of variation for a three-way tonal contrast. Generally, Tone 2 appears to be the most stable across varieties, with pitch varying from mid to high to high falling. Tone 1 shows more variation with low, mid, high or high falling pitch. For example, Tone 1 in Chamchang is low-falling /21/, but in Rinkhu it is high level /55/ (Morey 2014: 662). In addition, Tone 1 is glottalized in some varieties. Glottalization in this context is final glottal closure interpreted as a laryngeal feature linked to tone, not a segment. Tone 3 has the most inconsistent patterns, varying between low, mid rising, mid falling, high falling and high pitch.

The distribution of contrastive tones in Tangsa varieties is sensitive to the syllable coda. A greater number of tonal contrasts are found in open or sonorant-final syllables than is found in stop-final syllables ending in /p, t, k, ʔ/. Stop-final syllables generally do not distinguish tone, with the exception of Cholim; this variety distinguishes all three tones in stop-final syllables (Morey 2013).

A few varieties may have up to four tones, such as Muklom, which has four tones in open and sonorant-final syllables and two tones in stop-final syllables (Mulder, forthcoming). The realization of glottalized tone on stop-final syllables (Mulder p.c.) corresponds well with Morey’s (2014) analysis. Mulder also proposes a two-way distinction between low and high tones for stop-final syllables.

The following sections are divided into the discussion of the Rera consonant inventory (§3), vowels (§4), and distinctive tonal categories (§5).

**Table 1: Previously described Tangsa phoneme inventories**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Consonants</th>
<th>Vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moshang</td>
<td>p pʰ b t tʰ d cʰ ɟ k kʰ g s sʰ h i u ai m n ɲ ŋ e ə o au v l r j</td>
<td></td>
</tr>
<tr>
<td>Hawa-jap</td>
<td>p pʰ b t tʰ d cʰ k kʰ m n ɲ ŋ i u v s ɕ h e o w r l j</td>
<td>a</td>
</tr>
<tr>
<td>Chamchang</td>
<td>p pʰ b t tʰ d tʰ te teʰ k kʰ g ʔ m n ɲ ŋ i u w ie β ts s ɕ z h e ə o a ə o ə a j l</td>
<td></td>
</tr>
<tr>
<td>Shecyü</td>
<td>p pʰ b t tʰ d tʰ k kʰ g ʔ i u w ia m n ɲ ŋ e ə o a ə o ə a j l</td>
<td></td>
</tr>
</tbody>
</table>
3 Rera consonant inventory

Rera has 20 consonant phonemes, contrasting at five points of articulation and four manners of articulation, in line with previously described Tangsa varieties (see Table 1). The inventory of Rera consonants is shown in Table 2. With kind permission by Prof. Stephen Morey, recordings with Rera minimal pairs and a wordlist with body parts are accessible via the following links:

- https://hdl.handle.net/1839/00-0000-0000-0017-C47A-9 (minimal pairs)
- http://doi.org/10.5281/zenodo.1442403 (all minimal pairs)
- https://hdl.handle.net/1839/00-0000-0000-0017-C439-A (body parts)

Individual word files are cited where relevant in the text.

<table>
<thead>
<tr>
<th>Table 2: Rera consonant inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bilabial</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Oral stops</td>
</tr>
<tr>
<td>Nasal stops</td>
</tr>
<tr>
<td>Fricatives</td>
</tr>
<tr>
<td>Approximants</td>
</tr>
</tbody>
</table>

In Rera, aspiration is not contrastive and varies in its degree for both voiced and voiceless stops. Thus, /b, d, g, p, t, k/ represent phonemes that vary freely between [b ~ bʰ], [d ~ dʰ], [g ~ gʰ], [p ~ pʰ], [t ~ tʰ] and [k ~ kʰ], respectively. As for the fricatives, the bilabial voiced fricative /β/ has three allophones [β], [v] and [w]. The voiced labio-dental fricative [v] occurs preceding the mid rounded back vowel /o/ as in [voŋ¹] ‘cooked rice’ (nst_Rera_SR_DG_155_Rice (Cook).wav), while [w] precedes the open central vowel /a/ as in [wan²] ‘fire’ (nst_Rera_SR_DG_127_Fire.wav). [β] occurs preceding all other vowels. The alveolo-palatal affricates /dʑ/ and /tɕ/ are in free allophonic variation with their retroflexed counterparts [dʐ, tʂ]. Evidence of contrast is presented in the following minimal and near-minimal sets.

Onsets:

- /p/ /p/ ‘CL’
- /pi/ /pi/ ‘medicine to make liquor’
- /pʰ/ /pʰ/ ‘lift up (things)’
- /po/ /po/ ‘navel’
- /t/ /t/ ‘arrive’
- /to/ /to/ ‘type of plant’
- /tʰ/ /tʰ/ ‘type of wood’
- /tɕ/ /tɕ/ ‘gold’
- /tɕʰ/ /tɕʰ/ ‘type of wood’
- /d/ /d/ ‘slave’
- /da/ /da/ ‘to make error (wrong)’
- /dʑ/ /dʑ/ ‘to make error (wrong)’
- /dʑʰ/ /dʑʰ/ ‘game’
- /n/ /n/ ‘field’
- /na/ /na/ ‘bee’
- /m/ /m/ ‘stop (comand)’
- /ma/ /ma/ ‘stop (comand)’
- /nɡ/ /nɡ/ ‘half dried’
- /y/ /y/ ‘1s’
- /ŋ/ /ŋ/ ‘1s’
- /ŋɛʔ/ /ŋɛʔ/ ‘earth’
- /ŋam²/ /ŋam²/ ‘animal meat’
- /ŋaʔ/ /ŋaʔ/ ‘fish’

3 The Language Archive, Max Planck Institute for Psycholinguistics, Wundtlaan 1, 6525XD Nijmegen, The Netherlands.
Consonants are not restricted to any vowels, except for the front open vowel /ɛ/, which only occurs with initial /p, tɕ, l/ in the data. All Rera consonants occur in syllable-initial position, except for the glottal stop /ʔ/. Only unaspirated oral stops and nasals /p, tɕ, l, ŋ/ and the glottal fricative /h/ can occur in the coda position. The phonological status of the final -h is unclear; it is clearly present and distinguishes /jɔʔ/ ‘direction’ from /i²jɔʔ/ ‘swallow’ (nst_Rera_SR_DG_361_Swallo.wav). However, it is also found to vary in semantically related forms like /keh²kaʔ/ ‘goat’ (nst_Rera_SR_DG_713_Goat.wav) and /keh²ka¹sa¹/ ‘lamb’ (nst_Rera_SR_DG_114_Lamb.wav) but /ke²pɔŋ²βa²/ ‘male goat’. The glottal stop is considered a consonant phoneme instead of a tonal feature, following Morey’s (n.d.b) Chamchang and Khan’s (2017) Shecyü descriptions. The glottal stop is treated as a coda consonant because it occurs only with Tone 3, like the other oral stop finals, (see section 4). If the glottal stop were a suprasegmental laryngeal feature, it could modify sonorant codas, which is not the case.

4 Vowels
Rera has eight monophthongs in front, central and back positions (Table 3). Vowel length is not contrastive. For unrounded front vowels and rounded back vowels, three vowel heights are distinguished, which is not found in the previously described Tangsa varieties. In addition, there are two central vowels.

Table 3: Rera vowel inventory

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close</td>
<td>i</td>
<td>u</td>
<td></td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td>ə</td>
<td>o</td>
</tr>
<tr>
<td>Open</td>
<td>ɛ</td>
<td>a</td>
<td>ɔ</td>
</tr>
</tbody>
</table>

xlix
Contrastive pairs are provided as follows. For multisyllabic examples, bold font emphasizes the syllable in question.

