Phonological documentation of Rekinniki Koryak (RK)

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Goals

Project's goals:

- ❑ Broad: describe the language's phonological inventory and phonotactics
- ❑ Narrow: investigate the phonetic properties of the epenthetic vowel, its phonemic status, and its role in syllabification

Talk's goals:

- ❑ Discuss the distinct phonotactic constraints on the distribution of the lateral consonant in Rekinniki Koryak (RK)
1. Data, methods, community background
2. Phonological inventory
3. Syllable structure
4. Patterning of /l/ in onsets and codas

Data

Field data:

- Audio and video field data (over 10 hrs) collected during the 16-week field trip (Jan-April 2017) in Tymlat, Ossora, Karaga, and Petropavlsovsk-Kamchatsky

- Audio and/or video field data (over 5 hrs) shared with me by the Tymlat Evangelical Church (courtesy of Pastor Lyudmila Innokentyevna Nuykavye) and the Kamchatka State Centre of Folklore (courtesy of the Centre's Director, Marina Yevgenyevna Belyaeva)

Secondary sources on Koryak and Alutor:

- Russian linguists (Bogoras 1907; Kibrik et al. 2000, 2004; Korsakov 1934; Kreinovich 1958; Moll 1960; Stebnitsky 1934, 1937, 2000; Zhukova 1967, 1972, 2001; Zhukova & 2004)

- Other (Bobaliuk 2004; Fortescue 2005; Nagayama 2003, 2011)

Methods and theoretical assumptions

▶ Methods: elicitation, observation, making audio and video recordings of citation speech and connected discourse, making transcriptions of texts, and conducting a comparative analysis of RK nouns and their counterparts in Alutor proper (the Alutor data providers are two speakers from Kultushino, Olutorsky District). I use the Praat (www.praat.org) and Audacity (www.audacityteam.org) software in my analyses.

▶ Theoretical assumptions: (i) The phonetic representations of the forms attested across the dialects of Alutor proper are taken here as a baseline for the analysis. (ii) I rely on the citation speech samples rather than on the recordings of connected speech in my instrumental measurements. (iii) I treat the speakers' judgements on syllabification very seriously.

▶ Limitations: the analysis deals with nouns only.

Maps 1-2. Bing maps of Rekinniki on the Pustaya River and on the Kamchatka map

Community background

- the Sea of Okhotsk mammal hunters/fishermen
- two major clans, Pustoretsk clan and Podkagernoe clan
- lived in self-isolation for centuries
- were moved to Tymlat and Ossora on the Bering Sea shore in 1981
- 26 speakers left; the Tymlat Evangelical Protestant church remains the last bastion where basically all communication is done in the RK language
- ethnic population is approximately 180 people
- a very close-knit community; the clan principles of mutual help are still in practice
- a positive view of the RK language
- officially does not have its own writing system, but there are multiple versions of writing conventions generated by the church members in the process of Bible translation

Issues under investigation

- Onsets: onsetful syllables include simple and complex onsets: what is the range of combinatorial possibilities in complex onsets?

- Nuclei: what segment can be a syllable nucleus? Preliminary evidence shows that a range of segments function as syllabifying elements, both sonorants and obstruents.

- Codas: syllables could be open (ends in a vowel) and closed (ends in a consonant or a consonant cluster): are there any restrictions on simple and complex codas?

- Stress: What are the rules of stress assigment? Is it sensitive to syllable weight?

- Vowel epenthesis: does the schwa differ from lexical vowels phonetically (duration, formant values)? Does it have a fixed vowel quality, or does it depend on the phonological context? Does it interact with stress assignment? How does it behave in loan words? Do speakers notice these vowels?

- Diagnostics of the minimal phonological word: what are the phonotactic constraints, apart from stress, which determine the shape and size of the phonological word, and the permitted segment combinations within it?

Consonant inventory

▶ There are 17 consonants (the phonemic status of ʔ is disputed by some scholars) (Table 1). /s/ and /ʕ/ are marginally attested, because of the low frequency, they are marked by an <*>.

