Kazym Khanty schwa

Sasha Shikunova, EGG2023, Novi Sad

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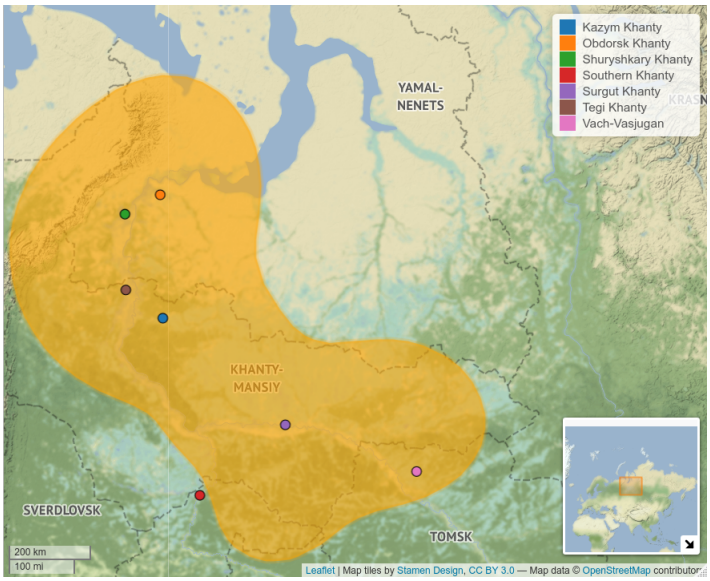
1 Basic facts

Russia, Khanty-Mansi autonomous region, Kazym



Vowel and consonant inventories (Kukhto et al. 2018). In the practical transcription, λ = ɬ

Table 1. The inventory of consonantal symbols

p	t	t′	k
	s š	ś	χ
m	n	ń	ŋ
	λ	λ′	
	l		
w		j	
	r		

Not every vowel occurs in the first syllable:

Table 2. The inventory of vocalic symbols (1st σ on the left, the rest are on the right)

i	ʉ	u	i	
e	ɵ		e	ə
(ɛ)		o	(ɛ)	
ä	a			a

≫ No contrastive voicing

≫ Less vowel quality contrast in non-initial syllables (in native Khanty words; cf. *kărtɵpka* 'potato' – Russian loanword)

Nominal inflection:

≫ base - number - possessive - case (1)

(1) *jaj-λ-aλ-a*
brother-PL-POSS.3SG-DAT

'3SG's brother'

≫ if the base ends in /u i/, insertion of /w j/ is possible with some morphemes

(2) a. *wʉλi* + *(ə)n* → *wʉλijn* 'deer-LOC'

b. *tɵ* + *əm* → *tʉw-əm* 'carry-NFIN.PST'

Verbal inflection:

≫ base - tense - inversive - agreement (3a)

≫ if the base ends in /u i/, insertion of /w j/ sometimes occurs (*ari* + *(ə)s* → *ari-js* 'sing-PST')

≫ infinitive: base + *ti/əm* (NPST/PST); *əm* after /u i/ causes insertion of /w j/ (*tɵ-ti* 'carry-NFIN.NPST' vs *tʉw-əm* 'carry-NFIN.PST')

(3) a. *λɵt-s-aj-ən*
buy-PST-PASS-2SG

'you were bought'

2 Vowel-zero alternations

Schwa is a phoneme, see a minimal pair in (4).

(4) a. *kurt* 'iron'
b. *kur-ət* 'bull-PL'

3 types of verbal bases wrt. schwa behaviour:

Form	No schwa	Alternating schwa	Stable schwa
	ort- 'divide'	ir(ə)t- 'turn'	orət- 'drag'
NPST[3SG]	ort-əλ ∼ orλ	irət-λ	orət-λ
PST[3SG]	ort-əs	irt-əs	orət-s
NPST-2SG	or-λ-ən	irt-λ-ən	orət-λ-ən
PST-2SG	or-s-ən	irt-s-ən	orət-s-ən
NPST-1DU	or-λ-əmn	irt-λ-əmn	orət-λ-əmn
PST-1DU	or-s-əmn	irt-s-əmn	orət-s-əmn

Vowel-final verb bases:

(5) Ca#
χunta-s 'run-PST' — *χunta-s-n* 'run-PST-2SG'