/l/ vs /e/

/le³/ (nst_Rera_SR_DG_471a_Open.wav) ‘boat’ vs. /le³/(nst_Rera_SR_DG_471a_Open.wav) ‘open’;
/hi²/ (nst_Rera_SR_DG_708_Hanging Bridge.wav) ‘hanging bridge’ vs. /he¹/ (nst_Rera_SR_DG_708_Hanging Bridge.wav) ‘crab’;
/nl²/ (nst_Rera_SR_DG_478_No.wav) ‘NEG-go’ vs. /me¹jan²/ (nst_Rera_SR_DG_246_Festival.wav) ‘festival’;
/sf/me²ka²/ (nst_Rera_SR_DG_349_Sharp Shiny Stick.wav) ‘thin stick’ vs. /se¹dzəŋ²ka²/ (nst_Rera_SR_DG_717_Grub.wav) ‘grub’.

/e/ vs /e/ ‘forbearance’ vs. /ne²/ (nst_Rera_SR_DG_455_Tobacco.wav) ‘tobacco’;
/he¹/ (nst_Rera_SR_DG_242_Crab.wav) ‘crab’ vs. /he³/ (nst_Rera_SR_DG_242_Crab.wav) ‘crab’;
/le³/ (nst_Rera_SR_DG_471a_Open.wav) ‘open’ vs. /le³/ (nst_Rera_SR_DG_706_Whole Tree.wav) ‘whole tree’;
/me¹jan²/ (nst_Rera_SR_DG_246_Festival.wav) ‘festival’ vs. /me⁵ke²/ (nst_Rera_SR_DG_247_What.wav) ‘what’;

/u/ vs /o/

/pu³/ (nst_Rera_SR_DG_640_Snake.wav) ‘snake’ vs. /mo²/ (nst_Rera_SR_DG_040_You(Singular).wav) ‘2s’;
/muŋ²/ (nst_Rera_SR_DG_262_Country.wav) ‘country’ vs. /monj²/ (nst_Rera_SR_DG_493_Inside.wav) ‘inside’;
/nu²/ (nst_Rera_SR_DG_701_An Instrument to Clean Rice.wav) ‘instrument for cleaning rice’ vs. /no²/ (nst_Rera_SR_DG_059_Child.wav) ‘child’;
/ŋu²/ (nst_Rera_SR_DG_702_Infection.wav) ‘infection’ vs. /ŋo¹/ (nst_Rera_SR_DG_079_Say2.wav) ‘say’;
/hu²/ (nst_Rera_SR_DG_709_Close a Hole.wav) ‘close a hole’ vs. /ho¹/ (nst_Rera_SR_DG_711_Burn (Vanquish).wav) ‘burn (vanquish)’.

/o/ vs /a/

/kə¹/ (nst_Rera_SR_DG_014_Nose.wav) ‘nose’ vs. /go¹/ ‘go’; /ŋo¹/ (nst_Rera_SR_DG_079_Say2.wav) ‘say’ vs. /ŋo²/ (nst_Rera_SR_DG_423_King.wav) ‘great king’; /βo⁵/ (nst_Rera_SR_DG_156_Belly (Exterior).wav) ‘belly’ vs. /βo⁵/ (nst_Rera_SR_DG_157_Pig.wav) ‘pig’;
/kam³bo¹/ (nst_Rera_SR_DG_716_Blister.wav) ‘blister’ vs. /pu³pɔ³/ (nst_Rera_SR_DG_272_Burry.wav) ‘bury’;
/dzɔko¹/ ‘river’ vs. /dzz²/ ‘run’.

/e/ vs /a/


/e/ vs /a/

/ne²/ (nst_Rera_SR_DG_455_Tobacco.wav) ‘tobacco’ vs. /na²/ (nst_Rera_SR_DG_688_Stop_Field.wav) ‘field’;
/he³/ (nst_Rera_SR_DG_710_Joy.wav.wav) ‘joy’ vs. /ha²/ (nst_Rera_SR_DG_117_Stay.wav) ‘stay’.

/o/ vs /a/

/tap/ (nst_Rera_SR_DG_663_Ashes.wav) ‘ash’ vs. /tap/ (nst_Rera_SR_DG_689_FarmingHouse_ReleasingAnimal.wav) ‘farm house’;
/team²/ (nst_Rera_SR_DG_712_Face.wav) ‘face’ vs. /team²/ (nst_Rera_SR_DG_697_Jumping_Blame.wav) ‘jumping’;
/lan²/ (nst_Rera_SR_DG_627_Disobey.wav) ‘disobey’ vs. /lan²/ (nst_Rera_SR_DG_705_Biting.wav) ‘bitting’;
The close-back rounded vowel /u/ has an unrounded allophone [ɯ], which is in complementary distribution, conditioned by the final glottal stop. This is seen in the single example found in the data, [eɯ] ‘to roast’ → [i¹-eɯʔ] ‘NMLZ-roast’.

The open central vowel /a/ shows allophonic variation with [æ] when occurring between two bilabial stop consonants as in [bæp⁵] ‘mud’. The mid front vowel occurs nasalized in one instance, with [ɛ] in /kʰɛʃ²/ ‘liquor’ which is most likely a loan word. Vowel-initial syllables are rare, most of them are prefixes. The prefix i¹- is a nominalizer prefix, while the prefix a¹- is an attributive prefix and a²- is the third-person possessive prefix. The only other vowel-initial syllables are found in /e²li²/ ‘seed’ (nst_Rera_SR_DG_384_Seed.wav); /ɛ²kɔm²ba¹/ ‘few’ (nst_Rera_SR_DG_249_Few2.wav); /u²tee¹kɔ³βa¹/ ‘beak’ (nst_Rera_SR_DG_714_Beak.wav). Examples for vowel-initial prefixes are given below.

/i¹-ri³/ (NMLZ-die) ‘death’
/i¹-nom²/ (NMLZ-dance) ‘dancing’
/i¹-mañ²/ (NMLZ-dream) ‘dream’
/a¹-dʒɔŋ²/ (ATTR-big) ‘big’
/a¹dzɔm²/ (ATTR-sweet) ‘sweet’
/a¹-kam²kam²/ (ATTR-hot) ‘hot’
/a²-βa²/ ‘3s.POSS-grandfather’
/a²-βi²/ ‘3s.POSS-grandmother’

Even though Moshang is geographically close to the Rera community and shares many phonological and syntactic features (Morey, p.c.), Rera has no diphthongs. The Moshang diphthongs /ai, au, oi/ and the Shecyü diphthongs /ia, əo, əɯ/ may correspond to the additional vowel height distinction of /e/ vs. /ɛ/ and /o/ vs. /ɔ/ in Rera. Further research is needed to investigate this.

5 Rera tones

Rera distinguishes three tones in open and sonorant-final syllables. In stop-final syllables, tone is always Tone 3. The Rera tones and their pitch realizations are as follows:

Tone 1: High /45/
Tone 2: Mid /33/
Tone 3: Low /21/

Minimal tone sets are given below.

**High Tone 1**
/ŋa¹/ ‘1s’
(nst_Rera_SR_DG_072_1.wav)
/ka¹/ ‘go’
(nst_Rera_SR_DG_704_Go.wav)
/ɑ²na¹/ ‘sister’
(nst_Rera_SR_DG_051_Sister)

**Mid Tone 2**
/ŋa²/ ‘ear’
(nst_Rera_SR_DG_056_Ear.wav)
/ka²/ ‘jaw’
(nst_Rera_SR_DG_017_Jaw.wav)
/na²/ ‘field’
(nst_Rera_SR_DG_703_Field.wav)

**Low Tone 3**
/ŋa³/ ‘buffalo’
(nst_Rera_SR_DG_074_Buffalo.wav)
/ka³/ ‘write’
/na³/ ‘ear’
(nst_Rera_SR_DG_056_Ear.wav)
/ŋa⁴/ ‘fish’
(nst_Rera_SR_DG_075_Fish.wav)

Pitch tracks of the three contrastive tones for the minimal set /ŋa¹/ ‘1s’, /ŋa²/ ‘ear’, /ŋa³/ ‘buffalo’ are shown in Figure 2. Figure 3 shows the pitch track of Tone 3 in both open /ŋa³/ ‘buffalo’ and closed syllables /ŋa²/ ‘fish’. In Figure 3, the open syllable to the left displays a stronger drop in pitch, whereas the closed syllable, to the right, has a nearly level pitch contour.
Figure 2: Wave form, F0 tracks, and formants for tone contrasts on the syllable /ŋa/

Figure 3: Comparison of Tone 3 in the open and stop-final syllables /ŋa/ ‘buffalo’, /ŋaʔ/ ‘fish’

For some lexical items, low falling Tone 3 has a low level allotone. This is found in word-final syllables when preceded by a syllable with a high-rising tone. For instance, the verb [pu²] ‘to fly’ changes to [i¹pu¹] ‘flying’ when preceded by the nominalizer prefix i¹- with high Tone 1.