▶ **Table 1.** Consonant inventory

	bilabial	denti-alveolar	laminal palatal alveolar	palatal	dorsal velar	uvular	glottal
plosive	p	t	tʲ		k	q	ʔ
fricative	v	*s			ɣ		
lateral		l	lʲ				
trill		r					
nasal	m	n	ɲ		ŋ		
approximant	w			j			*ʕ

Vowel inventory

▶ There are 6 vowels. The collected evidence indicates that there are two schwas: (i) one is an extra-short excrescent vowel which disappears in resyllabification, e.g., /lɣun/: [ˈlɣun.nə] 'birch (sg)', [ˈlɣu.naw] 'birch (pl)' ; (ii) another is part of the root, which has longer duration. The latter is retained in all word forms, e.g., ə̠n.ˈmeə.ŋn 'reindeer thigh (sg.), ə̠n.ˈma.wu 'reindeer thighs (pl)'.

Table 2. Vowel inventory

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

Syllable structure

▶ Kreinovich (1958:153) distinguishes among 8 syllable types in Koryak (V, VC, CV, CVC, CCV, CCVC, C, and CC). Three additional types in RK: VV, CVV, and CVCC types.

(1)
1.	V	ˈa.ŋaŋ	'God'
2.	VV	ˈoi.kaw	'willow'
3.	VC	ˈaŋ.qan	'sea'
4.	CV	ˈma.ka	'sphagnum moss diaper'
5.	CVV	ˈkai.ŋu	'bears'
6.	CVC	ˈpan.qa	'fur hat'
7.	CCV	ˈqla.vo	'man'
8.	CCVC	ˈŋraq.vo	'short pants'
9.	CVCC	qai.ˈqapl	'small ball'
10.	C	nk.l̩	'cedar nut'
11.	CC	ˈk̩m.t̪ʲek	'wild potato'

Nkl 'cedar nut': the spectra

▶ In Figure 2, the spectra show the first two segments being articulated as [nk] without any intervening epenthetic vowels.

▶ The [nk] cluster is followed by the extra-short open-mid vowel with the frequencies measurements 591, 1159, 2912Hz (placed between /ɔ/ and /ɜ/) and duration of 40 milliseconds. It is expressed by the symbol ə in the gloss layer.

▶ The last extra-short vocoid has the only strong first formant (F1 488), whereas its other formants are attenuated; the vowel's duration is 39 milliseconds. The formants of the lateral approximant /l/ are 412, 1115, 2790Hz.

Figure 2. The spectra of the sound segments in nkḷ 'cedar nut' (Daria Nikolaevna Kotavyi ...)
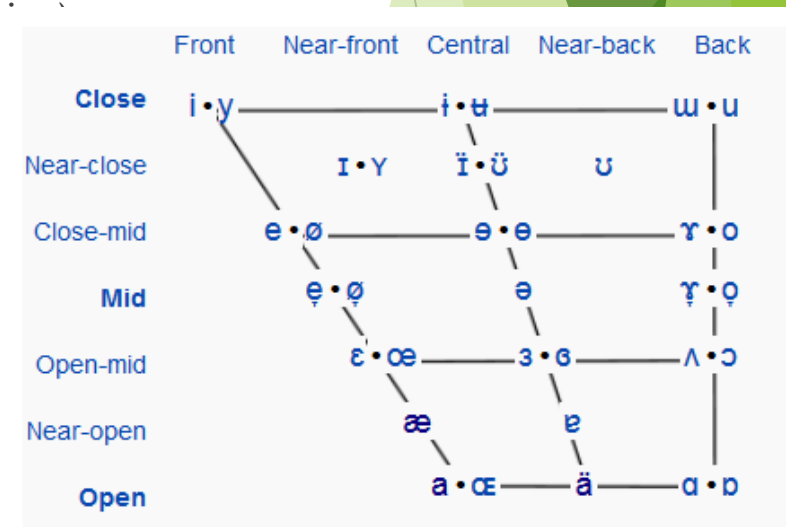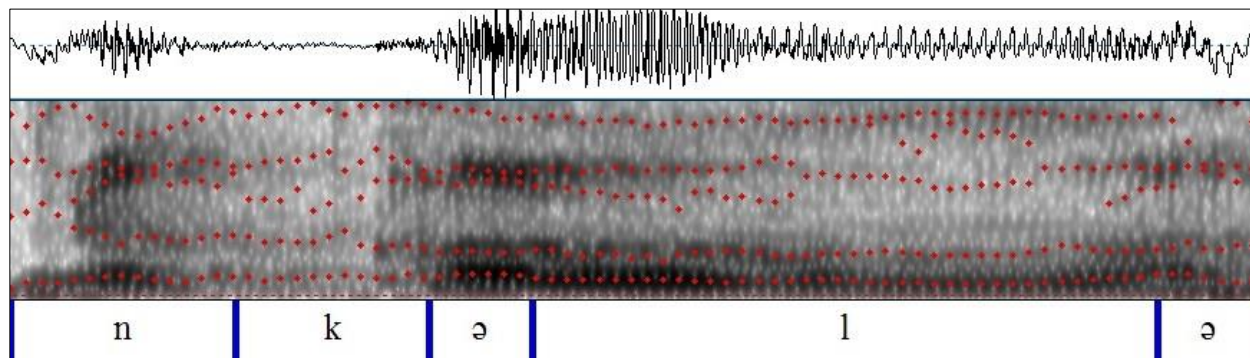
Articulation of the lateral approximant /l/

