Verbal Roots and Verbal Stems in Khinalug

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1. Introduction

1.1 Some notes on the language and the investigated material

Khinalug is a Nakh-Dagestanian language spoken endemically by app. 2.300 people in only one village, Khinalug, in Northern Azerbaijan, and, with a decreasing level of fluency, by a diaspora of at least 10,000 community members in Azerbaijan and Russia. The corpus on which the following investigation is based, was first collected within the DoBeS project "Documentation of Khinalug" funded by the Volkswagen Foundation, and further extended within the project "Linked Open Dictionaries", funded by the German Ministry for Education and Research. It contains:

- Transcriptions of audio and video recordings, including reports, tales, conversations, songs, poems, documentation of activities and other genres
- Texts written in Khinalug language by community members, most of which were initiated within the author's projects
- Translations of Azerbaijani short stories into Khinalug
- Three books published by the poet Rahim Alkhas in the 1990s in a cyrillic based alphabet, later re-printed as revised editions in a Latin-based alphabet
- Elicited material

1.2 References to previous grammatical descriptions

The most comprehensive and largely reliable grammatical description of Khinalug is provided in Kibrik et al. (1972) and several articles based thereon (Kibrik 1984, Kibrik 2003: 572–579). The new findings presented in this article either complement these descriptions or contradict them in some cases where the small amount of language data that Kibrik could resort to did not provide the information that would have been needed to draw appropriate conclusions.

The grammatical descriptions in Dešeriev (1959) will not be referred to since his analyses of the verbal morphology are mostly mistaken and ungrounded. The analyses of verb forms in Kerimov (1985) are little reliable, too. References to Kerimov (1985) will be made only when his descriptions provide additional insight to the works of Kibrik et al.

1.3 The Khinalug phoneme inventory

Table 1 shows the inventory of basic vowels in Khinalug.

	Front		Back	
	Labialised	Non-labialised	Labialised	Non-labialised
Close	*ü*	*i*	*u*	*ı*
Mid	*[ö]*	*e*	*o*	
Open		*ä*		*a*

Table 1: Khinalug vowel inventory

The vowel /ö/ is used only in loan words. Vowel length mostly depends on stress and emphasis, or may occur as a result of secondary lengthening (e.g. in the negative imperfective participle suffix *-(tʰ)onindä → -(tʰ)oondä*). There are a few cases of phonemic distinction between long and short vowels, e.g. /a/ vs. /ā/ in *laškʰɪ-* 'catch fire' vs. *laaškʰɪ-* 'fall off, come off, peel off' and /o/ vs. /oo/ in *y-okʰu-* 'I/IV/NHPL-sweep' vs. *y-ookʰu-* 'I/IV/NHPL-run'. In the case of 'catch fire' vs. 'fall of, come off, peel off', the long vowel of the latter has resulted from the merging of two vowels at the morpheme boundary: *laš-* is a combination of the preverbs *la-* and *š-*, whereas *laaš* consists of the preverbs *la-* and *aš-*. In the case of 'sweep' vs. 'run', however, the vowel length in the latter must be analysed as a phonetic property of a verb relic which consists only of this long vowel. The pronunciation as *y-okʰ* results form the combination of class marker I/IV/NHPL + verbal root *okʰ*, whereas *y-ookʰ* consists class marker I/IV/NHPL + verb relict *oo* + verbal root *kʰ*. The two verbal elements are separated in class II: *z-ō-s-kʰu-* CLII-verb relict *ō-* CLII-verbal root *kʰu*. The variation between /ä/ (short / unstressed) and /e/ (longer / stressed) can be allophonic and subject to ideolectic variation (*gäkʰi- ~ gekʰi-* 'peel') or phonemic (*hinä* DP.DIST.OBL vs. *hine* DP.DIST.OBL:GEN.AL).

Khinalug makes use of a schwa as an epenthetic vowel between morphemic consonants and as a reduced phonemic vowel. Depending on the sound environment, the speakers perceive schwa and /i/, or schwa and /ɪ/, or even schwa and /u/ or /ü/ as identical sounds (which they would represent by <i> or <ɪ> or <u> or <ü> in their Azerbaijani-based orthography).[1] Moreover, the distinction between an epenthetic and a phonemic vowel, and possible differences in the pronunciation related to this distinction, is still a matter of ongoing investigation. Therefore, following the speakers' perception, the transcription in this article uses the same symbols for epenthetic and phonemic vowels, representing their respective pronunciation. When schwa occurs at the morpheme boundary, it is assigned to one of the two morphemes in the glossing for practical reasons only, even though it may be a constituent of neither.

Table 2 shows the consonant inventory of Khinalug.

Place of articulation	Method of articulation		Plosive	Fricative	Affricate	Nasal	Vibrant / Approximant / Glide
Labial	unvoiced	aspirated	pʰ	f	—	—	—
		unaspirated	p	—	—	—	—
		ejective	p'	—	—	—	—
	voiced		b	v	—	m	—
Dental	unvoiced	aspirated	tʰ	s	cʰ	—	—
		unaspirated	t	—	c	—	—
		ejective	t'	—	c'	—	—
	voiced		d	z	—	—	—
Alveodental	unvoiced	aspirated	—	š	čʰ	—	—
		unaspirated	—	—	č	—	—
		ejective	—	—	č'	—	—
	voiced		—	ž	ǯ	n	r

[1] In Azerbaijani, /i/, /ɪ/, /u/ and /ü/ are distinct phonemes that can represent, according to the rules of vowel harmony, the 'close vowel' which appears as part of suffixes. Khinalug speakers with a high exposure to Azerbaijani often apply the rules progressive assimilation according to the Azerbaijani pattern (Rind-Pawlowski, forthcoming).

Lateral	voiced		—	—	—	—	l
Palatal / Velar (allophones)	unvoiced	aspirated	kʰ	x	[kx]	—	—
		unaspirated	k	—	—	—	—
		ejective	k’	—	—	—	—
	voiced		g	ɣ	—	—	y
Uvular	unvoiced	aspirated	qʰ	χ	[qχ]	—	—
		unaspirated	q	—	—	—	—
		ejective	q’	—	—	—	—
	voiced		[ɢ]	ʁ	—	—	—
Pharyngal	unvoiced		—	ħ	—	—	—
	voiced		—	ʕ	—	—	—
Laryngal	unvoiced		—	h	—	—	—
Glottal	unvoiced		ʔ	—	—	—	—

Table 2: Khinalug consonant inventory

The plosive consonants distinguish voiced and unvoiced ones. Unvoiced consonants distinguish aspirated, unaspirated, and ejective ones. The full range of plosives is produced at the labial, dental, and palatal place of articulation. The voiced uvular plosive /ɢ/ is not phonemically distinguished from the unaspirated uvular plosive /q/. This might be due to the influence of the Quba dialect of Azerbaijani, which has /q/ where Standard Azerbaijani has /ɢ/, so that a hypothetic former distinction in Khinalug may have been lost due to a re-interpretation as standard vs. dialectal (Rind-Pawlowski, 2023).[2] In the transcription, <q> is used consistently for all occurrences of /q/ and /ɢ/.

Among the affricates, only the alveodental variants have the full range, whereas the dental affricates lack a voiced variant. The palatal/velar affricate has only an aspirated variant, which occurs in very few lexemes: velar /kx/ in *kxa* ‘wool’ and palatal /kx/ in *kxir* ‘drop’.[3] The aspirated /qʰ/ is pronounced as an uvular fricative, and especially in auslaut position, the pronunciation equals that of the affricate /qχ/, e.g. in *ınqʰ* ~ *ınqχ* ‘fear; afraid’. It cannot be reconstructed whether Khinalug once had a phonemic distinction /qʰ/ vs. /qχ/. Therefore, in the transcription, <qˣ> will be used for both the sounds /qʰ/ and /qχ/.
The phomemes /k/, /kʰ/, /k’/, /kx/, /g/, /ɣ/ and /x/ vary between palatal and velar allophones. These are not represented in the transcription.

2. Verbal elements and glossing principles

2.1 The distinction between “root” and “stem”

The smallest unit that carries a basic verbal meaning will be called “root”. In Khinalug, a verbal root consists of a characteristic consonant. Since the number of meanings exceeds the number of consonants, several homonymous roots of different etymology and meaning can be identified.

The smallest unit that can take inflection morphology will be called “stem”. The relation between “root” and “stem” is subject to the rules of the respective verb type. Khinalug verbs

[2] Notably, the Kryz varieties (Kryz, Alik, Cek, Haput) spoken in the Quba district have the same allophonic variation between /q/ and /ɢ/ as in Khinalug, whereas in the Haput dialect spoken in the Ismayilli district, the distinction between /q/ and /ɢ/ is clearly phonemic.

[3] According to Nichols (2003: 230–231), these affricates are secondary; she identifies *kʰ-* as an allomorph of the petrified class marker *d-*.

can be assigned to one of the following verb types, according to the pattern of their imperfective participle formation:

Pattern of the imperfective participle	**Type**
Imperfective suffix *-z* + participle *-i*	*z*-type
Imperfective suffix *-l* + participle *-i*	*l*-type
Imperfective suffix *-r* + participle *-i*	*r*-type
Regular stem extension *-n* (irrespective of aspect) + imperfective participle *-dä*	*n-dä*-type
Suppletive imperfective stem + participle *-i*	Suppletive type
Other patterns	Irregular type

Table 3: Verb types

These verb types also have specific features beyond the imperfective participle, which will be discussed in section 4.

In many verb types, the root consonant + the participle suffix *-i* form the perfective participle. In this case, the root is identical with the perfective stem. All temporal forms as well as certain converbs and perfective verbal nouns based on the perfective stem are formed from the perfective participle. For example, the perfective participle + proximal demonstrative pronouns form a tense that can be tentatively named 'perfect', and the perfective participle + copulas / existential verboids form a tense that might be closer to a 'preterite', even though studies on the usage of these tenses have only been started (cf. Kibrik et al. 1972: 178–184).[4]

The root consonant + further morphologic processes (ablaut and/or suffix) form the imperfective stem. Section 4 will show that the *r*-type and *n-dä*-type verbs distinguish a short imperfective stem (in ablaut, or homonymous with the perfective stem) and an extended imperfective stem. The latter is the basis for their imperfective participle. The *z*-, *l*- and *r*-type verbs form their imperfective participle by means of the aspectually neutral participle suffix *-i*. The *n-dä* type verbs use *-dä* as a peculiar imperfective participle suffix. The imperfective participle is the basis for many temporal forms and the imperfective verbal nouns. For example, the imperfective participle + proximal demonstrative pronouns form the future, and the imperfective participle + copulas / existential verboids form the present tense (cf. Kibrik et al 1972: 168–177). The short imperfective stem (where applicable) is the basis for the Habitual, the Hortative Inclusive, the Jussive, the negative imperfective participle, and two converbs of simultaneity, which take specific forms according to the respective verb type (cf. section 4).

2.2 Verb type specific stems

According to the rules of the respective verb type, roots can form stems of different shapes: The perfective stems can either maintain their form as a single consonant, or add extensions in vowels or *-n*.

In the *z*- and *l*-type, all perfective stems consist only of one characteristic consonant:

[4] Kibrik et al. (1972: 178–179) differentiate a Perfect 1 (perfective base + copula) and a Perfect 2 (perfective base + proximal demonstrative) as well as a Pluperfect 1 (perfective base + copula + past marker *-šä*) and a Pluperfect 2 (perfective base + proximal demonstrative + past marker *-šä*). The terminology shows that the functional difference between the two patterns is not clear.

q'- 'become dry; let dry'
k^{h}- 'hear'
c'- 'become full, fill'

The perfective stems of the suppletive type consist only of one characteristic consonant as well:

ʁ- 'move'
q'- 'be, become'
χ- 'go'

The *r*-type verbs distinguish several subgroups. In one subgroup, the perfective stems consist only of a characteristic consonant:

v- 'pull, draw'
k^{h}- 'fall'
p^{h}- 'sew'

In another subgroup of the *r*-type, the verbs distinguish short imperfective stems {consonant + /i/} from perfective stems {consonant + /u/}:

PFV: *k*^{h}*u*, IPFV: *k*^{h}*i* 'combine, produce, make, do'
PFV: *xu*, IPFV: *xi* 'rub, smear'
PFV: *χu*, IPFV: *χi* 'approach, reach'

In the *n-dä*-type, the perfective stems (which are homonymous with the short imperfective stems) are formed by the root consonant + an extension in schwa + *-n*:

k^{h}*in* 'put together, produce, make'
χin 'arrive, reach'
q^{x}*in* 'intertwine, adhere, stick'

Only two stems, both of which have an extension in *-n*, distinguish aspect by high vs. low vowel ablaut:

PFV: *t'ın*, IPFV: *t'än* 'cry'
PFV: *q'in*, IPFV: *q'an* 'eat'

In the *n-dä*-type and the *r*-type, some perfective stems have a VC or VC-*n* structure, where V is a low vowel:

aχ 'leave; let, allow'
äχ 'shear, shave'
aqqın 'keep; stop'[5]

After labialised consonants, epenthetic vowels are realised as /u/, e.g.