Contrary to Mulder’s (2017) study of contrastive tones in stop-final syllables, descriptions of the Tangsa varieties have not marked tone in stop-final syllables (also called checked or dead syllables, cf. Kirby & Brunelle, 2017) as tone is predictable in this environment, always Tone 3. For Rera, too, tone is contrastive only in open syllables and sonorant-final syllables (live syllables cf. Kirby & Brunelle, 2017). Examples of the tone distribution are presented below.
Open and sonorant-final syllables (live syllables):
High Tone 1: /ŋa¹/ ‘1s’ (nst_Rera_SR_DG_072_Liver.wav); /rin¹/ ‘liver’
(nst_Rera_SR_DG_182_Liver.wav)
Mid Tone 2: /i̯ti²/ ‘grandfather’ (nst_Rera_SR_DG_659_Grand Father.wav); /ɕə²rum²/ ‘2PL’
(nst_Rera_SR_DG_094_You (PL).wav)
Low Tone 3: /ŋa³/ ‘buffalo’ (nst_Rera_SR_DG_074_Buffalo.wav); /nam³/ ‘rotten’
(nst_Rera_SR_DG_624_Meat & Rotten.wav)
Stop-final syllables (dead/checked syllables) with predictable low pitch:
/dʑɔ²kuk³/ ‘river bank’
/nji²mit³/ ‘sun’ (nst_Rera_SR_DG_193_Sun.wav)
Unlike roots, prefixes do not necessarily carry tone and, in fact, only a small number of them do so. The
data show that prefixes with a reduced vowel do not carry tone, e.g. /kəra²/ ‘that’; in contrast, the most
common prefixes that carry tone are the nominalizing prefixes /i¹-/ and /keʔ³-/, the third person possessive
prefix /a²-/ and the attributive prefix /a¹-/. Examples are given below:
/i¹-/ → /i¹ŋam²/ ‘NMLZ-flesh, meat’ (nst_Rera_SR_DG_624_Meat & Rotten.wav)
/keʔ³/ → /keʔ³-ŋuŋ³paʔ³/ ‘his particular hunting instrument’, /keʔ³-ka¹to²/ ‘his going’
/a²-/ → /a²po¹/ ‘3s.POSS-mother’ (nst_Rera_SR_DG_649_Mother.wav)
/a¹-/ → /a¹dʑɔŋ²/ ‘ATTR-big’ (nst_Rera_SR_DG_566_Big.wav)
Rera nominalized forms display tone sandhi, which is common in most of the Tangsa varieties, which is
shown in the following examples:

a) [mɑ̃ŋ¹lan²] ‘dream (V)’ vs. [i’mɑ̃ŋ¹] ‘dream (N)’
b) [pu²to²] ‘flew’ vs. [i²pu³] ‘flying’
c) [ka¹to²] ‘went’ vs. [i¹ka³] ‘going’

The verb stems in examples (a), (b), and (c) either carry Tone 1 or Tone 2. When the tense suffixes with
Tone 2 are added, there is no change in the tone of the verb root. However, the nominalizer prefix /i¹-/
with Tone 1(high-rising tone) causes the verb roots with high Tone 1 or mid Tone 2 to change to low Tone 3. As
nominalization is signalled by the nominalizer /i¹-, the change of the verb root to Tone 3 may be a form of
tonal dissimilation to emphasize the nominalizer prefix. This is also seen in the noun forms [βaŋ³dʑəŋ²]
‘father’s elder brother’ and [i¹βaŋ³] ‘father’s younger brother’, where the high-tone prefix /i¹-/ causes lowering
of the tone on the following noun stem. However, with the exception of the forms for ‘brother’, this tonal
process appears to be unique to the nominalizer prefix /i¹-; it is not found for the noun /i¹ti²/ ‘juice’ or
/.unbind²/ ‘female’. Similarly, the high-tone prefix /a²- does not lower the tone of the following root, seen in
the forms /a²po²/ ‘my mother’ or /a¹lu¹/ ‘height’. Therefore, the tonal process seen for the nominalizer prefix
/i¹- appears to be linked to its grammatical function. This is seen in the forms /pu²to²/ ‘flew’ to /pu³/ ‘flying’
or /ŋo¹/ ‘say’ to /ŋo³/ ‘saying’, where the prefix is entirely dropped and the change in tone alone marks
nominalization. It appears that Rera tone is in the process of being grammaticalized in this environment (for
further discussion, see Goswami 2017).

Rera tone carries a low functional load. Similar to Konnerth’s (2014: 76) observations on Karbi, a
related Tibeto-Burman language, it is hard to find true minimal sets for all three tones; they are also highly
sensitive to context, and native speakers often experience difficulties in identifying tone if there is no
minimal counterpart. This is not only true for the younger generations with their restricted use of the
language and strong influence from surrounding Indic languages; it is also apparent in speakers from the
older generations between the ages of 30 - 60. The large inventory of derivational or inflectional affixes has
an effect on the tone of the lexical roots, and the syllable structure of the root, open or closed, in turn affects
the tone of the affix. Compound words seem to have the same effect. The following section discusses the
syllable structure in Rera.
6 Syllable structure
Rera has no consonant clusters in either onset or coda position, thus the language has a syllable template of (C) V (C)\(^1\), with tone represented by \(\uparrow\). Disyllabic words are most common in the 800-item word list collected for this study, followed by monosyllables. Tri- and quadrisyllabic words exist but are less common. Only a few instances of five- or six-syllable words have been observed.

Most monosyllabic words are nouns. Some examples of monosyllabic words are shown below.

/ŋa¹/ ‘1S’
/pu³/ ‘snake’
/βok/ ‘pig’

Disyllables are the most common type of word in the word list.

/din²ka¹/ ‘neck’
/pa¹lap/ ‘tea’
/gən¹βe¹/ ‘body hair’
/laŋ³ŋaʔ/ ‘banana’
/sum¹ləm²/ ‘mushroom’

Verb roots are mostly monosyllabic but require affixation. The reason for this is that bare roots do not occur naturally in isolation in the language. There are very few verb roots with more than two syllables, and many of them are the result of partial reduplication. Other disyllabic roots the result of compounding.

The prefixed verb roots most commonly take the nominalizer prefix \(i¹\)- and the attributive \(a¹\)-. A few of them are given here.

/i¹-rit³/ ‘death’
/i¹-dʑup/ ‘sleeping’
/i¹-βəŋ³/ ‘coming, moving’
/a¹-dʑɔŋ²/ ‘ATTR-big’

Suffixes in Rera are mostly monosyllabic, although there are also disyllabic suffixes, which tend to be multi-morphemic. Like roots and certain prefixes, they carry tone. Rera suffixes are shown below.

/-to²/ ‘past.3’
/-ma²na¹/ ‘exclusive’
/-lan²/ ‘present.1’
/-re²/ ‘clause marker’

Trisyllabic words are found less frequently. Some trisyllables contain reduplicated syllables and rhymes more commonly found in kinship terms and nouns, as in the following examples.

/βi¹ku²nu¹/ ‘old woman’
/ka³la²goʔ/ ‘crow’
/raŋ³lum³ti²/ ‘sweat’
/man²su²ka¹/ ‘cattle’
/dzak³pa²dam²/ ‘hand’
/pi¹pi²leh³/ ‘butterfly’

Quadrisyllabic words are rare in Rera, and the examples that exist are mainly nouns, as in /kan²re²si¹ka¹/ ‘cockroach’, /pun²eŋ³ku³leh³/ ‘tree bark’ and /sam²ka²ra³ka¹/ ‘rib’. Words with five or more syllables in the data are a set of affixed compound words, e.g. /min²si¹nɔ²nɔt³sɔ²/ ‘sleepy’ and /ja⁵t³e¹kə³ei³kua¹na³/ ‘second toe’.