(6) Ci#
arij-s 'sing-PST' — *ari-s-ən* 'sing-PST-2SG'

(7) Cə#
pərλə-s 'soar-PST' — *pərλə-s-n* 'soar-PST-2SG'
also: *pərλə-s-mən* 'soar-PST-1DU'

(8) a. ari + əs → arijəs → arijs
b. ari + əs + ən → ari + s + ən (Egorov 2022)

Nominal inflection: possessive vs case markers

Form	Ci#	Ca#	CVC#
	wʉλi 'deer'	λapka 'shop'	sʉmət (sʉmt) 'birch'
NOM	wʉλi	λapka	sʉmət (sʉmt)
LOC	wʉλi-j(ə)n	λapka-j(ə)n	sʉmət-n
POSS.2PL	wʉλen	λapka-j(ə)n	sʉmt-ən

3 Stress

Trochee with some quirks (Tjutjunnikova 2022).

(9)	a.	ˌpăsaˈnɛma	păsan-ɛm-a ‘table-POSS.1SG-DAT’
	b.	ˈλaraś	λaraś ‘box’
	c.	ˈλaraˈśɛma	λaraś-ɛm-a ‘box-POSS.1SG-DAT’
	d.	ˈλaraśa	λaraś-a ‘box-DAT’
	e.	ˈpăsan	păsan ‘table’
	f.	ˌmuχəˈλaja	muχəλaja ‘around’
	g.	ˌjuntˈλaλən	junt-λ-aλ-ən ‘game-PL-POSS.3SG-LOC’

Interaction with schwa (Tjutjunnikova 2023).

(10)	a.	λaˈraśλa ∼ ˈλaraˈśəλa	λaraś-(ə)λ-a ‘box-POSS.3SG-DAT’
	b.	ˈpaknəlˈsəmn	paknəλ-(ə)s-əm(ə)n ‘scare-PST-3DU’
	c.	ˈpirśˈλaλən	pir(ə)ś-λ-aλ-ən ‘old-PL-POSS.3SG-LOC’
	d.	kərˈtəta ∼ ˈkərtəta	kərt-ət-a ‘settlement-PL-DAT’
	e.	ˈsewrsaˈλəmn	sew(ə)r-(ə)s-aλəm(ə)n ‘chop-PST-1DU>NSG’

4 Summary of observations

Schwa is not always epenthetic:

≫ There is a minimal pair where schwa makes the difference

≫ Schwa in the suffix can cause glide epenthesis – sign of an underlying rather than an epenthetic vowel

Verbal bases can be divided into 3 classes:

≫ Stable non-alternating schwa (*orət-* ‘to drag’)

≫ Alternating schwa (*ir(ə)t-* ‘to turn’)

≫ Consonant cluster never separated by schwa (*ort-* ‘to divide’)

In the verbal agreement suffix *-əmən* ‘1DU’ either of the two schwas can be present, depending on whether the base ends in a vowel or a consonant:

(11) Schwa alternation in *-əmən* ‘1DU’

a.	*irt-s-əmn* ‘turn-PST-1DU’	C#
b.	*orət-s-əmn* ‘drag-PST-1DU’	C#
c.	*ji-s-mən* ‘become-PST-1DU’	V#

The schwa in the 2SG suffix *-ən* can disappear in the same circumstances as the initial schwa of *-əmən* ‘1DU’.

(12) Schwa alternation in *-ən* ‘2SG’

a. *irt-s-ən* ‘turn-PST-1DU’ C#

b. *orət-s-ən* ‘drag-PST-1DU’ C#

c. *xunta-s-n* ‘run-PST-1DU’ V#

Alternating schwa seems to be lost after a full vowel but retained after another schwa; in contexts of vowel hiatus involving schwa, it is deleted:

(13) Schwa alternation in *-əmən* ‘1DU’; shown with supposed underlying schwas

a. *irt-(ə)s-əm(ə)n* ‘turn-PST-1DU’ C#

b. *orət-(ə)s-əm(ə)n* ‘drag-PST-1DU’ C#

c. *ji-(ə)s-(ə)mən* ‘become-PST-1DU’ V#

There is occasional glide insertion after /i/-final bases, which is conditioned by the presence of overt agreement morphology after the tense marker:

(14) a. *arij-s* ‘sing-PST’ — *ari-s-ən* ‘sing-PST-2SG’

b. *arij-λ* ‘sing-NPST’ — *ari-λ-ən* ‘sing-NPST-2SG’

In the nominal paradigm, there is glide insertion before some suffixes (15) and vowel coalescence before others (16).