ʁun 'settle; find room' ← *ʁ*^{w}*-n*
χun 'stand still' ← *χ*^{w}*-n*

2.3 Glossing

Khinalug verbs do not have an infinitive. The morphologically most simple meaningful form is the perfective participle. It usually consists of the root + participle suffix *-i*. The imperfective participle has further features (ablaut and/or suffixes, cf. section 4) which mark it explicitly as imperfective. Verbal nouns (as well as many temporal, converbial and other forms) are derived from the participles. The imperfective participle helps to disambiguate homonymous roots, e.g.

[5] In the pronunciation of the majority of speakers, non-aspirated plosives are lengthened in intervocalic position. The basic root consonant of *aqqın* is *q-*.

PFV: *kʰ-i*, IPFV: *kʰɪ-r-i* ‘fall’
PFV: *kʰ-i*, IPFV: *kʰɪ-l-i* ‘hear’

Therefore, as a convention, verbs are cited by both their participle forms.[6]

When verbs are mentioned without a context, class marker slots are indicated by angle brackets <> (cf. section 3). Petrified class markers are given inside the angle brackets. In example sentences, where the context requires specific class marking, the respective morpheme is given (if applicable), but the slot is not marked as such.

Many Khinalug verbs have deictic preverbs. The meaning of a verb results from the combination of preverb(s) and the root so that the elements cannot be separated in the translation of the complex verb stems. Khinalug distinguishes a petrified and a productive set of preverbs. In this article, only the preverbs of the productive set will be mirrored in the glossing. These have variants with /a/ and /i/ as displayed in Table 4:

	Preverb variants				
	Open vowel		Close vowel		
Direction	before /χ/ and /š/	otherwise	before /χ/ and /š/	otherwise	GLOSS
towards a point of orientation from any level	*kʰa*[7]		*kʰi*		CIS_
towards a point of orientation from above downwards	*ala*	*al*	*ili*	*il*	CIS.DOWN_
towards a point of orientation from below upwards	*qala*	*qal*	*qili*	*qil*	CIS.UP_
towards a point of orientation from the same level	*tʰala*	*tʰal*	*tʰili*	*tʰil*	CIS.LEVEL_
away from a point of orientation from above downwards	*a*		*i*		TRANS.DOWN_
away from a point of orientation from below upwards	*za*		*zi*		TRANS.UP_
away from a point of orientation on the same level	*la*		*li*		TRANS.LEVEL_

Table 4: Productive preverbs

[6] The perfective participle will be given as {root+ *-i*}. However, we do not know if the participle suffix *-i* attaches to a root consisting of, or ending in, a consonant, or if it merges with a root-final vowel /i/, or if it replaces an underlying root-final vowel other than /i/. A homonymous morpheme *-i* also occurs in the nominal case system, e.g. in forming the Ergative or Genitive. There, *-i* replaces the final vowel of the noun it attaches to (cf. Kibrik et al. 1972: 35). The verb forms based on the perfective stem are either based on the participle (all temporal forms, perfective verbal nouns, certain converbs) or they are formed by means of suffixes which have their own anlaut in *i-*, e.g. the negative perfective participle suffix *-indä*. Therefore, it is impossilbe to determine whether the root is formed by a bare consonant or whether the consonant is accompanied by a vowel in its underlying form.

[7] According to Kibrik (1972: 226), this suffix is *kʰ(a)(l)*, and as evidence for forms with *-l*, he mentions *kʰalʁi* ‘came’ and *čʰkʰalʁi* ‘brought’. However, both the corpus and further elicitations have revealed that such verbs do not exist. Most probably they have resulted from a confusion with the preverb *qal-*.

In preverb clusters, these productive preverbs take the initial position. Only one of them can occur, whereas the preverbs of the petrified set can be grouped together, and their semantics depends, among other factors, on their order within these groups. For example, the verb

čäši, čäširi PV:down-VS:insert ‘put (down)’

has one preverb of the petrified set, *čä-* ‘down’. The resulting combination can additionally take one preverb from the productive set. The stress shifts to the added preverb (as the new first syllable), so that *čä-* is reduced to {/č/ + schwa}, and most speakers assimilate /č/ → /čʰ/ before /š/:

lačuši, lačuširi ~ lačʰuši, lačʰuširi PV:TRANS.LEVEL-PV:down-VS:insert ‘put (away from the speaker, on the same level)’

This form can add another preverb from the petrified set, *χ-* (AD),[8] which is placed between *čä* and the verb stem. Here, too, *čä-* is reduced to {/č/ + schwa}, and most speakers assimilate /č/ → /čʰ/ before /χ/:

lačuχši, lačuχširi ~ lačʰuχši, lačʰuχširi PV:TRANS.LEVEL-PV:down-PV:AD ‘put against, prop up, support’

The preverb combination *čä-χ-* without another preverb from the productive set has been lexicalised as ‘begin’. Here, the stress is on *čä-* so that the non-aspirated affricate and the low vowel are maintained. However, speakers vary between [ä] and [a]:

čäχši, čäχširi ~ čaχši, čaχširi PV:down-PV:AD-VS:insert ‘begin’

Since the elements that may occur as preverbs, as well as their functional scope and etymology, are far too complex to be discussed within this article, preverb clusters will not be analysed in the glossing.

2.4 Root homonymity

Since the basic verbal roots in Khinalug are represented only by a consonant, roots of different meanings have become homonymous, for example:[9]

kʰ- ‘fall’, e.g. in the verb *al<>kʰ-i, al<>kʰɪ-r-i* ‘CIS.DOWN_fall’
kʰ- ‘hear’, not combining with preverbs[10] in the verb *kʰ-i, kʰɪ-l-i* ‘hear’

k’- ‘die, kill’, not combining with preverbs, in the verb *<>k’i, k’ɪ-l-i* ‘die, kill’
k’- ‘gather’, e.g. in the verb *laččɪ<>k’-i, laččɪ<>k’ɪ-r-i* ‘TRANS.LEVEL_gather, heap up’

k’u, k’i ‘give’, e.g. in the verb *tʰä<>k’u-i, tä<>k’i-r-i* ‘TRANS_give’

[8] The preverb *χ-* is related to the so-called adessive/adelative case *-χ* in the nominal system. Both case suffix and preverb cover AD and APUD functions, i.e. they express the position at or the movement into contact with the surface of another item, as well as the position at or the movement to a place near another item.

[9] Kibrik et al. (1972: 215–225) make first efforts to assign light verbs to basic meanings. However, they only recognise *q’i* ‘be’, *ʁi* ‘move (oneself)’, and *kʰui* in its light verb function, which can be summarised as ‘transitivisation’ and ‘cause movement’. Beyond these, they do not identify any root-specific meanings.

[10] In Khinalug, it is impossible to form sentences like “He heard the man.” The verb *kʰi, kʰli* always requires the overt expression of “sound” or “voice” like e.g. “He heard the voice of the man, the sound of his breath, the sound of his steps” etc., or a complement clause with the quotation of a speech act. These are exclusively CLIV objects, so that the class marker is always Ø (cf. section 3).

k'u, k'i 'hit, fling', e.g. in the verb *zä<>k'u-i, zä<>k'i-r-i* 'TRANS.DOWN_fling, slam'
k'u, k'i 'bind, detain', e.g. in the verb *či<>k'u-i, či<>k'i-r-i* 'bind, tie'

q^{x}in 'tear', e.g. in the verb *la-tır<>q^{x}in-i, la-tır<>q^{x}in-dä* 'TRANS.LEVEL_tear (sth.) apart'
q^{x}in- 'intertwine, adhere, stick', e.g. in the verb *äχil<>q^{x}in-i, äχil<>q^{x}in-dä* 'TRANS.UP_get caught, get stuck'

q'- 'dry', not combining with preverbs, in the verb *<>q'-i, q'i-z-i* 'dry'
q'- 'be, become', not combining with preverbs, in the verb *<>q'-i, ku-i* 'be, become'

The semantics of these verbs can be disambiguated by the assignment to different verb types (see section 4), or by their specific combinability with preverbs.

2.5 Regressive assimilation and vowel relics

Labialised root consonants trigger the assimilation of a preceding low vowel as part of the verb type specific root, as in *ak^{hw} → ok^{hw}*, and of vowels in preceding preverbs, as in *ta → to* before *χ^{w}un*:

<>ok^{hw} 'sweep'
to<>χ^{w}un 'stand, wait'

Some roots go back to a VC structure, where V is a high vowel. This vowel no longer occurs on the surface. For example, in

xu	*k'i-*
water	give(IPFV)

'give water (to plants)'

the imperfective *r*-type stem *k'i* 'give' occurs with consonantal anlaut. However, its underlying root ***ik'*[11] still effects preverbs that attach to it, triggering regressive assimilation such as *la- > lä-* in the following examples. The assimilation remains stable independently from subsequent overt aspect related stem vowels (i.e. perfective /u/ or imperfective /i/) or class markers (cf. section 3):

lä<>k'i-r-i
TRANS.LEVEL_give(IPFV)-IPFV-PTCP
'give to somebody else-(IPFV)-IPTV-PTCP'

lä<>k'u-i
TRANS.LEVEL_give(PFV)-PTCP
'give to somebody else(PFV)-PTCP'

lä<zi>k'u-i
TRANS.LEVEL_give(PFV)<II>-PTCP
'give (a girl / a woman) to somebody else(PFV)-PTCP'

[11] Cf. Chechen and Ingush *=al-*, Batsbi *=aɬ-* 'to give'; Chechen ablaut stem *t-ēl-* 'to pay', Bacb. *t=eɬ-* 'to give'; Avar *ƛ:e-*, Chadakolob *ƛe-* 'to give', Tindi *=iƛ:-ij-* 'to distribute, give out', Tsezic *n=eƛ-*, *t=eƛ-* 'to give', Hinukh *n=eƛ-*, *t=oƛ-*, Khvarshi *t=iƛ-*, Inkokhvari *t=iƛ-*, *iƛ-*, *c=iƛ-*, Bezhta *n=iƛ-*, Hunzib *n=iƛ-* 'to give', Tsakhur *hi=le-*, Archi *ƛo-* 'to give' (Nikolayev & Starostin 1994: 640–641).

These underlying vowel relics are a matter of ongoing research, and the preliminary results cannot be discussed within this article.