7 Conclusion
Rera has three contrastive tones with 20 consonant phonemes and eight vowels. Rera does not distinguish aspiration. Otherwise, the consonant phoneme inventory resembles other previously described Tangsa varieties, e.g. Hawa-jap, Moshang, Shecyü, Chamchang. These varieties, including Rera, do not distinguish between the fricative [v] and the approximant [w], which, in Rera are allophones of the voiced fricative /β/,
while Hawa-jap does distinguish /v/ and /w/. A prominent distinction is the lack of contrastive aspiration. In addition, Rera lacks diphthongs but distinguishes three vowel heights for front and back vowels. The Rera Tangsa phoneme inventory compared to previous descriptions is summarized in Table 4.

As pointed out in this study, tone displays sandhi and cannot be explored sufficiently based on single-item word lists. Therefore, further research is needed. An exploration of tone sandhi requires a broader pool of speakers to investigate inter-and intra-speaker variation, and several carrier phrases in which to embed the three lexical tones according to their syllable structure in varying environments. The present study was not designed for this, but tone sandhi would be a worthwhile topic for further exploration in future research. For this work, 800 words were collected, however, more triplets/pairs are likely to be found with further word collection.

Table 4: Phoneme inventories of five Tangsa varieties

<table>
<thead>
<tr>
<th>Variety</th>
<th>Consonants</th>
<th>Vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moshang</td>
<td>p b t d c h i u a i</td>
<td></td>
</tr>
<tr>
<td>Hawa-jap</td>
<td>p b t d c h i u o i</td>
<td></td>
</tr>
<tr>
<td>Chamchang</td>
<td>p b t d c h i u w i e</td>
<td></td>
</tr>
<tr>
<td>Shecyü</td>
<td>p b t d c h i u o i</td>
<td></td>
</tr>
<tr>
<td>Rera</td>
<td>p b t d c h i u</td>
<td></td>
</tr>
</tbody>
</table>

References


Couchman, H. J. 1934. Survey of India Map: Assam and Burma Sadiya frontier tract and tribal area. Map number 83N NE. Scale 1 inch to 2 miles.


Google Map of Balinong village, Arunachal Pradesh. 2017. (https://www.google.co.th/maps/place/Balinong,+Arunachal+Pradesh+792122,+India/@26.8877112,93.3914674,418884m/data=!3m1!1e3!4m5!3m4!1s0x373ee989e8de78af:0xc63ce301bfed2d8a!8m2!3d27.451912!4d95.982452) (Accessed 2017-07-15)


Appendix A: Rera word list

Bold face stands for the syllable with the onset or vowel in question.

<table>
<thead>
<tr>
<th>Syllable</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/p/</td>
<td></td>
</tr>
<tr>
<td>pi¹</td>
<td>medicine to make liquor</td>
</tr>
<tr>
<td>pi¹pi²leh³</td>
<td>butterfly</td>
</tr>
<tr>
<td>i¹pi²</td>
<td>he/she</td>
</tr>
<tr>
<td>pin²po³</td>
<td>flower</td>
</tr>
<tr>
<td>i¹pe¹</td>
<td>vomit</td>
</tr>
<tr>
<td>pon¹</td>
<td>what’s happening</td>
</tr>
<tr>
<td>pək?</td>
<td>bat</td>
</tr>
<tr>
<td>pək, i¹pak</td>
<td>eat (dishes)</td>
</tr>
<tr>
<td>pa¹lap</td>
<td>tea</td>
</tr>
<tr>
<td>paʔ</td>
<td>stick</td>
</tr>
<tr>
<td>a¹paʔ¹</td>
<td>tide</td>
</tr>
<tr>
<td>paŋ²tok</td>
<td>high tide</td>
</tr>
<tr>
<td>pu¹jɔŋ¹/a²pu¹jɔŋ¹</td>
<td>elder brother</td>
</tr>
<tr>
<td>pu²(V), i²pu²(N)</td>
<td>fly</td>
</tr>
<tr>
<td>pa²</td>
<td>cl (cylindrical objects)</td>
</tr>
<tr>
<td>pu²</td>
<td>snake</td>
</tr>
<tr>
<td>pum¹[p̊uːm¹]</td>
<td>mountain</td>
</tr>
<tr>
<td>pun¹</td>
<td>wood</td>
</tr>
<tr>
<td>punjak</td>
<td>leaf</td>
</tr>
<tr>
<td>pun¹keh³</td>
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<td>pun¹ri¹ks³</td>
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<td>a¹po²</td>
<td>mother</td>
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<td>pan²rop</td>
<td>everything</td>
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<td>pon²tei¹ba¹</td>
<td>half</td>
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<td>idea</td>
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<td>paʔku²</td>
<td>stick</td>
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<tr>
<td>pi¹ɔt</td>
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<td>tree</td>
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<td>pak</td>
<td>eat (V)</td>
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<td>meal meat</td>
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<td>pu²pe²</td>
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<td>dɔ², i³dɔ²</td>
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<td>dat</td>
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din² if
da² slave
du¹ rice
daŋ² beam
din² kap collar
di¹ tɕö³ ladder
du¹ rice
da cut
daŋ² ka'ɾa'kɔ¹ collar bone
din² ka'ɾa'kɔ² neck nape
di¹ tɕö³ ladder
daŋ² beam
din² kap collar
di² go² defecate
dap releasing animal
dap bunch of folded clothes

/dʒ/ dzaʔ forest
dzaŋ² blame
dzaŋ'ka¹ insect
d'ɔn'g¹ big
dza² ci³ January
dza³ hut February
dza’ teum³ March
dza’ ru³ April
dza’ han⁵ May
dza’dja¹ December
dza’ cun² August
dza’ ca¹ September
dza’ kin’ko¹ finger nail:claw
dza’ lan'ku³ knee
dza’mek ku³ ankle
dzaŋ² machete
dzakse’nə² right
dzaŋ' na² left
dzu’veŋ’ na² inside
dzu’ pu’ ka’ tɕən¹ insect that lives in a hole
dze¹ lo’ ba¹ steel
dzi’ jam² how long?
dʒum² house
Dipyoti GOSWAMI  |  Preliminary phonology of Rera Tangsa  |  JSEALS 11.2 (2018)

\[ \text{dɔŋ²ka}³ \quad \text{dʑɔŋ²ka}³ \]

\[ \text{ka³} \quad \text{maggot} \]
\[ \text{ka³} \quad \text{falling apart} \]

\[ /\text{te}/ \]
\[ \text{tei¹} \quad \text{medicine} \]
\[ i'/\text{tei'ku'}² \quad \text{female or classifier for animals} \]
\[ \text{tep²} \quad \text{duck} \]
\[ \text{tean²} \quad \text{face} \]
\[ \text{teʔ} \quad \text{gold} \]
\[ \text{a'teʔu'} \quad \text{grandchild} \]
\[ \text{teum²be'ka}² \quad \text{worm} \]
\[ i'/\text{teʔu}² \quad \text{pound} \]
\[ \text{ja'teʔon'ka}² \quad \text{heel} \]
\[ \text{teʔ}² \quad \text{spit} \]
\[ \text{tek²mo'/ki'go}³ \quad \text{deer} \]
\[ \text{tektəʔ} \quad \text{cough} \]
\[ \text{teu'teın'toʔa}³ \quad \text{wooden stool} \]
\[ \text{tee'dɔn}¹ \quad \text{east} \]
\[ \text{tee'nup} \quad \text{west} \]
\[ \text{teın'na²} \quad \text{behind} \]
\[ \text{teın'na³} \quad \text{second} \]
\[ \text{teın'na²zu'n}³ \quad \text{chase after} \]
\[ \text{tei²teʔ} \quad \text{pack of medicine} \]
\[ \text{teın'na²teın'³} \quad \text{backward direction} \]
\[ \text{teop} \quad \text{drown} \]
\[ \text{teın³} \quad \text{keep} \]
\[ \text{teum¹} \quad \text{pus} \]
\[ \text{tei'ku'ti²a'joŋ²} \quad \text{doctor} \]
\[ \text{teu²poŋ'ba}¹ \quad \text{bull} \]
\[ \text{teo'ka'ra'ko}³ \quad \text{shoulder blade} \]
\[ \text{te'a'pən}² \quad \text{flour} \]
\[ \text{təte'a'man²} \quad \text{pregnant} \]
\[ \text{team²} \quad \text{jumping} \]
\[ \text{teum²} \quad \text{grind} \]