(15) *wʉλi* + *ən* → *wʉλij(ə)n* ‘deer-LOC’

(16) *wʉλi* + *ən* → *wʉλen* ‘deer-POSS.2PL’

5 Analysis

For the Khanty language, we need to account for the restrictions on clusters:

≫ Word-initial clusters are prohibited ⇒ Khanty has word-initial CV

≫ Word-final clusters are possible ⇒ FENs can govern

There are three logically possible phonological representations of schwa:

≫ Associated vowel: expected not to alternate with zero

≫ Floating vowel: expected to alternate with zero

≫ Empty V-slot: expected to surface as zero except in a context that necessitates vowel epenthesis

I argue that all three logically possible schwas have to be recognised in Kazym Khanty.

5.1 Stable and alternating schwas

≫ Stable schwa corresponds to an associated vowel that behaves similarly to full vowels in that it cannot alternate with zero:

(17) Stable schwa in *orət-* 'drag'

a. *orət-s* 'drag-PST'

b. *orət-s-ən* 'drag-PST-1DU'

≫ Unstable, or alternating, schwa, the appearance of which is not explained by restrictions on clusters, corresponds to a floating vowel

(18) The schwa in *-ən* '2SG' can both occur and not occur inside a /sn/ cluster

a. *orət-s-ən* 'drag-PST-1DU' C#

b. *xunta-s-n* 'run-PST-1DU' V#

≫ Epenthetic schwa in Khanty is expected to appear in illicit clusters

≫ Restrictions on clusters suggest that such contexts would include CCC# or #CC

(19) Breaking up illicit clusters

a. *irətλ* /irtλ/ 'turn.NPST'

b. *əškola* /škola/ 'school'

≫ CCC# → CəCC, #CC → #CəC

What are the conditions under which an alternating/epenthetic schwa can be silenced?

≫ Alternating schwa occasionally appears in final closed syllables:

(20) a. *kur-ət* 'bull-PL'

b. *sʉmət* ∼ *sʉmt* 'birch'

≫ Final CC clusters are still allowed:

(21) a. *kørt* 'settlement'

b. *λońs′* 'snow'

≫ Hence, empty V-slot can be governed and silenced by FENs, whereas a floating schwa cannot (see Scheer (2012) for a similar analysis of Polish yers)

5.2 Representation of -λ/-*(ə)s*

How can we capture the difference between -λ/-*(ə)s*?

≫ Non-past tense suffix -λ never appears with a schwa before it:

(22) a. *irət-λ* 'turn-NPST'

b. *irt-λ-ən* 'turn-NPST-2SG'

c. *ari-jλ* 'sing-NPST'

≫ Past tense suffix -*(ə)s* is never preceded by schwa either, except for the final context after C# bases:

(23) a. *irt-əs* 'turn-PST'

b. *irt-s-ən* 'turn-PST-2SG'

c. *ari-js* 'sing-PST'

≫ In non-word-final contexts, the behaviour of these suffixes is completely identical

≫ The representation of -λ cannot contain schwa, whereas -*(ə)s* can

≫ I propose the following representations:

(24) -λ 'NPST'

(25) -*(ə)s* 'PST'

≫ The floating schwa in the past tense -*(ə)s* can associate to an empty V of the C# base and govern the base-internal nucleus but after a V-final base, there is no empty slot

There are two problems with having no schwa in -λ 'NPST' and a floating schwa in -*(ə)s* 'PST':

≫ Identical behaviour in word-final context with V# bases:

(26) a. *arij-s* 'sing-PST' — *ari-s-ən* 'sing-PST-2SG'

b. *arij-λ* 'sing-NPST' — *ari-λ-ən* 'sing-NPST-2SG'

≫ There is a /rtλ/ cluster that is tolerated word-medially in *irt-s-ən* 'turn-PST-1DU'

There has to be a contrast between the presence and absence of overt agreement morphology after -λ/-*(ə)s*, since this is the condition on glide insertion:

≫ Suppose /i/-final bases have a floating glide (there are lexical exceptions to the glide epenthesis rule)