3. Class marking

Khinalug nouns are assigned to four classes:

CLI male
CLII female
CLIII animals and some concrete items
CLIV some concrete items and abstract concepts

Except for some nouns and adjectives with petrified class markers (cf. Nichols 2003: 212 ff), which cannot be addressed within this article, the class of a noun in the absolutive (subject of an intransitive verb or object of a transitive verb) is expressed in the verb by which it is governed. The class markers are prefixed directly to the verbal root. In complex stems with preverb(s), they take the position between preverb(s) and verb stem. They are subject to regressive assimilation as shown by the following table:[12]

Class	Before vowel	Before voiced consonant or ejective	Before unvoiced consonant	Before *χ*	Merging with root *h*	Formation with root *š*	Root variation *š* / *f*
I	*y-*	*Ø-*	*Ø-*	*Ø-*	*Ø-h*	*Ø-š*	*Ø-š*
II	*z-*	*z(ı)-*	*s-*	*s-/c^h-*[13]	*s (< s-h)*	*s (< s-š)*	*s-f*
III	*v-*	*b(ı)-*	*p^h-*	*p^h-*	*f (< p^h-h)*	*p^h-š*	*f*
IV	*y-*	*Ø-*	*Ø*	*Ø*	*Ø-h*	*Ø-š*	*Ø-š*
HPL	*v-*	*b(ı)-*	*p^h-*	*p^h-*	*f (< p^h-h)*	*p^h-š*	*f*
NHPL	*y-*	*Ø-*	*Ø*	*Ø*	*Ø-h*	*Ø-š*	*Ø-š*

Table 5: Class markers

Example for class marking before a vowel:

CLI/IV/NHPL: *y-aχ-i*, CLII: *z-aχı-i*, CLIII/HPL: *v-aχ-i*
'CL-allow, permit, let(PFV)-PTCP'

Example for class marking before a voiced consonant:

CLI/IV/NHPL: *k^{h}a-ʁ-i*, CLII: *k^{h}a-zı-ʁ-i*, CLIII/HPL: *k^{h}a-bı-ʁ-i*
'come towards the speaker<CL>(PFV)-PTCP'

Example for class marking before unvoiced consonant:

CLI/IV/NHPL: *č'i-q^{x}u-i*, CLII: *č'i-s-q^{x}u-i*, CLIII/HPL: *č'i-p^h-q'u-i*
'take away by force<CL>(PFV)-PTCP'

[12] For the variation *v/b/p^h* and *z/s/c^h* see also Kibrik et al. 1972: 126.

[13] When the CLII marker becomes part of the same syllable as the root, it is pronounced as *c^h-* by most speakers. When it becomes part of a syllable that precedes the root, it is pronounced as *s-* by all speakers.

Example for class marking CLII *s-* before /χ/:

> CLI/IVNHPL: *to-χun-i*, CLII: *to-s-χun-i*, CLIII/HPL: *to-pʰ-χun-i*
> 'stand, wait<CL>(PFV)-PTCP'

Example for class marking CLII *cʰ-* before /χ/:

> CLI/IV/NHPL: χ-i, CLII: cʰ-χ-i, CLIII/HPL: pʰ-χ-i
> '<CL>-go(PFV)-PTCP

Example for class marking with a root consonant *h*:

> CLI/IVNHPL: *čʰχı hi-yä*, CLII: *čʰχı si-yä*, CLIII/HPL: *čʰχı fi-yä*[14]
> 'big, adult be, become.PFV(SUPP)<CL>-PTCP-COORD'
> → 'grow up.PFV(SUPP)<CL>-PTCP-COORD'

Example for class marking with a root consonant *š*:

> CLI/IV/NHPL: *le-š-i*, CLII: *le-s-i*, CLIII/HPL: *le-pʰ-š-i*
> 'TRANS.LEVEL_look(PFV)-PTCP'

Example for class marking with roots with *š* / *f* variation:

> CLI/IV/NHPL: *läk'il-š-i*, CLII: *läk'il-s-f-i*, CLIII/HPL: *läk'il-f-i*
> 'TRANS.LEVEL_put under; put into a hollow space (e.g. firewood, or a person, into an oven)'(PFV)-PTCP'

The CLII form *-s-f-* hints at *f-* being the original form, because a class marker will only combine with the bare root itself and not with a root that is already marked for a different class. The etymology of the peculiar CLI/IV/NHPL form *š-* is not clear.

Another verb with regular *š* / *f* variation is

> CLI/IV/NHPL: *latʰıχ-š-i*, CLII: *latʰıχ-s-f-i*, CLIII/HPL: *latʰıχ-f-i*
> 'TRANS.LEVEL_ tear off from a long, pointed item (e.g. ring from a finger, meat from a skewer, person from a sword)'(PFV)-PTCP'

[14] The suppletive stem *ha* occurs only in specific forms of the paradigm of *q'i, kui* 'be, become', *ʁi, kui* 'move, go', and *χi, kui* 'go', such as in combination with the coordinative clitic. The participle suffix *-i* replaces the vowel of *ha*: *ha-i* > *hi*. The verb stem *ha* and its various occurrences have not been described in the grammars so far. Only its peculiar Imperative in *-r* has been discussed. Kibrik et al. (1972: 96/127) claim that *h-* in *ha-r* is a class prefix for I/IV/NHPL. Kerimov (1985: 36) notes the anlaut of this verb stem as /ħ/, cyrillic <xI>, and identifies it as part of the stem. He believes that the anlaut *ħ-* in Khinalug *ħa-r* is etymologically related to Lezgian *x-* in *xun* 'to be'; for Lezgian, he describes the phonologic process *x-v-in* > *fin* 'to go', *x-v-iri* > *firi* 'fresh' and suggests a similar assimilation process of /ħ/ with the CLIII/HPL marker for Khinalug. However, as the corpus of audio/video recordings shows, the pronunciation of the anlaut is /h/, not /ħ/. Still, Kerimov correctly identifies the form *fa-r* as the result of a phonologic process implying the anlaut.

It turns out that these verbs have two homonymous roots with different etymologies and opposite meanings: ‘insert, intertwine’ on the one hand and ‘detach’ on the other.

Notably, verbs with these roots are in a process of petrification with regard to their class specific forms. Many verbs have a petrified stem in either *š-* or *f-*. There are two verbs which show a limited variation in class marking, with a clear class assignment only for human controllers. These help to reconstruct the petrification process.

NH/NHPL:	*čäši, čäširi* PV:down-CLI/IV/NHPL:VS:insert
synomously:	*čäfi, čäfiri* PV:down-CLIII/HPL.VS:insert
CLI	*čäši, čäširi* PV:down- CLI/IV/NHPL:VS:insert
HPL:	*čäfi, čäfiri* PV:down-VS:insert
CLII:	*čäsfi, čäsfiri* PV:down-CLII-VS:insert
	‘put down’

NH/NHPL:	*gäši, gäširi* PV:up- CLI/IV/NHPL:VS:insert
synomously:	*gäfi, gäfiri* PV:up-VS:insert
CLI	*gäši, gäširi* PV:up- CLI/IV/NHPL:VS:insert
HPL:	*gäfi, gäfiri* PV:up-VS:insert
CLII:	*gäsfi, gäsfiri* PV:up-CLII-VS:insert
	‘put onto / help to mount a horse’ ← ‘put onto a high place’

NH/NHPL:	*gäši, gäširi* PV:up- CLI/IV/NHPL:VS:detach
synomously:	*gäfi, gäfiri* PV:up-VS:detach
	‘fall (rain, snow etc.)’ ← ‘detach from a high place’

Most verbs of the semantics ‘insert, intertwine’ and ‘detach’ cannot have human controllers for semantic reasons. They are petrified with either *š-* or *f-*, i.e. one of the synonymous forms has been abolished. Petrifications with *š-* are:

läχ-š- ‘TRANS.LEVEL_insert, attach’ (e.g. meat on a skewer, ring on finger; denture in mouth)’
lii-š- ‘TRANS.LEVEL_insert, attach (e.g. meat on a stick for drying, sock on a sock last)
ni-š- ‘put on, wear’
gäčʰ-š- ‘build, erect’
čäχ-š- (~ *čaχ-š-*) ‘begin’

Petrifications with *f-* are:

f- ‘braid; knot (the pile threads of a carpet)’
kʰaš-f- ‘tidy, put things to their place’
tıranš-f- ‘soak, be inserted into liquidity (e.g. bread in soup)’
k’i-f- ‘suck’ ← ‘insert teat into mouth’
šäl-f- ‘sew warp threads (with a needle) for darning’
laaš-f- ‘detach (sth.), tear out (e.g. hair from head)’

Petrification of specific class-related forms is one reason why certain Khinalug verbs have lost their expression of agreement with the respective noun class. Some verbs have reduced their class marking to feminine (CLII) only, while all other classes remain unmarked. Some stems have different marking capacities depending on the type of preverbal elements. The more or

less reduced or abolished marking capacity will, however, not be indicated in the respective verb forms, since the topic is too complex to be discussed within this article. Moreover, it should be noted that the *z*- and *l*-type verbs can take class markers only in their perfective stem, whereas the *r*- and *n-dä*-type verbs, if at all, take them in both the perfective and the imperfective stem (cf. section 4).

4. Verb type specific imperfective formation

As mentioned in section 2, Khinalug verbs can be assigned to distinct verb types, according to their imperfective formation. These types also have specific features beyond the imperfective form itself: they differ with regard to class marking, and with regard to those imperfective forms that are not derived from the positive imperfective participle. This is particularly true of

- the Habitual,
- the Hortative Inclusive,
- the Jussive,
- the negative imperfective participle (including the forms derived from it), and
- two converbs of simultaneity.

4.1 *z*-type

Khinalug has four verbs that form their imperfective by means of a suffix *-z*. Except for *c'i, c'i-z-i*, which occurs in the corpus only in an intransitive meaning, the usage examples prove that the verbs are labile in the sense that the respective event can take place with and without a permitting or causing agent.

<>k-i, ki-z-i 'burn, be on fire; let sth. burn, make burn'
<>q-i, qi-z-i 'become cold; let sth. cool down; make cool down'
<>q'i, q'i-z-i 'become dry; let sth. dry; make dry; bake (bread)'
c'i, c'i-z-i 'tremble, shiver'

The *z*-type verbs do not combine with preverbs. They take class markers only in the perfective stem, whereas the imperfective stem remains unmarked. Only *c'i, c'i-z-i* 'tremble, shiver' does not take any class marker even in the perfective stem.

The *z*-type verbs form the Habitual Present from their imperfective stem in *-ar*:

c'i-z-ar-mä
shiver-IPFV-HABIT-DECL
'usually shiver(s)'

They form the Hortative Inclusive from their imperfective stem in *-oa*:

ki-z-oa
burn-IPFV-HORT.INCL
'let's burn'

They form the Jussive from their imperfective stem in *-oa*, preceded by the non-inflected verb stem *<>aχ* 'let':[15]

[15] In these forms, the morpheme *oa* can be interpreted as Hortative Inclusive or Jussive, depending on the presence or absence of *<>aχ*. Forms of *k-oa* (Assumptive at inflected stems, Desiderative 1 with modal stems), *at^{h}-k-oa* (Necessitative) and *koet^{h}koa* (< *ku-i-at^{h}-k-oa*) (Desiderative 2) show the use of *oa* in further modal forms. The copulas / existential verboids *q-oa* 'is below', *t^{h}-oa* 'is far / on the same level' and *oa* 'is above' show the indicative

kʰul	*y-aχ*	*c'i-z-oa*
hand	CLI/IV/NHPL-let	tremble, shiver-IPFV-JUSS

'may the hand tremble'

They form the negative imperfective participle from their imperfective stem in *-onindä* (due to Azerbaijani influenced vowel harmony often pronounced as *-onundä,* or contracted as *-oondä*):[16]

qi-z-onindä ~ qi-z-oondä
cool-IPFV-NEG.PTCP.IPFV
'not cooling'

They form the converbs of simultaneity from their imperfective stem in *-orını* and *-oršını* (due to Azerbaijani influenced vowel harmony often pronounced as *-oruni ~ -orunu* and *-oršuni ~ -oršunu*):[17]

use of *oa*. Notably, Kibrik et al. (1972: 188) think that *koa* forms both expressions of possibility and necessitiy and that these can only be distinguished by the Azerbaijani loans *bälkʰä* 'maybe' and *gäräkʰ* 'necessary'. They do not recognise *atʰ-k-oa* as a distinct suffix but misinterpret *atʰ* as the copula in its function as a tense formant. However, as the corpus shows, *atʰ-k-oa* can express necessity without any additional Azerbaijani element. See also footnote 27.