❑ /l/ is produced with the raised tongue, with the tip of the tongue being in contact with the alveolar ridge or the upper region of the teeth, with the airstream flowing along both sides of the tongue

❑ a low intensity consonant; the tongue is often in a 'neutral' position with little or no contact with the other articulator

❑ the articulation and the formant pattern change depending on its position in a word, and its position in a syllable.

Video 1: Anna Ivanovna Ivkovav on the articulation of the lateral approximant /l/

Articulation of /l/

Anna Ivanovna Ivkovav

Onsets: Simple onsets

▶ Overall, the structural patterns of L-onsets closely resemble the ones reported in other neighboring dialects. In the simple onset in (2d), the low intensity voiced /l/ in intervocalic position has the formant frequencies of 402, 1066, and 2517Hz. The F1 of 402Hz is explained by the positioning of the /l/ after the low open /a/ whose F1 measurement is 615Hz.

(2) a. ta.ˈla.naŋ   'hammer'

b. lo.ˈlo.ʔo   'breasts'

c. u.ˈlu.ʔu   'sea lion'

d. va.ˈli.va   'seal fat'

**Figure 3.** The /l/ in valiva 'seal fat' (Nina Naumovna Nesterova)
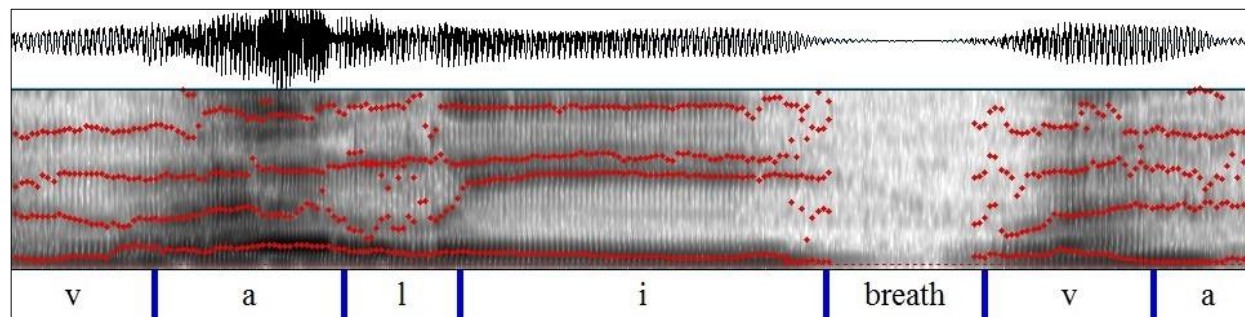
Complex onsets: Preconsonantal /l/ in word-initial onsets

▶ In word-initial complex onsets, the preconsonantal /l/ precedes a limited number of obstruents, e.g. /ɣ, q/. This is the most marked cluster type, Sonorant + Obstruent (SO) (Kreitman 2006).

(3) a. ˈlɣun.nə   'stone birch'

     b. lq.ˈlaŋ   'winter'