(27) Epenthesis is not automatic

a. *ari-js* ‘sing-PST’

b. *ji-s* ‘become-PST’

≫ The schwa of the agreement marker governs the nucleus before *-λ/-(ə)s*

≫ A governed slot cannot license the C for the glide should associate to

≫ No epenthesis results

≫ Still, there is a problem with *-λ* ‘NPST’: the V before it can be governed by FENs

5.3 Schwas are controlled by the left context

Government and licensing operate from right to left. If only government and licensing were active in the Khanty schwa algorithm, we would not expect two different surface forms of *-əmən* ‘1DU’:

(28) Schwa alternation in *-əmən* ‘1DU’; shown with supposed underlying schwas

a. *orət-(ə)s-əm(ə)n* ‘drag-PST-1DU’ C#

b. *xunta-(ə)s-(ə)mən* ‘run-PST-1DU’ V#

≫ The left context makes the difference here: C# bases are different from V# bases

≫ This suggests that the mechanism of silencing alternating schwas is not government-based

≫ Alternating schwa can be incorporated and induce a stress shift:

(29) a. *ˈλa.raś* λaraś ‘box’

b. *λa.ˈraś.λa* ∼ *ˈλa.ra.ˈśə.λa* λaraś-(ə)λ-a ‘box-POSS.3SG-DAT’

≫ I suggest that schwas can be silenced when incorporated by a full (associated) vowel and subsequently deleted

(30) Deriving *măn-s-əmn* ‘go-PST-1DU’

a. Underlying form: *măn-(ə)s-(ə)m(ə)n*

b. Associate what can be associated: *măn-əs-əmən*

c. Run projection and incorporation: *măn-s-əmn*

(31) Deriving *xunta-s-mən* 'run-PST-1DU'

a. Underlying form: *xunta-(ə)s-(ə)mən*

b. Associate what can be associated: *xunta-s-əmən*

c. Run projection and incorporation: *xunta-s-mən*

≫ Schwas sometimes disappear after full vowels but always appear after another alternating schwa

≫ Underlyingly associated schwas are incorporating heads

≫ Floating schwas project to Line 1 and can be incorporated

≫ Empty nuclei do not project and are not incorporated, since Khanty stress is not weight-sensitive

Can we still keep the analysis of glide insertion?

≫ Glide insertion is conditioned by the right context (overt agreement morphology)

≫ Vowel-zero in *əmən* '1DU' is conditioned by the left context (final segment of the base)

≫ A compromise is an unsatisfactory system with complex rule ordering

(32) Deriving *ari-js* 'sing-PST'

a. Underlying form: *ari(j)-(ə)s*

b. Associate what can be associated (schwas only): *ari(j)-əs*

c. Run projection and incorporation: *ari(j)-s*

d. Associate glide if a licensed C is available: *ari-js*

(33) Deriving *ari-s-ən* 'sing-PST-2SG'

a. Underlying form: *ari(j)-(ə)s-(ə)n*

b. Associate what can be associated (schwas only): *ari(j)-əs-ən*

c. Run projection and incorporation: *ari(j)-s-ən*

d. Associate glide if a licensed C is available: *ari-s-ən*

6 Nominal paradigm and morphosyntactic boundaries

In the nominal paradigm, there is a notable difference between possessive markers and case endings:

Form	Ci#	Ca#	CVC#
	wʉλi ‘deer’	λapka ‘shop’	sʉmət (sʉmt) ‘birch’
NOM	wʉλi	λapka	sʉmət (sʉmt)
LOC	wʉλi-j(ə)n	λapka-j(ə)n	sʉmət-n
POSS.2PL	wʉλen	λapka-j(ə)n	sʉmt-ən

≫ What is the difference between possessive *(ə)n* and locative *(ə)n*?

≫ I propose that there is a CV boundary between the base and the locative marker but none before the possessive

≫ The possessive is closer to the base in the functional sequence (N < NUM < Poss < K)

Glossing abbreviations

1 = first person, 2 = second person, 3 = third person, DAT = dative, DU = dual, LOC = locative, NFIN = non-finite, NOM = nominative, NPST = non-past, NSG = non-singular, PASS = passive, PL = plural, POSS = possessive, PST = past, SG = singular.

References

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Fig. 2.17. Interior of the House of Culture in Pim settlement, 2001, featuring the name Torum (the Khanty high god) beneath an icon of Christ