[16] Kibrik et al. (1972: 113) believe that the negative perfective (resultative, in their terminology) participle is formed by *-ndä* suffixed to the non-negated participle *-i*, and the negative imperfective (non-resultative) participle is formed by *-ondä* suffixed to the auxiliary non-resultative stem (NEREZ'). Instead, the negative perfective participle is formed by *in-dä*, i.e. the *n*-stem variant of the negative copula *i* with the imperfective participle suffix *-dä*, which is the characteristic IPFV.PTCP formant of the *n-dä* type verbs. This morpheme cluster attaches directly to the perfective stem. The negative imperfective participle is formed by *-(t)ʰon-in-dä*, i.e. *in-dä* preceded by the *n*-stem variant of the copula *oa* or *tʰ-oa* (depending on the respective verb type). For the transition of verbal roots between verb types, see section 6. From a typological point of view, perfectivity is generally less compatible with negation than imperfectivity. In some languages, negation can be formed exclusively in the imperfective aspect (cf. Matthews 1990: 84; Schmid 1980: 89). Therefore, the usage of an imperfective participle for the negation of a perfective form is not as disturbing as it might seem.

[17] The speakers consider these converbs to be synomymous, and the corpus does not reveal any differences in their usage either. Kibrik et al. (1972: 117) mentions a converb {(or)šin} 'когда' ('when'); 'после того как' ('after') and describe its usage (1972: 211–212). In section 3.4.4.7.1 referring to {(or)šin} with an imperfective base ("нерезультативная основа"), they describe both *-orin* and *-oršin*. In section 3.4.4.7.2 referring to {šin} with a perfective base ("результативная основа"), they actually desribe a different converb in *-sini* (probably assuming a phonetic process /š/ → /s/ at the morpheme anlaut). However, the situation is more complex than this. Khinalug has the following suffixes in the sense of 'while':

- short IPFV-stem + *-(tʰ)oruni* (see the examples in this article)
- short IPFV-stem + *-(tʰ)oršuni* (see the examples in this article)
- IPFV participle + *-sini* (only attested with the negative imperfective participle): *kʰa-k-onundä-sini* 'while not coming', *mux-onundä-sini* 'while not knowing') (often with a causal connotation)
- PFV-stem + *-šini* (e.g. *za-bı-ʁ-šini* 'while seeing', *ka-bı-ʁ-šini* 'while coming')
- PFV-stem + *-r-šini* (e.g. *za-ʁı-r-šini* 'while seeing' *kaʁ-ir-šini* 'while coming')
- PFV-stem + *-r-sini* (e.g. *q'-ir-sini* 'while being', *k-ir-sini* 'while hearing')

Moreover, Khinalug has one suffix in the sense 'when' which allows the interpretation of temporal overlap or succession:

- PFV participle + *-sini.*

q'i-z-orɪni ~ q'i-z-oruni ~ q'i-z-orunu
dry-IPFV-CVB:while.1
'while drying'
q'i-z-oršɪni ~ q'i-z-oršuni ~ q'i-z-oršunu
dry-IPFV-CVB:while.2
'while drying'

4.2 *l*-type

Khinalug has ten verbs that form their imperfective stem by means of a suffix *-l*.

c'-i, c'i-l-i 'become full; fill; sow, plant'
k^h-i, k^h-l-i 'hear'
f-i, fi-l-i 'braid, knot (the pile threads of a carpet)'
<>k'-i, k'-l-i 'die; kill'
q^x-i, q^{x}i-l-i 'weave, knit'
q^x-i, q^{x}i-l-i 'make a performance on stage, play a musical instrument'
q'u-i, q'u-l-i 'break (by itself), break (sth.)'
<>x-i, xɪ-l-i 'simmer; boil; cook'
t'ü-i, t'ü-l-i 'be born; give birth'
t'ü-i, t'ü-l-i 'get cut'

The *l*-type verbs do not combine with preverbs. If they take class markers, these attach only to the perfective stem, whereas the imperfective stem remains unmarked. The fact that *fi, fili* 'braid, knot (the pile threads of a carpet)' has *f-* also in the imperfective stem supports the hypothesis that *f-* is the original neutral root, whereas *š-* is a peculiar CLI/IV/NHPL form (cf. section 3).

Wherever the semantics allows, *l*-type verbs are labile. Only *t'ü-i, t'ü-l-i* 'get cut' is limited to intransitives with a body part as their subject and a cutting tool in the instrumental case:

i	*ɪst^{h}al*	*šüi*	*t'ü-i-šä-mä*
i	*ɪst^{h}al*	*šöä-i*	*t'ü-i-šä-mä*
I:GEN.INAL	finger	glass-INST	get.cut(PFV)-PTCP-PST-DECL

'My finger got cut by glass.'

The *l*-type verbs form the Habitual Present from their imperfective stem in *-ar*:

q^{x}i-l-ar-mä
weave, knit-IPFV-HABIT-DECL
'usually weave(s), knit(s)'

They form the Hortative Inclusive from their imperfective stem in *-oa*:

k'ɪ-l-oa
die, kill-IPFV-HORT.INCL
'let's die / let's kill'

They form the Jussive from their imperfective stem in *-oa*, preceded by the non-inflected verb stem *<>aχ* 'let':

luʁka	*y-aχ*	*x-l-oa*
meat	CLI/IV/NHPL-let	simmer-IPFV-JUSS

'may the meat simmer'

They form the negative imperfective participle from their imperfective stem in *-onindä ~ -onundä, ~ -oondä*:

c'i-l-onindä ~ c'i-l-oondä
become full / fill-IPFV-NEG.PTCP.IPFV
'not becoming full, not filling'

They form the converbs of simultaneity from their imperfective stem in *-orɪni ~ -oruni ~ -orunu* and *-oršɪni ~ -oršuni ~ -oršunu*:

x-l-orɪni ~ x-l-oruni ~ x-l-orunu
simmer, cook-IPFV-CVB:while.1
'while simmering / cooking'

fi-l-oršɪni ~ fi-l-oršuni ~ fi-l-oršunu
braid, knot-IPFV-CVB:while.2
'while braiding, knotting'

4.3 *r*-type

The most frequent type derives the imperfective stem from the perfective stem by suffixation of *-r*. Not all the *r*-type verbs combine with class markers. Those that do, mark both the perfective and the imperfective stem with them. Regarding preverbs, two subtypes can be distinguished: roots with an anlaut in a consonant or an underlying high vowel usually combine with at least one preverb (except *kʰui, kʰiri* in the meanings 'do' and 'arrange a wedding, get engaged'). Roots with an anlaut in a low vowel do not combine with preverbs.

The *r*-type subdivides into two groups with regard to aspectual roots: One group distinguishes an imperfective root {(vowel +) consonant + /i/} from a perfective root {(vowel +) consonant + /u/} (cf. section 2), whereas the second group forms its root only by {(vowel +) consonant}, accompanied by a schwa in certain phonological environments.

4.3.1 The ablauting subgroup of the *r*-type verbs

All stems of the ablauting subgroup have class marker slots. The root consonants range from palatal to uvular plosives and fricatives. The identification of homonyms and their etymologies is a matter of ongoing investigations. Within the frame of this article, etymologies and possible cognates in other Nakh-Dagestanian languages cannot be discussed. As preliminary results, the following stems can be distinguished:

<>kʰu-i, <>kʰi-r-i 'unite, arrange marriage, get engaged (with a woman); produce, make, do'[18]
<>k'u, <>k'i 'give'
<>k'u, <>k'i 'hit, fling'
<>k'u, <>k'i 'bind, detain'
<>qˣui, <>qˣiri 'take'
<>qˣui, <>qˣiri 'tear off, tear apart'
<>qˣui, <>qˣiri 'stick, get stuck'
<>q'ui, <>q'iri 'make become, cause'
<>q'ui, <>q'iri 'bark'
<>ʁui, <>ʁiri 'break'
<>ʁui, <>ʁiri 'look at'

[18] We assume that the different meanings go back to 'put together, put side by side'. This basic meaning has developed in two directions: → 'unite' → 'arrange marriage, get enganged' on the one hand, and 'produce' → 'make' → 'do' on the other (cf. section 6).

<>ʁui, <>ʁiri ‘make go, send’
<>χui, <>χiri ‘approach, reach’
<>xui, <>xiri ‘rub, smear’
Some verbs of the ablauting type begin with a vowel:

<>äqˣui, <>äqˣiri ‘weave, to knit; knead (dough)’
<>äqˣui, <>äqˣiri ‘play (an instrument), perform (sth. on stage)’
<>exui, <>exiri ‘make boil, cook’
<j>äq’ui, <j>äq’iri ‘flatulate’
<>äq’ui, <>äq’iri ‘bake’

As mentioned in section 2.2, the *r*-type verbs distinguish a short and an extended imperfective stem. The short imperfective stem consists only of the root, without the characteristic suffix *-r*.[19] The ablauting subgroup forms the short imperfective stem with /i/. This stem is used for the Habitual, the Hortative Inclusive, the negative imperfective participle, and the two converbs of simultaneity. These formants have in common that they have a vocalic anlaut when combining with *z*- or *l*-type verbs, but display an additional *-tʰ* before the vowel when combining with *r*-type verbs.

The Habitual Present is formed from the short imperfective stem in *-tʰar*:

kʰi-tʰar-mä
do(IPFV)-HABIT-DECL
‘usually do(es)’

The Hortative Inclusive is formed from the short imperfective stem in *-tʰoa*:

läk’i-tʰoa
TRANS.LEVEL_give(IPFV)-HORT.INCL
‘let’s give (to sb. else)’

The Jussive is formed from the short imperfective stem in *-tʰoa*, preceded by the non-inflected verb stem *<>aχ* ‘let’:

ve	*quluɯnc-i*	*vi*	*kalla*
you.GEN.AL	sword-ERG	you.GEN.INAL	head
y-aχ	*täq’q’i-tʰoa*		
CLI/VI/NHPL-let	cut(IPFV)-JUSS		

‘May your sword cut your head!’

The negative imperfective participle is formed from the short imperfective stem in *-tʰonindä ~ -tʰonundä, ~ -tʰoondä*:

tʰenčʰqˣi-tʰonindä ~ tʰenčʰqˣi-tʰonundä ~ tʰenčʰqˣi-tʰoondä
CIS.LEVEL_take(IPFV)-NEG.PTCP.IPFV
‘not taking, not being taken’

The converbs of simultaneity are formed from the short imperfective stem in *-tʰorɪni ~ -tʰoruni ~ -tʰorunu* and *-tʰoršɪni ~ -tʰoršuni ~ -tʰoršunu*:

[19] Kibrik et al. (1972: 89–95) distinguish two types of “non-resultative” (“нерезультативное”): NEREZ as the basis for tenses formed with the copulas and the proximal demonstratives, the verbal nouns and some converbial formations with *zaʁi* ‘because’ and *yä* ‘and’, and NEREZ' as the basis for the Habitual, the Jussive, and the negative imperfective participle. However, the authors admit that the specific value of the “auxiliary root” is not clear.

ši-pʰ-q'i-tʰorɪni ~ ši-pʰ-q'i-tʰoruni ~ ši-pʰ-q'i-tʰorunu
bark<CLIII/HPL>-CVB:while.1
'while (the dog is) barking'

y-exi-tʰoršɪni ~ y-exi-tʰoršuni ~ y-exi-tʰoršunu
CLI/IV/NHPL-cook-CVB:while.2
'while cooking'

4.3.2 The {consonant+schwa} subgroup of the *r*-type verbs

Only part of the stems of the {consonant+schwa} subgroup have class marker slots. The root consonants are labial to uvular plosives, fricatives, and affricates. Here, too, the identification of homonyms and their different etymologies is a matter of ongoing investigations, which cannot be discussed here. So far, the following verb stems could be identified:

pʰi, pʰiri 'sew'
<>pʰi, <>pʰiri 'leave; make go away, take away'
<>vi, <>vɪri 'draw, pull'
t'i, t'iri 'spread horizontally, lie'
či, čiri 'stick, adhere'
<>ši, <>širi 'look'
ši, širi / <>fi, <>firi 'insert'
ši, širi / <>fi, <>firi 'detach'
ži, žiri 'flow; pour; make flow'
čʰi, čʰɪri 'disperse'
čʰi, čʰɪri 'scorch'
cʰi, cʰɪri 'wash' (clothes)
<>kʰi, <>kʰɪri 'fall'
<>k'-i, <>k'ɪri 'put down'
<>k'-i, <>k'ɪri 'gather'
<>si, <>siri 'wash' (hair)
<>ʁi, <>ʁɪri 'crush'
<>ʁi, <>ʁɪri 'suit, go well with'

Some *r*-type verbs of this subgroup begin with a vowel:

<v>äfi, <v>äfiri 'braid, knot' (with petrified CLIII/HPL marker)
<>at'i, <>at'ɪri 'hit, beat, shoot'[20]
<>ec'i, <>ec'iri 'fill; sow, plant'
<>aχi, <>aχɪri 'permit; let; leave behind'
<>äχi, <>äχiri 'shear, shave'

A labialised root consonant is always followed by /u/. We can assume that underlying stems with aspectual /u/ vs. /i/ ablaut would have neutralised the labialisation in the imperfective. Verbs with {labialised consonant + /u/} must therefore be assigned to the {consonant + schwa} subgroup as well.