\[ /\text{gi}/ \]
\[ \text{gi¹} \quad \text{blood} \]
\[ \text{gin²be'} \quad \text{wind} \]
\[ \text{ge²he'} \quad \text{dog} \]
\[ \text{gon¹} \quad \text{body} \]
\[ \text{gon¹be'} \quad \text{body hair} \]
\[ \text{ga?} \quad \text{earth} \]
\[ \text{ga¹} \quad \text{wet} \]
\[ \text{gak²} \quad \text{split} \]
\[ \text{gu¹} \quad \text{half dried} \]
\[ \text{a'gu¹} \quad \text{mother’s brother} \]
\[ i'/\text{gut} \quad \text{steal (n)} \]
\[ \text{gu²} \quad \text{steal (v)} \]
\[ \text{a'gu²} \quad \text{thief} \]
\[ \text{gap³} \quad \text{hit} \]
\[ \text{gan¹ma²miŋ²} \quad \text{weak} \]
\[ \text{gan¹ra'ko}² \quad \text{fever} \]
\[ \text{gi³ham²} \quad \text{bruise} \]
\[ \text{gan³teʔu'man²} \quad \text{valley} \]
\[ \text{ga'ko}² \quad \text{ass, donkey (Loan word)} \]
\[ \text{gan²ənə}² \quad \text{tendon, sinew} \]
\[ \text{gah²ku'po²} \quad \text{north} \]
\[ \text{gah²mi'ko²} \quad \text{south} \]
gan²ta² hour (Loan word)
gi¹mi² millet
gə⁴̊̊̊shək bark (dog)
ɡa⁴nu²duʔ down
go¹ have
gu¹tan² who
gan²ta² hour (Loan word)

/k/
ki² old
keh’kaʔ goat
i’keʔ descend
kjë² liquor
kək, i’kək bite
ka⁷təp tongs
ka³la⁵goʔ crow
kam² water (for drinking)
kam⁷reʔni’ka¹ cockroach
a³ku¹ nine
ku⁵min¹ hair/head
ku⁵po³ head
ku⁵ri¹ brain
keʔ going for sure
kutkih² crocodile
kuʔ, i’kut give
kum⁵raŋ¹ horse, donkey
kə¹ nose
ku³ mother
i’ku⁴le² skin
kek cake (Loan word)
kan² forehead
ka⁴ write
ka³ jaw
ka⁴ go
kat³ cloth
kat shirt
keh⁵ka¹ ship
keh⁵ka’sa¹ lamb
kum⁵raŋ’sa¹ colt
kan⁵so¹ pour liquid
ko⁵ße³ cup
ka¹lak spoon
ku¹lakteu² fork
ka¹ləp tongue
kam¹ne’pək thirst
kə³mun² turmeric
ka⁵ße³ bold
ka⁵tu¹ mute
ka⁵taʔloŋ’ko²şəʔ sharp shiny stick
kum⁵bə’di’təcէn³ wooden base
ka⁵ren’sin’paʔ hollow stick
kam⁵tećina’ko²lo³ brass vase
ke⁵pon’ja² he-goat
kan⁵ka² civet cat
kut coat (Loan word)
katpi’ti² tailor
ka²βe²
ka²pin²ri²
ko²pi²ta²
kam²teon²
kəna¹
ko²rod
ku²pɔ¹ ra²'ka¹
ko²rin²
ku¹noŋ²
kə
kəlo²
kənaʔ
kam¹so¹
kəʔtu¹
kaʔtaʔloʔkə'seʔ
ko³mun²
kay'še¹
kum²be³li'tein¹
ka¹lai³
kam¹bo¹
kupka¹
kəra²maʔ
kam¹ne³pak
kəra²

/b/  kaʔto³            chin
     gaʔ            village
     maʔ            from/to
     leʔ            push
     koʔ            cry
     teʔ            hit
     teʔtɕit        know

/m/  i⁵mi'kə¹        tail
     mi²            person
     ma¹            stop (command)
     mi⁵wa¹          male
     mi⁵mi³          cat
     mi³ci¹          seven
     mi¹(səʔ)       lick
     i⁵mi³sat³       lick
     mit            eye
     a'min³          ripe
     min'/i'min³     name
     man²su'ka¹      cattle
     may²lan²       dream
     i'məŋ²         corpse
     mo²            2s
     mo²tu²          heart
     man²pan²        story/tell
     mi³ja¹          yesterday
     may²ru'ʨe³     grave
     mi⁵tɕup         blind
     mo³ci¹          bunch
     man¹            blessing
     mi³tei'ʨe²nin² meeting house
<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>mek</td>
<td>hook</td>
</tr>
<tr>
<td>miʔ</td>
<td>negative</td>
</tr>
<tr>
<td>mis⁴la³</td>
<td>statue</td>
</tr>
<tr>
<td>mo³te⁴in⁴</td>
<td>specialist</td>
</tr>
<tr>
<td>mon²</td>
<td>stable</td>
</tr>
<tr>
<td>mi²dan⁴</td>
<td>group of humans</td>
</tr>
<tr>
<td>mam¹</td>
<td>leave</td>
</tr>
<tr>
<td>ma²ra¹ma¹na³</td>
<td>perhaps</td>
</tr>
<tr>
<td>mi³si³pi³kam²</td>
<td>tear</td>
</tr>
<tr>
<td>mit³le³</td>
<td>eye brow</td>
</tr>
<tr>
<td>mn³ecu³sa¹</td>
<td>calf</td>
</tr>
<tr>
<td>mn³te⁴u³tap</td>
<td>stable</td>
</tr>
<tr>
<td>mapin³la²</td>
<td>scar</td>
</tr>
<tr>
<td>me²ke²</td>
<td>what</td>
</tr>
<tr>
<td>ma?</td>
<td>from/to</td>
</tr>
<tr>
<td>lum²</td>
<td>flood</td>
</tr>
<tr>
<td>me³jay²</td>
<td>festival</td>
</tr>
<tr>
<td>moy²</td>
<td>inside</td>
</tr>
<tr>
<td>muy¹</td>
<td>country</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/n/</td>
<td>1p (inclusive)</td>
</tr>
<tr>
<td>ni¹run²</td>
<td>1p (exclusive)</td>
</tr>
<tr>
<td>a’ni¹</td>
<td>father’s sister</td>
</tr>
<tr>
<td>ni²,i’ni³</td>
<td>laugh</td>
</tr>
<tr>
<td>a’ni³a¹rin³</td>
<td>father’s younger sister</td>
</tr>
<tr>
<td>a’ni³dʑɔŋ²</td>
<td>father’s elder sister</td>
</tr>
<tr>
<td>a’ni³na¹</td>
<td>daughter-in-law</td>
</tr>
<tr>
<td>a’na¹dʑɔŋ²</td>
<td>sister</td>
</tr>
<tr>
<td>a’na¹</td>
<td>elder sister</td>
</tr>
<tr>
<td>na²</td>
<td>field</td>
</tr>
<tr>
<td>ne²</td>
<td>forbearance</td>
</tr>
<tr>
<td>nu²</td>
<td>instrument for cleaning rice</td>
</tr>
<tr>
<td>nu²</td>
<td>instrument for cleaning rice</td>
</tr>
<tr>
<td>nu²</td>
<td>instrument for cleaning rice</td>
</tr>
<tr>
<td>gù¹</td>
<td>infection</td>
</tr>
<tr>
<td>nam¹</td>
<td>rotten</td>
</tr>
<tr>
<td>na³ki³</td>
<td>ear</td>
</tr>
<tr>
<td>na³sa³</td>
<td>side of face</td>
</tr>
<tr>
<td>a’nəno²</td>
<td>younger brother</td>
</tr>
<tr>
<td>no³no²sa¹</td>
<td>child</td>
</tr>
<tr>
<td>no³ee³sa¹</td>
<td>baby</td>
</tr>
<tr>
<td>na³kuʔ</td>
<td>mouth</td>
</tr>
<tr>
<td>na¹βaŋ²ti²</td>
<td>centipede (non-poison)</td>
</tr>
<tr>
<td>na³</td>
<td>'at'</td>
</tr>
<tr>
<td>ne²</td>
<td>tired</td>
</tr>
<tr>
<td>nin¹rak</td>
<td>thirsty</td>
</tr>
<tr>
<td>nun²</td>
<td>mix</td>
</tr>
<tr>
<td>βan¹te⁴u¹</td>
<td>midnight</td>
</tr>
<tr>
<td>ti³fla³na²</td>
<td>ancient times</td>
</tr>
<tr>
<td>sin³ka³bin²ra¹</td>
<td>twilight</td>
</tr>
<tr>
<td>nam³sa¹</td>
<td>June</td>
</tr>
<tr>
<td>nam³nu¹</td>
<td>July</td>
</tr>
<tr>
<td>nakpo³</td>
<td>morning</td>
</tr>
<tr>
<td>na³di⁴</td>
<td>ear wax</td>
</tr>
<tr>
<td>na³bin²</td>
<td>ear lobe</td>
</tr>
<tr>
<td>na³</td>
<td>at</td>
</tr>
</tbody>
</table>
\texttt{nəŋ²} choke
\texttt{na²pə¹du²} breakfast
\texttt{na²tən²} deaf
\texttt{nəpka²} anus
\texttt{no²com²tən²} womb
\texttt{na²ti²} earring
\texttt{nɪtəp'} udder
\texttt{nam¹dza¹} color
\texttt{ne¹tən²tən²} soft
\texttt{nin³kun³} have capacity
\texttt{nin³kun³} power
\texttt{ne¹} tobacco
\texttt{no²kə¹} open locative
\texttt{na²} pet
\texttt{ne²} tired
\texttt{nin¹rak} thirsty
\texttt{nut²} mix
\texttt{niŋ³kən²} cause
\texttt{na²sə²} side of head
\texttt{no²təi²kə²} orphan
\texttt{ne²ɾi²kən³} coconut (Loan word)
\texttt{naŋ²} pet
\texttt{nam²zən²} mortar
\texttt{nət} squeeze