**Figure 4**. The /l/ in lɣun.nə 'birch' (Nina Naumovna Nesterova)
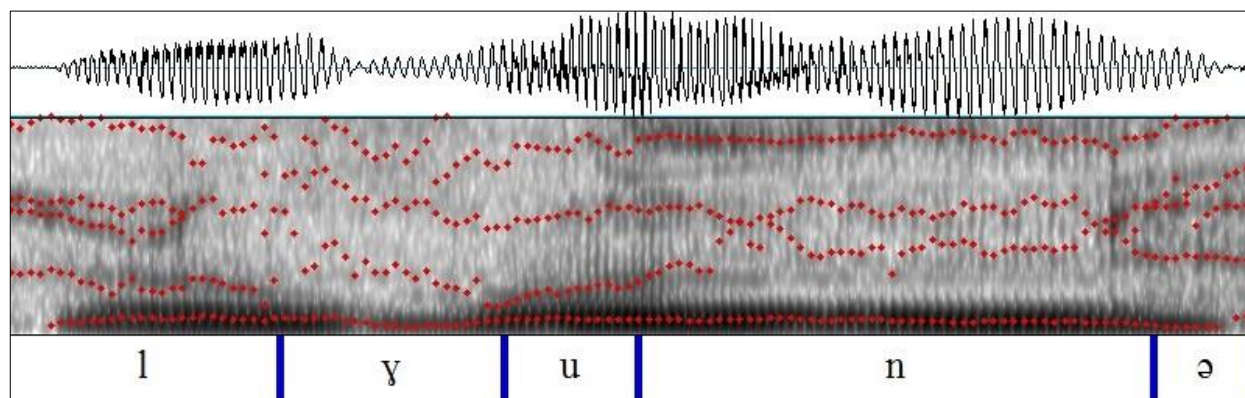
Complex onsets: Prevocalic /l/ in word-initial onsets

▶ In word-initial complex onsets, the prevocalic /l/ could follow either obstruents O or sonorants S. The OS cluster type is the least marked, the SS type is second marked (Kreitman 2006).

(4) a.   OS ˈpla.ku   'reindeer skin boots'

      b.   OS ˈqla.vo   'man', 'husband'

      c.   SS ˈrluw.we   'knots on a tree branch or trunk'

Figure 5. The /l/ in rluwwe 'knots on a tree branch or trunk' (Anna Ivanovna Ivkovav)
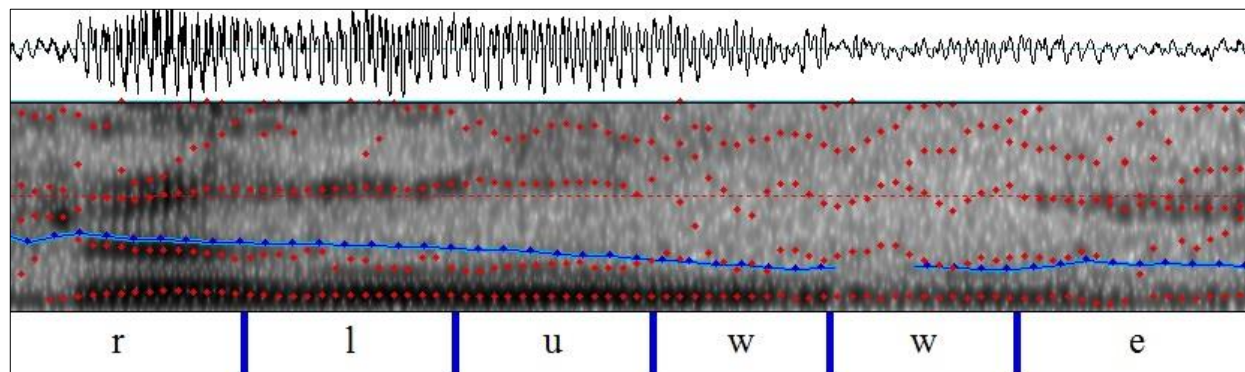
L-Codas: Realization of simple codas in word-final syllables

The realization of L-codas vis-à-vis other dialects is distinct in RK nouns.

Generalization 1. In word-final **simple** codas, the /l/ is deleted. The L-deletion is observed in the syllables of the OVL type, where the O is an obstruent and the L is an /l/. The /l/ is elided only in singular absolute, resurfacing in plural forms.

		Alutor	RK	Plural	Gloss
(5)	a.	kət.ˈtel	kət.ˈte	kət.ˈte.lu	'forehead'
	b.	mətʲ.ʔal	mətʲ.ʔa	mətʲ.ʔa.lu	'mountain ash'
	c.	taw.ʔal	taw.ʔa	taw.ʔa.lu	'dry fish'
	d.	ˈen.val	en.va	en.ˈva.lu	'nostril'
	e.	ˈtʲik.val	ˈtʲik.va	tʲik.ˈva.lu	'spinal fluid'

L-Codas: Realization of complex codas in word-final syllables

Generalization 2. Complex codas have the OL structure (O stands for an obstruent and L for an /l/).

▶ In complex codas, the word-final /l/ is retained. The complex codas are /ql, pl/.