[20] This verb has a class specific vowel alternation: CLI/IV/NHPL: *<y>et'-*, CLIII/HPL: *<v>at'-* CLII: *<z>at'-*.

c'ui, c'uri 'flow'
<>ʁui, <>ʁuri 'break'
<>oxui, <>oxuri 'measure'
<>okʰui, <>okʰuri 'sweep'

As mentioned in sections 2.2 and 4.3.1, the *r*-type verbs distinguish a short and an extended imperfective stem. The short imperfective stem consists only of the root, without the characteristic suffix *-r*. For the *r*-type verbs that do not distinguish perfective from imperfective roots by ablaut, this results in the homonymity of the perfective and the short imperfective stem. However, comparisons with the *z*- and *l*-type verbs as well as the ablauting subgroup of the *r*-type verbs make clear that the Habitual, the Hortative Inclusive, the negative imperfective participle, and the two converbs of simultaneity are not formed from the perfective stem but evidently from an imperfective stem. Here, too, the respective formants display an additional *-tʰ* before the vowel when attached to *r*-type verbs.

The Habitual Present is formed from the short imperfective stem in *-tʰar*:

y-okʰ-tʰar-mä
CLI/IV/NHPL-sweep-HABIT-DECL
'usually sweep(s)'

The Hortative Inclusive is formed from the short imperfective stem in *-tʰoa*:

tʰal-v-tʰoa
CIS.LEVEL_pull-HORT.INCL
'let's pull (it) towards ourselves'

The Jussive is formed from the short imperfective stem in *-tʰoa*, preceded by the non-inflected verb stem *<>aχ* 'let':

kuza	*v-aχ*	*erpʰ-tʰoa*
snow	CLIII/HPL-let	melt-IPFV-JUSS

'may the snow melt'

The negative imperfective participle is formed from the short imperfective stem in *-tʰonindä ~ -tʰonundä, ~ -tʰoondä*:

rɪcʰ-tʰonindä ~ rɪcʰ-tʰonundä ~ rɪ-cʰ-tʰoondä
wash-NEG.PTCP.IPFV
'not washing, not being washed'

The converbs of simultaneity are formed from the the short imperfective stem in *-tʰorɪni ~ -tʰoruni ~ -tʰorunu* and *-tʰoršɪni ~ -tʰoršuni ~ -tʰoršunu*:

v-äf-tʰorɪni ~ v-äf-tʰoruni ~ v-äf-tʰorunu
CLIII/HPL-braid, knot-CVB:while.1
'while braiding, knotting'

täpʰ-tʰoršɪni ~ täpʰ-tʰoršuni ~ täpʰ-tʰoršunu
CLIII/HPL-sew-CVB:while.2
'while sewing'

4.4 *n-dä*-type

The verbs of the *n-dä*-type have in common that their stems ends in /n/. They form the perfective participle by means of the regular participle suffix *-i* whereas their imperfective participle is formed by *-dä*. In other functions, this suffix derives adjectives from nouns, e.g. in

Širvan 'Shirvan (city)' → *Širvan-dä* 'of Shirvan'

Among the verbs of this type, one verb distinguishes the perfective from the imperfective root by a close vs. open vowel ablaut:

PFV: *<>q'in-i*, IPFV: *q'an-dä* 'eat'.

This verb is the only verb of this group with a consonantal anlaut without a preceding preverb. For all other verbs, we find the same distribution as for the *r*-type verbs: all verbs with a consonantal anlaut combine with at least one preverb, whereas all verbs with a vocalic anlaut do not take any preverb.

The verb *q'ini*, *q'andä* 'eat' is also peculiar with regard to class marking. When its object refers to things normally regarded as food, no class marking is applied. Only when it refers to non-food objects, particularly live animals and human beings eaten by evil creatures in fairy tales, the perfective stem takes a class maker. The imperfective stem remains unmarked irrespective of the object.

All other verbs of the *n-dä*-type take class markers (or have petrified class markers) both in the perfective and the imperfective stem. Like the *r*-type verbs with stems in {consonant + schwa}, they distinguish a short and an extended imperfective stem, and here, too, the short imperfective stem is homonymous with the perfective stem. So far, the following verb stems could be identified:

<>kʰini, <>kʰindä 'bend (to make ends meet); produce'
<>qˣini, <>qˣindä 'tear apart, tear into pieces'
<>qˣini, <>qˣindä 'hang, get stuck'
<>qˣini, <>qˣindä 'be cold, feel cold'
<>χıni, <>χındä 'approach, reach'
<>χuni, <>χundä 'stand'
<>ʁuni, <>ʁundä 'find room, settle (itr.)'
<>aqqıni, <>aqqındä 'keep, raise, look after; stop'
<>accini, <>accindä 'stay; remain'[21]
r-cʰuni, r-čundä 'ask' (with petrified class marker)[22]

Their Habitual Present is formed from the short imperfective stem in *-tʰar*:

q'an-tʰar-mä
eat(IPFV)-HABIT-DECL
'usually eat(s)'

[21] This verb has peculiar CLII marking in *r-*: *r-accin-i*, *r-accin-dä*. The other classes are regular, with *y-* for CLI/IV/NHPL and *v-* for CLIII/HPL. It is also peculiar for its vowel alternation. The CLI/IV/NHPL form has /e/: *y-eccin-i*, *y-eccin-dä* (cf. the vowel alternation of *<>at'-* ~ *<>et'-* 'hit, beat, shoot', see footnote 20).

[22] The morpheme *r-* is not a typical class marker in Khinalug. At this point of research, it is not clear whether it occurs with loan words from other Nakh-Dagestanian languages or if it is a remnant of an earlier internal system of Khinalug.

The Hortative Inclusive is formed from the short imperfective stem in *-tʰoa*:

χä-pʰ-kʰin-tʰoa
laugh<CLIII/HPL>-HORT.INCL
'let's laugh'

The Jussive is formed from the short imperfective stem in *-tʰoa*, preceded by the non-inflected verb stem <>*aχ* 'let':

k'iyä	*il*	*y-aχ*	*y-eccin-tʰoa*
guest	here	CLI/IV/NHPL-let	CLI/IV/NHPL-stay-IPFV-JUSS

'May the guest stay here.'

The negative imperfective participle is formed from the short imperfective stem in *-tʰonindä ~ -tʰonundä, ~ -tʰoondä*:

lo-bu-ʁun-tʰonindä ~ lo-bu-ʁun -tʰonundä ~ lo-bu-ʁun-tʰoondä
TRANS.LEVEL_settle<CLIII/HPL>-NEG.PTCP.IPFV
'not finding room, not settling'

The converbs of simultaneity are formed from the short imperfective stem in *-tʰorıni ~ -tʰoruni ~ -tʰorunu* and *-tʰoršıni ~ -tʰoršuni ~ -tʰoršunu*:

y-aqqın-tʰorıni ~ y-aqqın-tʰoruni ~ y-aqqın-tʰorunu
CLI/IV/NHPL-keep, look after-CVB:while.1
'while keeping, looking after'

lačʰχın-tʰoršıni ~ lačʰχın-tʰoršuni ~ lačʰχın-tʰoršunu
TRANS.LEVEL_reach out towards-CVB:while.2
'while reaching out towards'

4.5 Irregular and suppletive types

Next to these regular verb types, Khinalug has verbs with suppletive perfective vs. imperfective stems, and other irregular verbs. One verb has a stem extension in /n/ and aspect-related ablaut, but differs from the regular *n-dä* type verbs in that it forms both the perfective and the imperfective participle in *-i* and takes class markers only in the perfective stem:

PFV: <>*t'ın-i*, IPFV: *t'än-i* 'cry'

One verb forms the imperfective participle according to the regular *l*-type verbs, but combines the root with the *r*-type light verb *v-* 'draw, pull' (cf. section 4.3.2) to form the perfective participle. It can only refer to liquid objects, all of which belong to CLIV, so that an overt class marker cannot attach:

PFV: *cʰu-v-i*, IPFV: *cʰu-l-i* 'drink'

One verb forms the imperfective participle according to the regular *r*-type verbs but has a suppletive root for the perfective participle. It can introduce speech acts and govern abstract nouns referring to speech acts, all of which belong to CLIV, so that an overt class marker cannot attach:

PFV: *l-i*, IPFV: *č'i-r-i* 'say'

Another verb has two etymologically unrelated roots for the perfective and the imperfective stem, but here, the imperfective stem does not have any suffix. Only the perfective stem can take a class marker:

PFV: *za<>ʁ-i*, IPFV: *däχ-i* 'see'

Except for *č'i-r-i*, which behaves like a normal *r*-type verb in all forms, these irregular verbs combine with the characteristic suffix variants of the *z*- and *l*-type verbs, i.e. with a vocalic anlaut:

Verb	HABITUAL	HORT.INCL.	JUSSIVE	NEG.PTCP.IPFV	CVB:while.1	CVB:while.2
<>t'ın-i, *t'än-i* 'cry'	*t'än-ar-mä*	*t'än-oa*	*<>aχ t'än-oa*	*t'än-onindä*	*t'än-orını*	*t'än-oršını*
cʰu-v-i, *cʰu-l-i* 'drink'	*cʰu-l-ar-mä*	*ču-l-oa*	*<>aχ ču-l-oa*	*cʰu-l-onindä*	*cʰu-l-orını*	*cʰu-l-oršını*
za<>ʁ-i, *däχ-i* 'see'	*däχ-ar-mä*	*däχ-oa*	*<>aχ däχ-oa*	*däχ-onindä*	*däχ-orını*	*däχ-oršını*
l-i, *č'i-r-i* 'say'	*č'i-tʰar-mä*	*č'i-tʰoa*	*<>aχ č'i-tʰoa*	*č'i-tʰonindä*	*č'i-tʰorını*	*č'i-tʰoršını*

Table 6: Characteristic verb forms of irregular verbs

Moreover, there is a group of three verbs that share the same suppletive root in the imperfective stem. Here, too, only the perfective stems can take class markers:

PFV: *<>q'-i*, IPFV: *ku-i* 'be, become'
PFV: *<>χ-i*, IPFV: *ku-i* 'go (away; to a target)'
PFV: *<>ʁ-i*, IPFV: *ku-i* 'move (oneself)'

The verb stems *<>q'i*, *kui* and *<>χi*, *kui* can occur as bare stems or combine with a very limited number of preverbs. The stem *<>ʁi*, *kui* is used exclusively with at least one preverb.

The root of their shared imperfective participle is *k-oa*, which follows the pattern {PV + stem} of copulas / existential verboids as in the following combinations:[23]

q-oa 'is below'
tʰ-oa 'is far / even'
Ø-oa 'is above'

The root *k-oa* occurs in several non-declarative evidential and modal forms, which cannot be discussed within this article, and also serves as Hortative Inclusive form. The participle suffix *-i* replaces the final vowel, resulting in the imperfective participle *k-u-i*.