/ɲ/ 
\texttt{naʔ} bee
\texttt{no²} fried things

/ŋ/ 
\texttt{ŋəm²nəʔ} meat: animal
\texttt{i²ʒam³} flesh
\texttt{ŋa¹} 1s
\texttt{ŋa²kə³} mithun
\texttt{ŋa¹} buffalo
\texttt{ŋə} fish
\texttt{ŋa²tən²kəm³} pond
\texttt{ŋəm³} animal
\texttt{βu¹ŋəm³} chicken
\texttt{niŋ³kən²} cause
\texttt{ŋi¹} wild
\texttt{ŋə} say
\texttt{ŋə} break
\texttt{ŋət} able
\texttt{ŋe²} fry
\texttt{ŋa²ku¹nəʔkəʔ} forward direction
\texttt{ŋə²bə²} king
\texttt{ŋə²nu²} queen
\texttt{ŋə²sen¹} truly
\texttt{ŋa²ku¹nə²} in front of
\texttt{ŋə²} Great King
\texttt{ŋəm²bo¹tə²} gnat

/β/ 
\texttt{a²βi¹} grandmother
\texttt{βət²kə²} leech
\texttt{α²βəŋ²} father’s brother
\texttt{βəŋ², i²βəŋ³} come
βan¹ fire
βan¹dʑəŋ² father’s elder brother
i’βan¹ father’s younger brother
a’βa¹, i’βa¹, βa¹ father
βa¹tei¹ one
βa³ni² two
βa³rum² three
βa³ tooth
βa³ bamboo
βan¹kut smoke
βan¹mu³to³ extinguish
βu¹ki²ka² parrot
βu³ti¹ egg
βu³ŋam¹ chicken
βon² rice (cooked)
βok belly (exterior)
βsk pig
βu¹pɔŋ’βa¹ cock
βu¹ku³′ku¹ hen
βan¹ cousin
βe² move side by side
βan³ come
βan³ November
βan³mà’ka¹ chew
βak’na¹ sow
βuŋ²ka³′teo³ bamboo pool
βu¹ra² kite
βu¹ri² porcupine
βa³pah² floor
βan³ra¹ welcome
βan³ne³’tein’pan² lamp, torch
βan³ne³′ka³′ja² candle
βsk koʔ grunt (pig)
βan¹ rich
βan¹flan³tele³ continue
po’βle³la’βe³ rabbit
βan³lẹu¹ midnight
ti’βa³′na² ancient times
βa³kom² molar tooth
βe² splash water

/s/ a’dl’a’rin¹ mother’s sister, younger
a’sl’a’jɔŋ’² mother’s sister, elder
si’ŋ¹ silver
si’sola³ star
sɔt, i’sat eat (rice)
se¹ son
a’sa¹ / sa¹ poison
sa² descend
sa²
sum¹ləm² mushroom
sɔ’mum’ka¹ insect
sɔ’ka² shoulder
kum’ran’²sa¹ colt
si’mɛ³kaʔ thin stick
sat  eat (V) (dishes)
su¹min'ka²  anthill
su²h²  comb
se¹kap  razor
si²lik  silk (Loan word)
sa²bi²  key (Loan word)
səŋ²  new leaf
sum¹la¹  image (photo)
si³ri¹  gourd
sonuk  order
sin¹ka²bin'ra¹  twilight
se¹dzəŋ'ka³  grub
sam²fe¹na²  beside

/e/  
ça³ku²  thumb
u'ce³ka³  bird
æ³rum¹  2p
æ³rum²  3p
æ'k³ha²  bear
ea²  tiger
cu², i'cu²  roast
cum¹  salt
cum³  cut dried tree
cu²  
a'cet  eight
ca²  give birth
cæ²  fish net
ci²  finger
cokmo'røŋ¹  deer horn
cu²pon'yfa²  ox
cum²kam'jo³  lagoon
cah'ei²  hundred
cam²na²  mirror (Loan word)
ceh³  liquor
citrum²  urinate
cam²  clan name
cæ'tru'ka³ri¹  lemon
cæ²tei'ra² βa'tei²ra² βa'tei²  hundred eleven
cæ²tei'ra² ro²ba'nya¹  hundred fifty
citipite'pe³  dawn
ci³jaŋ²  silver
citrum²  urinate
cu²pon'yfa²  ox
cum²kam'jo³  lagoon
cam²na²  mirror (Loan word)
ceh³  beer/ wine
cah'ei²  hundred
cam²  clan name
cæ²tei'ra² βa'tei²ra² βa'tei²  hundred eleven
cæ²tei'ra² ro²ba'nya¹  hundred fifty
ci³ke²fla¹  God
ca¹ri³ri³  light
cæ²ru'ka³ri¹  lemon
cap  standing

/l/  
æ³pu'ka¹/æ³pu'ka¹  rat
<table>
<thead>
<tr>
<th>Dipyoti GOSWAMI</th>
<th>Preliminary phonology of Rera Tangsa</th>
<th>JSEALS 11.2 (2018)</th>
</tr>
</thead>
</table>

| za²pi³ | moon |
| zo²ko² | river / valley |

| ŋa³pi³ | moon |
| ŋo²ko² | river / valley |

### /h/

| hin²pe³ | grass |
| he¹ | crab |
| hi¹ | hanging bridge |
| ro³ha³te³l¹ | ten |
| hap | chest |
| a'ho' | low |
| keh³ka¹ | ship |
| keh³ka'sa¹ | lamb |
| ho³pa'ka² | shrimp |
| ham¹ro³ka³ | centipede poison |
| ha¹ | stay |
| hab² | beautiful |
| hit | fear |
| hu¹ | think |
| hi³te³t³et³ | sneeze |
| ho³lo² | naked |
| ha³mo³ka'ka² | gape |
| hi³po¹ | barley |
| hin³te³l¹ | thousand |
| han² | strong |
| ho¹ | burn (vanquish) |
| hab² | beautiful |
| he³ | joy |
| he³te³l² | nest |
| hu¹ | think |
| ho² | dry |
| hu² | to close a hole |
| hum²la¹ | comfort |
| ha¹gu³nu'na² | outside |