(6) a. ma.ˈroq̲l̲ 'wild onion' (some consultants syllabify it as ma.ˈro.ql)

   b. ˈqai.ˈqap̲l̲ 'small ball'

L-Codas: Realization of simple codas in word-final syllables of the SəL and SVL types

Generalization 3. In word-final unstressed syllables of the SəL or SVL type, where S stands for a sonorant and L for an /l/, the rime is articulated as a long or diphthongal vowel. The /l/ resurfaces in the plural form.

▶ The combination of the schwa + /l/ is realized as a long central vowel, e.g., [ä:] in (7a)

▶ When a high front or a mid front vowel is followed by an /l/, the first target retains its frontness, whereas the second target is articulated as a centralized vowel, e.g., [ï] in (7b).

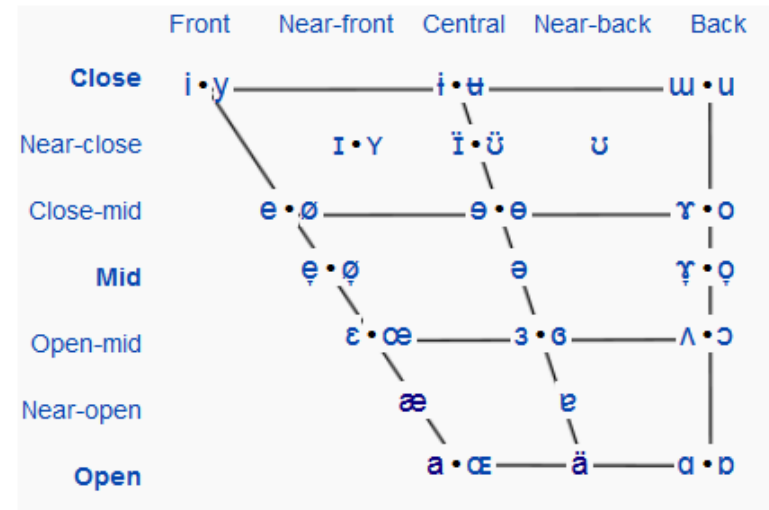|	Rime	L	Alutor	RK	PL	Gloss
(7) a.	/əl/	[ä:]	ˈme.<u>məl</u>	ˈme:<u>mä:</u>	mem.lu	'bearded seal'
b.	/il/	[eï]	li.<u>lil</u>	ˈli.<u>leï</u>	li.li.lu	'bile'
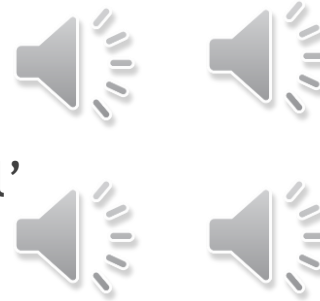
L-Codas: Realization of codas in word-initial and word-medial syllables

▶ **Generalization 4**. The rimes of word-initial onsetless syllables with the underlying L-codas appear to be limited to the /il/ and /al/ combinations, illustrated in (8a-b). Onsetful syllables in (8c-d), (9a-c), and (10a-b) do not appear to exhibit constraints on the distribution of onsets.

▶ **Generalization 5.** In word-initial and word-medial syllables, the Alutor L-coda is realized as a vowel in RK. The vowel is produced within a range of central vowels, e.g., [ä], [ɘ], [ə], [ɨ], or [ɨ].

Examples (8)-(10)

		Rime	L	Alutor	RK	Gloss
(8)	a.	/iL/	[ä]	ˈil.ʔaq	ˈɪ̈ä̰ʔa̰q	'bullhead, fish species'
	b.	/aL/	[ə]	ˈal.qap	ˈɛ̈ə.qɐp	'nail'
	c.	/aL/	[ə]	ˈnal.ɣən	ˈnɛəɣən	'hide'
	d.	/aL/	[ə]	ˈwal.lə	ˈwɛə.wn̩	'raven'

(9)	a.	/aL/	[ə]	ɣət.ˈkal.ŋən	ɣɪ̈t.ˈk̰ɛ̰ə.ŋn̩	'leg'
	b.	/oL/	[ä]	ve.ˈlol.ŋən	ve.ˈlɛ̰ä.ŋn̩	'ear'
	d.	/eL/	[ə]	wa.ˈmel.kal.ŋən	wa.ˈmɛə.qn̩	'lip'
	c.	/uL/	[ä]	lə.ˈʔul.qəl	lə.ˈʔɔ̰ä.qə	'face'

| (10) | a. | /OəL/ | [ə] | il.ˈqəl.ɣən | iɛ.ˈq̰ɛ̰ə.ɣn̩ | 'tree bark` |
| | b. | /SəL/ | [ə] | nə.ˈməl.ʔən | nə.ˈmɛə.ʔən | 'coastal dweller' |

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Reduplicated words with L-codas

- Reduplication is useful in testing the RK phonotactic constraints involving L-codas.