Although within the frame of this article, the composition and etymology of affixes cannot be discussed in detail, it should be mentioned that the Habitual suffix *a-r* consists of a verb relic *a* and the imperfective suffix *-r*. Its variant *tʰ-a-r* additionally has the same preverb *tʰ-* that also combines with the above-mentioned copula / existential verboid *tʰ-oa* 'is far/even'.[24] To form the Habitual of *koa*, the imperfective suffix *-r* combines directly with *koa*:

[23] Kibrik et al. (1972: 164–165) describe these copulas only in combination with the declarative clitic *-mä* and the past marker *-šä*. In these forms, the diphtong /oa/ is reduced to /o/. The full form /oa/ occurs only in forms where the copula is not followed by any further morphemes. The same phonetic process /oa/ → /o/ also occurs in nouns such as *soa* 'village' → *so-mä* 'it is a village', *so-šä-mä* 'it was a village'. A few speakers, however, do pronounce the diphtong in any combination with other morphemes.

[24] Kibrik et al. (1972: 93) consider *-tʰ* to be part of the NEREZ' root of *r*-type and *n-dä*-type verbs. The authors believe that *-tʰ* has been derived by a process *ri* → *tʰ* in *r*-type verbs and *dä* → *tʰ* in *n-dä*-type verbs.

ta<>q'i, ta-kui 'be located'	*ta-koa-r-mä* pv:location-be(IPFV):HABIT-DECL 'is / are usually located'
<>χi, kui 'go (away)'	*koa-r-mä* go(IPFV):HABIT-DECL 'usually go(es)'
kʰa<>ʁ-i, ka-kui 'CIS_move'	*kʰa-koa-r-mä* CIS_move(IPFV):HABIT-DECL 'usually comes (to the speaker)'

Since *koa* as a bare stem serves as Hortative Inclusive, no further morpheme is required:

q'i, kui 'be, become'	*koa* be(IPFV):HORT.INCL 'let's be'
la<>χi, la-kui 'TRANS.LEVEL_go (away)'	*la-koa* go(IPFV):HORT.INCL 'let's go away'
točʰ<>ʁi, točʰ-kui 'stand up'	*točʰ-koa* stand up:HORT.INCL 'let's stand up'

A merger of *koa* with suffixes with initial *o-* result in the contraction *koa-o* → *koo*.

Verb	NEG.PTCP.IPFV	CVB:while.1	CVB:while.2
atʰ<>q'i, at-kui 'exist'	*atʰ-ko-onindä* 'which do(es) not exist'	*atʰ-ko-orɪni* 'while existing'	*atʰ-ko-oršɪni* 'while existing'
č'i<>χi, č'i-kui 'transport, take away'	*č'i-ko-onindä* 'which do(es) not transport'	*č'i-ko-orɪni* 'while transporting'	*č'i-ko-oršɪni* 'while transporting'
gäʁ<>ʁi, gäʁ-kui 'turn'	*gäʁ-ko-onindä* 'which do(es) not turn'	*gäʁ-ko-orɪni* 'while turning'	*gäʁ-ko-oršɪni* 'while turning'

Table 7: Assimilation koa-o > koo

5. Formation of the modal stem

Next to the perfective and the (short and extended) imperfective stems, Khinalug verbs have another stem in *-n*, which is the basis of some modal and non-factive forms. Therefore, it will be tentatively named "modal stem" in this article, even though further research on the original function of *n*-stems is required.[25]

[25] Kibrik et al. (1972: 113) mention a "причастие можествования" in *-n*. Kibrik (1984: 394) gives examples for this form such as, e.g., *anskʰ-in-kwi* 'can play, able to play', *anskʰ-in-q'i* 'could play, once able to play'. However, Kibrik does not recognize the complex construction consisting of the *n*-stem (modal stem) together with a reduced *an*-form (see section 5.2).

Regular modal stems are formed with a suffix *-n* from roots that are either homonymous with their perfective or with their imperfective stems (depending on the respective verb type).

5.1 The modal stem of <>*q'i, kui* 'be, become', <>*χi, kui* 'go' and <>*ʁi, kui* 'move

The modal stem of <>*q'i, kui* 'be, become' and <>*χi, kui* 'go (away; to a target)' is formed from the suppletive stem *a* with the suffix *-n*. This stem does not take any class markers. The following table shows the forms where it occurs:

Desiderative 1[26]	*an-koa*
Desiderative 2	*an-koet^{h}koa*[27]
Neg. Imperative 2SG	*an-k^{h}u<>i*
Neg. Imperative 2PL	*an-k^{h}u<v>un*
Neg. Jussive	*an-s<>i*[28]
Potential	*an-q'i, an-kui*
Converb 'until'[29]	*an-t'ını*

Table 8: Modal stem of <>q'i, kui and <>χi, kui

As mentioned before, the light verb <>*ʁi, kui* 'move' only occurs in combination with at least one preverb. The modal stem of verbs with the root <>*ʁi, kui* is formed from the suppletive stem *an* as well. However, since the stress of preverb constructions is on the first syllable, *an* is unstressed and reduced to {schwa + *n*}. The following table shows the modal forms by the example of *qal<>ʁi, qalkui* 'CIS.UP_move' with its modal stem *qal-ın* ← *qal-an*:

	Surface form	Underlying
Desiderative 1	*qalın-koa*	*qal-an-koa*
Desiderative 2	*qalɯn-koet^{h}koa*	*qal-an-kui-at^{h}koa*
Neg. Imperative 2SG	*qalın-k^{h}u<>i*	*qal-an-k^{h}u<>i*
Neg. Imperative 2PL	*qalın-k^{h}uvun*	*qal-an-k^{h}u<v>un*
Neg. Jussive	*qalın-s<>i*	*qal-an-s<>i*
Potential	*qalın-q'i, qalın-kui*	*qal-an-q'i, qal-an-kui*
Converb 'until'	*qalın-t'ınni*	*qal-an-t'ını*

Table 9: Modal forms of qal<>ʁi, qalkui 'CIS.UP_move'

[26] The Desiderative 1 in *koa* is used for wishes to be fulfilled by God, whereas the Desiderative 2 in *-koet^{h}koa* is used for wishes to be fulfilled by humans. Khinalug has no Desiderative form for events that are desired to happen by themselves. Here, the Jussive is used instead.

[27] The morpheme *koet^{h}koa* < *k-u-i-at^h-k-oa* consists of the participle *k-ui* 'be' (with preverb *k-*), the copula / existential verboid *at^h*, and the non-participle form *koa* of 'be'. The combination of *at^h* + *koa* is the non-participle imperfective form of the verb *at^{h}q'i, at^{h}kui* 'exist'. See also footnote 15.

[28] Kibrik et al (1972: 110) believe that the Negative Jussive consists of the prohibitive morpheme *sı* and a prefixed class marker that attaches to the construction only in CLII and CLIII/HPL. Instead, this constuction must be analysed as an obsolete Jussive *sı* + negative copula <>*i* with a lax pronunciation of the word-final *-i*. The CLI/IV/NHPL form is *si* < *sı-y-i*, the CLII form is *sı-z-i*, the CLIII/HPL form is *sı-v-i*. The Jussive function of *sı* is maintained in some *-sım* constructions, i.e. *sı* + focus clitic *-m*, with necessitative or final meaning.

[29] Kibrik et al. (1972: 210–211) describe the function of what they denote as *(n)t'ın*. They do not recognize that 'until' constructions are formed differently with *r-* and *n-dä*-type verbs on the one hand, and *z-* and *l*-type verbs on the other. In the first group, the forms must be analysed as {modal stem + *ant'ını*} as shown by some non-contracted forms in the corpus such as *qilk^{h}ın-ın-t'ını* 'until (the soul) separates (from the dying body)'. In the second group, the converb 'until' is formed as {imperfective stem + *ont'ını*} as in, e.g., *c'i-l-ont'ını* 'until becoming full', *k'ı-l-ont'ını* 'until dying'. Since both *a* and *oo* are attested verb relics in Khinalug, we may assume that these two suffix variants differ in their verbal base, i.e. *n*-stem of *a* vs. *n*-stem of *oo*.

When combining with a preverb ending in a vowel, {vowel + *an*} results in {long vowel + *n*}, as shown in Table 10 with the example *kʰa<>ʁi*, *kʰa-kui* 'CIS_move' with its modal stem *kʰaan* ← *kʰa-an*:

	Surface form	Underlying
Desiderative 1	*kʰaan-koa*	*kʰa-an-koa*
Desiderative 2	*kʰaan-koetʰkoa*	*kʰa-an-kui-atʰkoa*
Neg. Imperative 2SG	*kʰaan-kʰu<>i*	*kʰa-an-kʰu<>i*
Neg. Imperative 2PL	*kʰaan-kʰuvun*	*kʰa-an-kʰu<v>un*
Neg. Jussive	*kʰaan-s<>i*	*kʰa-an-s<>i*
Potential	*kʰaan-q'i, kʰaan-kui*	*kʰa-an-q'i, kʰa-an-kui*
Converb 'until'	*kʰaan-t'ɪnni*	*kʰa-an-t'ɪni*

Table 10: Modal forms of kʰa<>ʁi, kʰakui 'CIS_move'

5.2 The Potential[30] as a usage example for the modal stem

A range of modal forms is based on a modal stem both in direct combination with suffixes (e.g. the Negative Jussive) and with reduced variants of *an*-forms, which are regrammaticalised as suffixes (e.g. the Potential). Not all of them can be discussed within the frame of this article. Instead, the usage of the modal stem will be exemplified by the Potential, which consists of the respective verb in its modal stem + *an<>q'i*, *an-kui*.[31] In these complex forms, the morpheme boundary is located between *-n* (auslaut of the modal stem) and {schwa + *n*} ← *an*. Only monosyllabic verb stems often maintain both syllables, whereas bisyllabic ones undergo the elision *-n-ɪn* → *-n* more frequently, and full *-n-ɪn* forms of trisyllabic or even longer verb stems are not attested.

The *z*- and *l*-type verbs form their modal stem in {perfective stem + *n*}. Since the *z*- and *l*-type verbs cannot combine with preverbs, they have monosyllabic stems, so that many speakers prefer the full forms, for example:

Verb	Potential	Occasionally with elision:
<>ki, kizi 'burn'	*<>kin-in<>q'i* *<>kin-inkui*	*<>kin<>q'i* *<>kinkui*
fi, fili 'braid, knot'	*fin-in<>q'i* *fin-inkui*	*fin<>q'i* *finkui*
<>xi, xili 'simmer, cook'	*<>xin-in<>q'i* *<>xin-inkui*	*<>xin<>q'i* *<>xinkui*
kʰi, kʰli 'hear'	*kʰin-in<>q'i* *kʰin-inkui*	*kʰin<>q'i* *kʰinkui*

Table 11: Potential of z- and l-type verbs

The *n-dä*-type verbs never add an additional *-n* to their stem. The hypothesis that the stem extension in *-n* of *n-dä*-type verbs and the modal stem formant *-n* go back to the same morpheme will be disucssed in section 6. For example, the potential of *<>aqqɪni*, *<>aqqɪndä* 'keep, look after; stop' is

<>aqqɪn-ɪn<>q'i, <>aqqɪn-ɪnkui 'be abel to keep, look after, stop'

[30] Sometimes also called "abilitative".

[31] The verb 'be' as formant of the Potential is a widespread phenomenon in the area: in Budugh, a form of 'be' combines with the perfective participle (Authier, in preparation), in Kryz, a form of 'be' combines with the dative marked perfective stem (Authier 2009: 308–309).