### /l/

<p>| lip³ka³ | tongue |
| lip³ta³ | frog |
| la³ | eagle |
| lam³ko³ | road |
| lam³pa¹ | paddy rice |
| lan³ta² | kill |
| a'lan³kam³ | hard |
| laŋ⁹ha² | banana |
| i'sum³ | loss |
| a'lu¹ | high |
| lak | forgot |
| lum³dʑe² | boil |
| loŋ³kur tt³ | stone |
| laŋ¹ | climb |
| lan² | kill |
| lam² | bring |
| lei | vocative marker |
| lik'lap | book |
| lua¹ | love |
| lum¹ | flood |
| lum² | cook (V) |
| lum³dʑe³ | boil |
| loŋ³can² | cave |</p>
<table>
<thead>
<tr>
<th>lit</th>
<th>paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>litpa¹</td>
<td>bracelet</td>
</tr>
<tr>
<td>bən³</td>
<td>disobey</td>
</tr>
<tr>
<td>lan³</td>
<td>biting</td>
</tr>
<tr>
<td>lin³sam²</td>
<td>yam</td>
</tr>
<tr>
<td>laŋ³sa²</td>
<td>thatch</td>
</tr>
<tr>
<td>li³su'ri³</td>
<td>lychee (Loan word)</td>
</tr>
<tr>
<td>laɾei'ka³</td>
<td>arrow</td>
</tr>
<tr>
<td>le¹</td>
<td>open</td>
</tr>
<tr>
<td>le³</td>
<td>the whole tree</td>
</tr>
<tr>
<td>lum³dzap</td>
<td>fan</td>
</tr>
<tr>
<td>la¹</td>
<td>look</td>
</tr>
<tr>
<td>litha²ko?</td>
<td>croak (frog)</td>
</tr>
<tr>
<td>li²</td>
<td>boat</td>
</tr>
<tr>
<td>la'din³din¹/ a'la²</td>
<td>straight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>/r/</th>
<th>/r/</th>
</tr>
</thead>
<tbody>
<tr>
<td>ri¹, i'rit</td>
<td>die</td>
</tr>
<tr>
<td>rin¹</td>
<td>liver</td>
</tr>
<tr>
<td>i'rin¹</td>
<td>tie</td>
</tr>
<tr>
<td>i're²ko³</td>
<td>thin</td>
</tr>
<tr>
<td>ra³ko³heʔ</td>
<td>breath</td>
</tr>
<tr>
<td>i'raŋ²ko²</td>
<td>wing</td>
</tr>
<tr>
<td>raŋ³lum³ti²</td>
<td>sweat</td>
</tr>
<tr>
<td>i'ra'ka³</td>
<td>bone</td>
</tr>
<tr>
<td>a'ram³ka¹</td>
<td>otter</td>
</tr>
<tr>
<td>a'raŋ¹</td>
<td>alive</td>
</tr>
<tr>
<td>raŋ²</td>
<td>sky</td>
</tr>
<tr>
<td>rak³</td>
<td>disease</td>
</tr>
<tr>
<td>raŋ³peʔ</td>
<td>thunder</td>
</tr>
<tr>
<td>raŋ³weʔ</td>
<td>rain</td>
</tr>
<tr>
<td>raŋ³mit</td>
<td>sun</td>
</tr>
<tr>
<td>raŋ³mok</td>
<td>lightning</td>
</tr>
<tr>
<td>raŋ³ni?</td>
<td>day</td>
</tr>
<tr>
<td>ro²</td>
<td>bush</td>
</tr>
<tr>
<td>ro²ha'tat¹</td>
<td>ten</td>
</tr>
<tr>
<td>a'rok</td>
<td>six</td>
</tr>
<tr>
<td>i'ra³</td>
<td>fat</td>
</tr>
<tr>
<td>i'raŋ²</td>
<td>horn</td>
</tr>
<tr>
<td>ri'ra²</td>
<td>vain</td>
</tr>
<tr>
<td>raŋ³sun³da'beta³ka³</td>
<td>winter</td>
</tr>
<tr>
<td>raŋ³lum³dzap³</td>
<td>summer</td>
</tr>
<tr>
<td>rək³</td>
<td>push in the ground</td>
</tr>
<tr>
<td>raŋ³βa²</td>
<td>year</td>
</tr>
<tr>
<td>raŋ³ni³</td>
<td>day</td>
</tr>
<tr>
<td>raŋ³dzap³</td>
<td>evening</td>
</tr>
<tr>
<td>raŋ³βan³ma²</td>
<td>early morning</td>
</tr>
<tr>
<td>raŋ³ni³i'dzam²</td>
<td>mid-day</td>
</tr>
<tr>
<td>raŋ³dzap³te³u³</td>
<td>noon</td>
</tr>
<tr>
<td>raŋ³βan²</td>
<td>night</td>
</tr>
<tr>
<td>rap</td>
<td>cross</td>
</tr>
<tr>
<td>rin²</td>
<td>small</td>
</tr>
<tr>
<td>si'ri¹</td>
<td>gourd</td>
</tr>
<tr>
<td>raŋ³ni³du¹</td>
<td>lunch</td>
</tr>
<tr>
<td>raŋ³dzap³du¹</td>
<td>dinner</td>
</tr>
<tr>
<td>ri³te³u³te³lɔ³pun³</td>
<td>cotton basket</td>
</tr>
<tr>
<td>ri³te³u³te³lɔ³pun³</td>
<td>wheel sticks</td>
</tr>
</tbody>
</table>
ri¹da'tein'ke⁵rum² weaving frame
rom² waist
ra⁴ee² courtyard
ra¹ add
ra² enemy
ray³nu'ta¹ up
ra³bitla¹ sudden
ray³tcakta¹ above
rom⁴ku¹ famine
ram⁴tak hunger
ra⁵ni¹ twenty
ra⁶ni³ ra⁷beta'tei² twenty-one
ra⁷rum³ thirty
ra⁸bi⁵li³ forty
ra⁹ba'⁶na¹ fifty
ra⁹ba'⁶na'ra² beta'tei² fifty-one
ra⁹a'rok sixty
ra⁹a'rokra² beta'tei² sixty-one
ra⁹mi⁶tei³ seventy
ra⁹mi⁶tei³ beta'tei² seventy-one
ra⁹a'iate² eighty
ra⁹a'iate² beta'tei² eighty-one
ra⁹a'ku² ninety
ra⁹a'ku² beta'tei² ninety-one
rkakla¹ perfect
ray³nak dim
ray³gin'ra⁴ accurate
rom² waist
ra⁴ee² courtyard
ra¹ need
ri¹ thread
re² thin
ra⁴lo³ need
rpat¹ one above another

/j/ jo³pin² flood
jok⁵t¹ monkey
dzi⁴jam² how long
jo² direction
jun² chase
jo¹ku'ro'gah² headland, point
i'joh² swallow
ja'kop shoe
je² fall
jun² chase
jag²lo² soon
je¹ yes
ju¹ko² buttocks