- Phonologically, the Alutor reduplicated base is usually a CVC unit (=R): R-R, or an additional epenthetic (EP) element is inserted (Nagayama 2011:280): R-EP-R.

- Morphologically, the base is a noun root.

- In RK, the Alutor reduplication pattern is used with significant modifications (Table 3), in accordance with the RK phonotactic constraints.

- The reduplicated base /CVL/ in RK undergoes segmental transformations: the word-final L-coda is deleted and the /iL/ rime is realized as a diphthongal vowel, as in (1)-(2).

- The CVL reduplication is avoided by adding an epenthetic vowel /ə/ to the noun root to form a disyllabic word, or by germinating the syllabic /l/ and adding /ə/, as in (3) and (4), Table 3, respectively.

- L-Germination as part of reduplication is a marginal word-formation technique, as in (5), Table 3 (* marks the form which is reportedly rarely used).

Reduplicated words with L-codas

Table 3. RK morphophonological patterns involving reduplication

Patterns	Base	Alutor form (sg)	RK form (sg)	Gloss
1. Word-final reduction	/val/	va.ˈli.val	va.ˈli.va	'seal fat'
	/vel/	ˈve.li.vel	ˈve.li.ve	'thimble'
2. Production of a diphthongal vowel and word-final reduction	/wil/	wil.wil	wïï.wɨ	'fermented sour fish'
	/til/	ˈtil.qə.til	ˈtɛä.qə.tə	'tolkushka'
3. Vowel epenthesis	/jil/	ˈji.lə.jil	ˈji.lə	'tongue'
4. L-germination without reduplication	/wil/	ˈwil.wil	wil.lə	'fermented sour fish'
5. L-germination plus reduplication	/mul/	ˈmul.lə.mul	*mul.lə.mul	'blood'

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Concluding remarks

▶ The central vowel occurring as the second part of the diphthongs in Examples (8)-(10) usually has the duration comparable to that of its first part. Most speakers are aware of this vowel and attempt to show it in their transcriptions. The diphthong retains its shape in plural forms.

▶ The systematic formation of diphthongs with the last segment being a central vowel -which corresponds to the Alutor L-coda- is the RK-specific phonological rule reflecting the diachronic sound change.

▶ The RK-specific phonotactic constraints involving the lateral /l/ point to the distinctiveness of the RK language variety.

▶ It calls for a re-examination of the existing Alutor dialect classifications.

Stebnitsky 2000:85: Rekinniki is an Alutor village; Nagayama 2003:XIII: Rekinniki is an Alutor village.
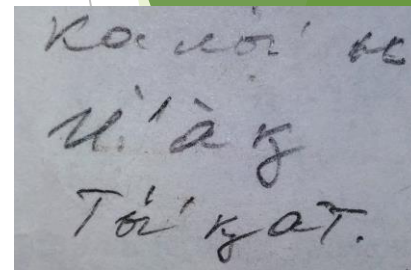
Table 4. Summary of the RK phonotactic constraints involving the lateral approximant (L)

#	Syllable type	Segment type	Position		Phonological constraints	Examples
			syllable	word		
1	LV	simple	onset	initial, or intervocalic	no constraint attested	(2)
2	LO	complex	onset	initial	LO combinations limited to /lɣ, lq/?	(3)
3	OL, SL	complex	onset	initial	both OL, e.g., /pl/, and SL, e.g., /rl/ combinations are allowed in onsets	(4)
4	OVL	simple	coda	final	L-deletion	(5)
5	OL	complex	coda	final	OL combinations limited to /ql, pl/?	(6)
6	SəL, SVL	simple	coda	final	the rime is a diphthongal vowel, either a long central vowel, or a diphthong with the second target being a central vowel	(7)
7	iL, aL, CVL	simple	coda	initial	the rime is a diphthongal vowel, with the second target being a central vowel	(8)
8	CVL CəL	simple	coda	medial	the rime is a diphthongal vowel, with the second target being a central vowel	(9)-(10)

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