In the two Khinalug verbs with aspectual ablaut of a close vowel (perfective) vs. an open vowel (imperfective), *<>t'ɪni*, *t'äni* 'cry'and *q'ini*, *q'andä* 'eat', the vowel shows that their modal stem is derived from the perfective stem. Their Potential forms are:

<>t'ɪn-ɪn<>q'i, <>t'ɪn-ɪn-kui 'be able to cry'
q'in-in<>q'i, q'in-in-kui 'be able to eat'

Also the verb *za<>ʁi*, *däχi* 'see' derives the modal stem from the perfective stem and has the Potential form:

za<>ʁin-in<>q'i, za<>ʁin-in-kui 'be able to see'
often with elision: *za<>ʁin<>q'i, za<>ʁin-kui*

In a similar way, *cʰuvi*, *cʰuli*, which forms its perfective stem by means of the light verb *v-* 'draw, pull', confirms that the modal stem is derived from the perfective, since the stem extension *-n* attaches to the light verb:

cʰuvun-un<>q'i, cʰuvun-un-kui 'be able to drink'
often with elision: *cʰuvun<>q'i, cʰuvun-kui*

However, the ablauting subgroup of the *r*-type verbs reveals that the modal stem is not regularly a derivation from the perfective. Here, a form that is homonymous with the short imperfective stem with its characteristic vowel /i/ receives the modal stem formant *-n*:

Verb	Potential	Often with elision:
kʰui, kʰiri 'make, do'	*<>kʰin-in<>q'i* *<>kʰin-inkui*	*<>kʰin<>q'i* *<>kʰinkui*
lä<>k'ui, lä<>k'iri 'TRANS.LEVEL_give'	*lä<>k'in-in<>q'i* *lä<>k'in-inkui*	*lä<>k'in<>q'i* *lä<>k'inkui*
tʰenčʰ<>qˣui, tʰenčʰ<>qˣiri 'CIS.LEVEL_take'	*tʰenčʰ<>qˣin-in<>q'i* *tʰenčʰ<>qˣin-inkui*	*tʰenčʰ<>qˣin<>q'i* *tʰenčʰ<>qˣinkui*

Table 12: Potential of r-type verbs (ablaut subgroup)

The {consonant + schwa} subgroup of the *r*-type verbs derives its modal stem from a basis that is homonymous with both the perfective and the short imperfective stem.

Notably, the verb *li*, *č'iri* 'say' forms a modal stem *č'in* that is the basis of the Potential. We may assume that, at an earlier stage of the language, the verb was a regular *r*-type verb **č'i*, *č'iri*. Therefore, it follows the modal stem pattern of the *r*-type verbs, i.e. *-n* attaches to a form which is homonymous with the short imperfective stem:

č'in-in<>q'i, č'in-in-kui 'be able to say'

However, in other usages of the modal stem (e.g. the Negative Jussive), *lin-* is attested as well:

lin-si (←*lin-sɪ-y-i*) say-JUSS-CLI/IV/NHPL-NEG
'(he/she/they) shall not say'

6. Transition between verb types

At the current stage of the language, the verbs are stable in their respective verb type. There is no productive derivational pattern to transfer them from one verb type to another, nor a clear grammatical function or feature that can be assigned to each verb type. However, the phonological and semantic overlaps of roots that occur in more than one type support the hypothesis that the morphemes which nowadays serve as imperfective markers or stem extensions used to be derivational affixes at an earlier stage of the language.

The transition between verb types is most evident when there are no preverbs involved that influence the semantics, which is the case for *z*- and *l*-type verbs and their respective counterparts in the *r*-type. In other cases, preverbs may occur only in one verb type, or different preverbs in each verb type, so that the respective semantics of the resulting verb stems shifts into different directions.

The most evident transition is attested between the *l*-type verbs on the one hand and the *r*-type verbs on the other. Some *r*-type verbs are considered synonyms of the respective *l*-type verbs. This is particularly the case when both verbs are transitive, e.g.

root: *f*
l-type: *fi, fili* 'braid, knot'
r-type: *<v>äfi, <v>äfiri* 'braid, knot'[32]

root: *q*^{x}
l-type: *q*^{x}*i, q*^{x}*ili* 'play (an instrument), perform (sth. on stage)'
r-type: *<>äq*^{x}*ui, <>äq*^{x}*iri* 'play (an instrument), perform (sth. on stage)'

Some *r*-type verbs have enlarged their semantic scope:

root: *q*^{x}
l-type: *q*^{x}*i, q*^{x}*ili* 'weave, knit'
r-type: *<>äq*^{x}*ui, <>äq*^{x}*iri* 'weave, knit; knead (dough)'

Some verbs of the *l*-type are labile. Among the *r*-type verbs, however, lability is extremely rare, being attested only for a few verbs in only certain parts of their paradigm. Usually, *r*-type verbs are either intransitive or transitive, and intransitive verbs must be transitivised by certain morphological patterns (cf. Rind-Pawlowski 2021). The roots that form labile verbs in the *l*-type form transitive verbs in the *r*-type:

root: *c'*
l-type: *c'i, c'ili* 'become full; fill; plant, sow'
r-type: *<>ec'i, <>ec'iri* 'fill; plant, sow'

root: *x*
l-type: *<>xi, xli* 'simmer; boil; make boil; cook'
r-type: *<>exi, <>exiri* 'make boil, cook'

root: *t'*
l-type: *t'üi, t'üli* 'be born, give birth'
r-type *zü-t'üi, zü-t'üri* 'give birth'[33]

A transition between *z*- and *r*-type verbs is attested as well. The *r*-type verb may undergo semantic shifts, as in

root: *q'*
z-type: *<>q'i, q'izi* 'become dry; let, make dry'
r-type: *<>äq'ui, <>äq'iri* 'bake'; *<y>äq'ui, <y>äq'iri* 'flatulate'

[32] Irrespective of the object class, the verb *<v>äfi, <v>äfiri* carries the class marker for CLIII/HPL, which supports the hypothesis that *fi, fili* with its root consonant /f/ is a form related to CLIII/HPL as well.

[33] The morpheme *zü-* in *zü-t'üi, zü-t'üri* might be a petrified marker for CLII or a petrified deictic preverb TRANS.DOWN. Since this verb should agree with the object, not with the mother as the subject (CLII), the latter is more likely.

Some *r*-type verbs are used exclusively in the Imperative, but not in any other verbal categories. They can be identified as underlying *r*-type verbs because only this type has a morphological distinction between transitive Imperatives in *-a / -ä* and intransitive Imperatives in *-l*. All other types form their Imperatives in *-a / -ä* irrespective of their valency.

root: *q*
z-type: *<>qi, qizi* 'become cold; let, make cold'
r-type: IMP: *<>äqil!* 'become cold! cool down!' ← **<>äq(u)i, äqiri*

root: *kʰ*
l-type: *kʰi, kʰli* 'hear'
r-type IMP: *<y>akʰɪl!* 'hear!' ← **<y>akʰi, <y>akʰri*

Some transitive *r*-type derivations of labile *z*-type verbs are not attested as simple *r*-type stems. Instead, they are derived by the transitivising auxiliary verb *<>kʰui, <>kʰiri* 'do' from the simple *r*-type stem:

root: *q*
z-type: *<>qi, qizi* 'become cold; let cool, make cool'
transitivised *r*-type: *<>äq<>kʰui, <>äq<>kʰiri* 'let cool, make cool'
derived from: **<>äq(u)i, <>äqiri*

root: *k*
z-type: *<>ki, kizi* 'burn (by itself); let, make burn'
transitivised *r*-type: *<>äk<>kʰui, <>äk<>kʰiri* 'let, make burn'
derived from: **<>äk(u)i, äkiri*

root: *q'*
z-type: *<>q'i, q'izi* 'become dry; let, make dry'
transitivised *r*-type: *<>äq'<>kʰui, <>äq'<>kʰiri* 'let, make dry'
derived from: **<>äq'(u)i, <>äq'iri*

In some cases, we can identify preverbally marked *r*-type verbs as correspondents of *l*-type verbs as well:

root: *c'*
l-type: *c'i, c'ili* 'become full; fill; plant, sow'
r-type: *ši-c'i, ši-c'iri* 'add, mix into'

On this basis, the above mentioned verbs with root variation or petrification in *š-* / *f-* and the basic root semantics 'insert; intertwine' can be identified as being related to *fi, fili* 'braid, knot' (cf. section 3):

root: *š / f*
l-type: *fi, fili* 'braid, knot'
r-type: *läk'il-ši, läk'il-širi* / *läk'il-fi, läk'ilfiri* 'TRANS.LEVEL_put under; put into a hollow space (e.g. firewood, or a person, into an oven'(PFV)-PTCP'
r-type: *čä-ši, čä-širi / čä-fi, čä-firi* 'put down'
r-type: *gä-ši, gä-širi* / *gä-fi, g-äfiri* 'put on a high place'
r-type: *läχši, läχširi* 'TRANS.LEVEL_insert, attach' (e.g. meat on a skewer, ring on finger; denture in mouth)'

r-type: *lii-ši, lii-širi-* 'TRANS.LEVEL_insert, attach (e.g. meat on a stick for drying, sock on a sock last)
r-type: *ni-ši, ni-širi* 'put on, wear'
r-type: *gäčʰ-ši, gäčʰ-širi* 'build, erect'
r-type. *kʰaš-fi, kʰaš-firi* 'tidy, put things to their place'
r-type: *tıranš-fi, tıranš-firi* 'soak, be inserted into liquidity (e.g. bread in soup)'
r-type: *k'i-fi, k'ifiri* 'suck' < 'insert (teat) into mouth'
r-type: *šäl-fi, šäl-firi* 'sew warp threads (with a needle) for darning'

Similarly, the root *qˣ-* of the *l*-type verb *qˣi, qˣili* 'weave, knit', with the basic semantics of 'intertwine, entangle (threads)' occurs in other verb types, too, partly the with semantic shifts → 'get stuck' or → 'adhere'.

root: *qˣ*
l-type: *qˣi, qˣili* 'weave, knit'
r-type: *ši<pʰ>qˣui, ši<pʰ>qˣiri* 'become entangled (threads), become confused (mind)'[34]
r-type: *zi<pʰ>qˣui, zi<pʰ>qˣiri* 'get stuck in the throat'[35]
r-type: *čäl<>qˣui, čäl<>qˣiri* 'patch (the soles of knitted slippers)
r-type: *laš<>qˣui, laš<>qˣiri* 'get stuck (e.g. axe in the wall, nail in a coat)'
n-dä-type: *čäš<>qˣini, čäš<>qˣindä* 'adhere, stick'
n-dä-type: *äχil<>qˣini, äχil<>qˣindä* 'get caught, get stuck'
n-dä-type: *χäl<>qˣini, χäl<>qˣindä* 'not manage to leave in time; not be seen for a long time (moon)'

Regarding the suppletive type, only transitions between their perfective root and other verb types are attested. The perfective root *q'-* of *<>q'i, kui* 'be, become' also occurs in the *r*-type, where it forms a transitive light verb:

root: *q'*
suppl. type: *<>q'i, kui* 'be, become'
r-type: *<>q'ui, <>q'iri* 'cause to become, cause'

Both *<>q'i, kui* and *<>q'ui, <>q'iri* take part in diathetic pairs. Together with its transitive counterpart *<>kʰui, <>kʰiri* 'do', *<>q'i, kui* is used as a light verb to integrate Azerbaijani verbs, which are borrowed in their perfective participle form. Intransitive verbs combine with *<>q'i, kui*, and transitive verbs with *<>kʰui, <>kʰiri*:

äčʰilmiš<>q'i, äčʰilmiš-kui 'open by itself, be opened'
äčʰmiš<>kʰui, äčʰmiš<>kʰiri 'open (sth.)'