/i/ i¹pi⁷ 3s
i¹ma¹ wound
i¹rak pain
i¹pin⁷ swelling
i¹neh⁷ tired
i¹tee⁷ wake up

lxix
i¹ka³ then
i¹na² that
i¹ne² tiered
i¹ra²/a¹ra² this
d¹'go² defecate
i¹βa¹jan' beget (of father)
i¹ma² wound
i¹meh³ scar
i¹han¹ heal
i¹teu'paʔ suck
i¹naj¹ choke (N)
tei¹ku²ti² a¹jɔŋ² doctor
i¹ke²le'go² peel
i¹geʔ scrape hard
i¹gut scrape smooth
i¹lum¹ cook (N)
i¹sonj' rayj¹ fin (dorsal)
i¹ge³ fry (N)
i¹teu² drown
i¹dam³ flatten dough
i¹ta¹bun² mix stir
i¹teʔko³ cremeate
i¹pin¹ sew
i¹βin²geh² tattoo
i¹eap winnow
i¹joŋ'si² spleen
i¹lit bile
i¹moh² paint
i¹bam³ wait
i¹kun¹ hide
i¹βi³ count
i¹teh² measure
i¹ta³pay' first
i¹ta²tom² last
i¹tum¹ finish
i¹he² pull
i¹si³ko² near
i¹ti²i¹βa² ancestors
i¹tan¹ descendants
i¹βan² stepfather
i¹ci² stepmother
i¹pi³ lift up
i¹ra³ sound
i¹nam² loan
i¹ma²mo³ give away
i¹sa¹lai³ interpret
i¹ka³ja³ surprise
i¹ka³rum³ support
i¹na² and
i¹dam²na² between
i¹mon²na² under
i¹ra³pan¹ subtract
i¹ta³ja³ increase
i¹ta³rin¹ decrease
i¹pan³na³ first
i¹po¹ float

lxx
i¹ʃin¹ | sink
i²bun²pak | ruin
i¹to²hoʔ | dry out
i³dзо¹dзо³ | throw away
i¹put | blow
i¹reʔ | find
i²tum² | end
i²paj¹ | begin
i²meʔ | shake
i²ʃum¹ | do
i²pin² | swelling
i³ma³ | wound
i¹rak | pain
i³ma² | wound
i³meh³ | scar
i¹han¹ | heal
i¹tʰə¹paj² | first
i⁴tum³ | finish
i⁴ʃi³ko² | near
i¹ʃi³ | count
i¹tʃeʔ² | measure
i⁴moh² | paint
i⁴bam³ | wait
i⁵kum¹ | hide
i⁴tɕən³məŋ² | skinny
i⁵tʃeʔ | wake up
i³ke²le²go² | peel
i⁴geʔ | scraping hard
i⁴gut | scraping smooth
i³tʃe¹paʔ | suck
i³naŋ¹ | choke (N)
i³ne³ | fry (N)
i⁴tʰə¹bun³ | mix
i⁴lum² | cook (N)
i¹dam³ | flatten dough
i³tʃeʔ | drawer
i³tʃaʔkɔ³ | cremate
ı³joθ² | swallow
ı⁴cap | winnow
ı³joŋ³si² | spleen
ı³lit | bile
ı⁴son²raŋ² | fin (dorsal)
ı³ʃɪn²gɪʔ | tattoo
ı³pin¹ | sew
ı³he² | pull
ı⁴tum²luŋ³ | round

le/ | he¹ | crab
le²tɕi² | nest
be²jəŋ² | all
se³dzoŋ³ka³ | grub
mitʃe⁴ | eye brow
me³jəŋ² | festival
mapin⁴le² | scar
e³li² | seed
/ɛ/  
me²ke²  what  
e³kom³ba¹  few  
pe¹rut  garden  
bo²le²dza³  elephant trunk  
bo²le³ba²  elephant tusk  
citpite⁶pe⁶  dawn  
pu²pe²  alligator

/a/  
ka  this  
kalo¹  prepare  
komaʔ  after that  
mun'rutse²  grave  
kora²  that  
sənuk  order  
kəna¹  there

/a/  
a²ce²  strong  
a²de'nu¹  niece  
a³ra²  here  
a³ja²  here  
a³duʔ  downside  
a³ni¹  long ago  
a³cak maŋ²  many  
a³cc'kom²  red  
a³han²  good  
a³ki²  angry  
a³lu²  out  
a³moteu¹  now  
a³de'ba¹  brother’s son  
a³de'nu¹  brother’s daughter  
a³gu'pa'ba¹  wife’s father  
a³ni'pa'nu¹  wife’s mother  
a³nin'ba¹  wife’s brother  
a³hi'ba²  daughter’s husband  
na³'sa²  side of head  
maŋ¹  dream (v)  
a³ni'ma²  ancient  
a³'kin²  time  
a³ma'teu²  raj⁰ni³  today  
a³nappo¹  tomorrow  
a³'ranj²  alive  
a³'hin²  raw  
a³'katgah²  mainland  
a³'lu¹  high  
a³'kin²  chance  
a³'tog²  top  
a³'lu'jah¹  far  
a³'dzaʔ / dzəʔ  wrong  
a³'ʃe¹  strong  
a³'sam²  sweet  
a³'sam³'kam³  sour  
a³'kopkam³  bitter  
a³'ri'ʃa¹  few  
a³'rə'a'na²  with  
a³'nokmaŋ²  sharp  
a³'li'go²  heavy
a¹ra² here
a¹ja² here
a¹duʔ downside
a¹ni¹ long ago
a¹cak maŋ² many
a¹cc'kom² red
a¹han² good
a¹ki² angry
a¹lu² out
a¹moteu¹ now
a¹'go² no
a¹rapkam² glue
a¹mo'ka'ka² yawn
a¹lu'maŋ² deep
a¹fakkam² narrow
a¹litikam² bright
a¹'ioʔ short
a¹je'maŋ² clean (be clean)
 a¹ro² a'na³ gather
a¹ice² strong
a¹de'mu¹ niece
a¹lu'jah³ far
a¹lu² high
a¹'ru² today
a¹'ru² raŋ²ni³ tomorrow
a¹nappo¹ knead dough
a¹rapkam² alive
a¹ra'j long ago
a¹hi¹ long ago
a¹ni'ma² ancient
a¹'kin² time
a¹'dz³ lazy
a¹'kotgah² mainland
a¹'tog² top
a¹'kin² chance
ləŋ'ean² cave
ram²'ak hunger

/u/
tum¹'kan²'laŋ²
 tcum² pus
tupk¹ grasshopper
mən'teu²'tap stable
tce'u²'pəŋ'ba¹ bull
mən'teu²'ka¹ calf
dʑum² house
 gu'lan² who
muy² country
u'tce'ko'ʃa¹ beak
u'tceu²'nam'dzak vegetable leafy
u'tceu²'ka'ra² vegetable non-leafy
ut camel (Loan word)

/o/
oi²'teu²'ka² orphan
mo²'gə inside
ŋam²'bo'ti² gnat small
go¹ have
a'mo'ka'ka² yawn

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| /ɔ/ | pin²tɛŋ²        | tree       |
|     | kɔˈrin²       | snore      |
|     | tomˈriˈpo²   | spine      |
|     | kuˈnɔŋ²      | back of head |
|     | kuˈpɔ1 raˈka³ | skull      |
|     | puˈpɔ²       | bury       |
|     | poˈbleˈlaˈbe³ | rabbit     |
|     | dざˈŋkal¹    | maggot     |
|     | dzaˈŋŋ³      | leg calf   |
|     | βaˈkɔm²      | molar tooth|
|     | dinˈkaˈʁaˈkɔ³ | neck nape |
|     | tėoˈkaˈʁaˈkɔ³ | shoulder blade |
|     | dinˈkaˈʁaˈkɔ³ | collar bone |
|     | rɔˈni¹       | twenty     |
|     | rɔˈni¹ raˈbetaei² | twenty one |
|     | rɔˈrum¹      | thirty     |
|     | rɔˈbiˈli¹     | forty      |
|     | rɔˈbaˈŋa¹     | fifty      |
|     | rɔˈbaˈŋaˈra² βaˈtei² | fifty-one |
|     | rɔˈaˈrok      | sixty      |
|     | rɔˈaˈroka² βaˈtei² | sixty-one |
|     | rɔˈmiˈtei³     | seventy    |
|     | rɔˈmiˈtei³ βaˈtei² | seventy-one |
|     | rɔˈaˈat¹      | eighty     |
|     | rɔˈaˈat¹ βaˈtei² | eighty-one |
|     | rɔˈaˈku²      | ninety     |
|     | rɔˈaˈku² βaˈtei² | ninety-one |
|     | rɔˈmɔˈku³     | famine     |
|     | boŋˈbeˈdam³  | bread      |
|     | aˈɾɔpkom²     | knead dough |
|     | aˈdʒɔ³       | lazy       |
Appendix B: British map showing origin of Rera in Myanmar