Together with its intransitive counterpart *<>kʰi, <>kʰıri* 'fall', *<>q'ui, <>q'iri* 'cause' is used as a light verb to form semantic pairs from petrified inherited verb stems and preverb clusters. Even though the complex question of preverbal elements cannot be addressed in this article, two examples of petrified verb stems in the preverbal field can be given here, which display the feature of regressive assimilation of plosive consonants: ejective before ejective, aspirated before aspirated. The preverb *tʰ-* ~ *t'-* in *latʰ<>kʰıri* and *lat'<>q'iri* can be traced back to a

[34] This verb has a petrified CLIII/HPL marker.
[35] This verb has a petrified CLIII/HPL marker.

petrified verb stem **t'* 'lie down'.[36] The preverb *it-* ~ *it'-* in *itʰ<>kʰɪri* and *it'<>q'iri* can be identified as a petrified verb stem **it* 'crush, pound'.[37]

la-tʰ-k-i, la-tʰ-kʰɪri
PV:TRANS.LEVEL-PV:lie.down-VS:fall
'fall down, break down, collapse'

la-t'-q'ui, la-t'-q'iri
PV:TRANS.LEVEL-PV:lie.down-VS:cause
'knock down, demolish'

itʰ-kʰi, itʰ-kʰɪri
PV:crush-VS:fall
'crack, be crushed-IPFV-PTCP'

it'-q'ui, it'-q'iri
PV:crush-VS:cause
'pound, crush, cause to crack'

The perfective root *χ-* of *<>χi, kui* 'go, go away, go towards a target' occurs also in the *r*-type and *ndä*-type:

suppl. type:	*<>χi, kui* 'go, go away, go towards a target'
r-type:	*lä<>χui, lä<>χiri* 'TRANS.LEVEL_make go to, cause to reach (a target)'
r-type:	*lačʰ<>χui, lačʰ<>χiri* 'TRANS.LEVEL_stretch towards; point (a gun) at; spread (wood paneling)'
ndä-type:	*lačʰ<>χini, lačʰ<>χindä* 'TRANS.LEVEL_reach, arrive (at a target); TRANS.LEVEL_reach for (sth. with one's hands)'

As the overview shows, the *r*-type verbs are the transitive/causative derivation of the suppletive verb type ('go to a target' → 'make go to, make reach a target'), whereas the *ndä*-type verbs are intransitive. Depending on the respective preverbs, the basic meaning '(make) go to, (make) reach' either focusses on the the direction (static), the movement (dynamic), or the arrival (telic).

The root *ʁ-* of the verb *ʁi, kui* 'move' also occurs in the *ndä*-type. When the same preverb set is applied, the *ndä*-type semantics overlaps with one secondary, figurative meaning of the suppletive type, thus enlarging its semantic scope in the figurative sense:

suppl. type:	*lačču<>ʁi, lačču-kui* 'TRANS.LEVEL_go upwards; TRANS.LEVEL_go towards an edge; TRANS.LEVEL_be enough'[38]
ndä-type:	*lačču<>ʁini, lačču<>ʁindä* 'TRANS.LEVEL_be enough; TRANS.LEVEL_succeed, make it'[39]

[36] Cf. Batsbi *=aṭ-* 'to lie, lie about', Hinukh *=oṭ-* 'to lie down', Bezhta and Hunzib *=uṭ-* 'to sleep' (Nikolayev & Starostin 1994: 1035).

[37] Cf. Chechen and Ingush *āt-*, Batsbi *at-* to crush, pound, Lak *=u=ta-n* to throw, to pound, to chop, Akusha Dargwa *=it-es*, Chirag-Dargwa *=it-* to beat, Lezgi *g-ata-*, Agul *uta-*, Rutul *=äta-*, Tsakhur *g-e=ta-*, Kryz *=ät-*, Budugh *at-* 'to beat', Tabasaran *k-at-* 'to smear', Archi *=āta-* 'to crush' (Nikolayev & Starostin 1994: 282).

[38] As a movement verb, all productive preverbs (cf. Table 4**Fehler! Verweisquelle konnte nicht gefunden werden.**) can attach to the stem. In the sense 'be enough', only TRANS.LEVEL marking with *la-* is possible.

[39] Since this verb is only used in the figurative sense, only TRANS.LEVEL marking with *la-* is possible.

Some roots are attested in the *r*-type and in the *ndä*-type. One of these is the root *q^{x}-* 'tear (off, apart)', which occurs in the following verbs:

r-type: *zä<>q^{x}ui, zä<>q^{x}iri* 'tear off'
r-type: *lii<>q^{x}ui, lii<>q^{x}iri* 'scratch off with one's finger nails'[40]
r-type: *inq^{x}ui, in<>q^{x}iri ~ ınq^{x}ui, ın<>q^{x}iri* 'reap (with a sickle)'[41]
n-dä-type: *latır<>q^{x}ini, latır<>q^{x}indä* 'tear apart, tear into pieces'[42]

One of the homonymous roots *k^{h}-* can be assigned to the basic meaning 'come together; put together'. The *r*-type verb *<>k^{h}ui, <>k^{h}iri* has undergone two semantic shifts: on the one hand, the developement 'put together' → 'unite' → 'arrange marriage, get engaged' and, on the other hand, 'put together' → 'produce' → 'make' → 'do'. The first meaning is used only from the perspective of the groom and his parents, so that the verb can only occur with CLII agreement *<s>k^{h}ui*, *<s>k^{h}iri*, referring to a female object. The second meaning has enabled *<>k^{h}ui*, *<>k^{h}iri* to become the most frequently used verb stem in the Khinalug language. It serves to integrate transitive verbs borrowed from Azerbaijani (see above, same section), forms transitive movement verbs in combination with specific preverb clusters, and is used as a transitivising auxiliary verb. Apart from these grammatical functions, the meanings 'put together, unite' and 'produce, make' dominate:

r-type: *<>k^{h}ui, <>k^{h}iri* 'produce, make, do'
r-type: *<s>k^{h}ui, <s>k^{h}iri* 'arrange marriage with; get engaged with'
r-type: *zä<>k^{h}ui, zä<>k^{h}iri* 'to spin (wool)' < 'unite (fibres)'[43]
ndä-type. *χä<>k^{h}ini, χä<>k^{h}indä* 'laugh' < 'produce (the sound) *χä*'
ndä-type: *zi<>k^{h}ini, zi<>k^{h}indä* 'bend (so that ends meet); bow (a body part, e.g. one's head)'

Notably, the Comitative case ending *-š-k^{h}ili* consists of the Possessive-Locative case *-š* and the relic of an *l*-type verb **k^{h}i, k^{h}ili*, which can be reconstructed at least with an intransitive meaning 'be together with, unite with, join' (even though it might have been a labile verb that allowed for a transitive interpretation as well). As part of the case suffix, this verb occurs in the imperfective participle form, which has a secondary function as an adverb of manner:

dädä-š-k^{h}ili 'with one's mother' ← 'joining one's mother'

Last but not least, it should be mentioned that no transitions are attested between the *z*-type, the *l*-type and the suppletive type.

7. Summary and conclusions

Khinalug verbal roots consist of a characteristic consonant, which may form stems of different shapes, depending on the respective verb type.

Khinalug verbs can be assigned to specific verb types, according to their pattern of forming imperfectives. The verb types also differ with regard to distinction between a short and a long

[40] This verb can take any of the productive preverbs (cf. Table 4). However, the long vowel is attested only in directions away from the speaker: *ii<>q^{x}iri*, *lii<>q^{x}iri*, *zii<>q^{x}iri*, but *il<>q^{x}iri*, *til<>q^{x}iri*, *qil<>q^{x}iri*.

[41] This verb has petrified with class marker <∅>, i.e. in class I/IV/NHPL.

[42] This verb can take any of the productive preverbs (cf. Table 4).

[43] This verb has petrified with class marker <∅>, i.e. in class I/IV/NHPL, since wool is a class IV noun.

imperfective stem, and the suffixes used for the formation of the Habitual, the Hortative Inclusive, the negative imperfective participle, and two converbs of simultaneity:

	short IPFV	long IPFV	IPFV.PTCP	HABIT	HORT.INCL	NEG. IPFV.PTCP	CVB:while.1	CVB:while.2
z-type		✓	*-z-i*	*-ar*	*-oa*	*-onindä*	*-orıni*	*-oršıni*
l-type		✓	*-l-i*	*-ar*	*-oa*	*-onindä*	*-orıni*	*-oršıni*
r-type	✓	✓	*-r-i*	*-tʰar*	*-tʰoa*	*-tʰonindä*	*-tʰorıni*	*-tʰoršıni*
n-dä-type	✓	✓	*-dä*	*-tʰar*	*-tʰoa*	*-tʰonindä*	*-tʰorıni*	*-tʰoršıni*

Table 13: Characteristic features of the verb types

Khinalug distinguishes perfective, (short and long) imperfective, and modal stems. The latter are formed on a basis that may be homonymous with the short imperfective stem (*r*-type verbs) or the perfective stem (all other types). A schwa is added between the root consonant and *-n* to enable pronunciation; it is usually pronounced as /i/, /ı/, or, after labial consonants, /u/. Stems in low vowel + C maintain their low vowel in the modal stem.

	PFV-stem	short IPFV-stem	long IPFV-stem	modal stem
z-type	C	-	C-*z*	C-*n*
l-type	C	-	C-*l*	C-*n*
r-type	C low V-C C*u* low V-C*u*	C low V-C C*i* low V-C*i*	C-*r* low V-C C*i*-*r* low V-Ci-r	C-*n* low V-C-*n* C-*n* low V-C-*n*
n-dä-type	C-n low V-C-*n*	C-*n* low V-C-*n*	C-*n*-*dä* low V-C-*n*-*dä*	C-*n* low V-C-*n*
ablaut subtype	C-high V-*n*	C-low V-*n*	C-low V-*n*	C-*n*

Table 14: Overview of the Khinalug verb stems

Root consonants with their respective meaning may occur in different verb types. Their basic meaning is maintained, but it is further specified by the verb type itself and the combination with specific preverbs. The investigation of root consonants (including the distinction of homonyms with different meanings and etymologies) as well as their detection in the different verb types is the topic of current research. So far, the following distribution has been identified:

Root	Meaning	*z*-type	*l*-type	suppl. type	*r*-type	*ndä*-type
c'	fill		✓		✓	
f / š	intertwine		✓		✓	
k	burn	✓			✓	
kʰ	hear		✓		✓	
kʰ	put together				✓	✓
q	cool	✓			✓	
q'	dry	✓			✓	
q'	become, cause			✓	✓	
qˣ	weave, entagle, get stuck		✓		✓	✓

q^{x}	play an instrument		✓		✓	
q^{x}	tear				✓	✓
t'	be born, give birth		✓		✓	
x	boil, cook		✓		✓	
χ	go, arrive			✓	✓	✓

Table 15: Root consonants and their occurrences in the verb types

The overview shows that all investigated root consonants occur at least in the *r*-type. The highest transition rate is attested between *l*-type and *r*-type. Transitions between *z*- and *r*-type, *n-dä*-type and *r*-type as well as *l*-type and *n-dä*-type occur less often. Transitions between *z*- and *l*-type as well as *z*- and *n-dä* type are not (yet) attested. Further research is needed to complete the overview and draw valid conclusions on possible or impossible paths of transition.[44]

The occurrence of certain root consonants in more than one verb type supports the hypothesis that the morphemes which nowadays serve as imperfective markers or stem extensions used to be derivational affixes at an earlier stage of the language. Notably, the same elements, i.e. the suffixes *-r*, *-n*, *-z* and *-l* also serve as plural suffixes in the nominal, and partly also in the pronominal system.[45]

The plural in *-r* is used with nouns referring to humans:

halamχer 'shepherd' > *halamχer-ir* 'shepherd-PL'
du 'DP.PROX.CLI' > *du-r* 'DP.PROX.HPL'

The plural in *-n* is used with nouns referring to humans as well:

borc^{h} 'aunt (father's sister)' > *borc*^{h}*-ın* 'aunt (father's sister)-PL'

The plural in *-z* is petrified with nouns referring to things or animals that usually occur in groups or herds, and occurs as a human plural in the pronominal system:

luc^{h}*o-z* 'cow', *liq*^{x}*e-z* 'calf', *c*^{h}*ulo-z* 'tooth'
hu 'DP.DIST.CLI' > *ho-z* 'DP.DIST.HPL'

The suffix *-l* expresses plurality with some non-human nouns and paucality with a few human nouns:

bemb 'fly'> *bimbe-l* 'fly.OBL-PL
riši 'girl' > *riši-l* 'a few girls' > *riši-l-ir* 'many girls, girls in general'

The question arises whether the homonymity between plural suffixes and imperfective/ modality markers and stem extensions is just a coincidence or if they go back to the same morphemes. The hypothesis seems justified that, as a first step, plurality of items and plurality of events or activities were marked by the same affixes. Plurality of events or activities may have subdivided into different manifestations, such as habitual repetition, iterativity, or continuativity. In a last step towards the current patterns, the aktionsart-related suffixes may

[44] The verbs of the suppletive type may have belonged to a different verb type before one of their stems was replaced. The original verb type cannot be reconstructed, so that they should be excluded from the statistics.
[45] In addition to these plural suffixes, Khinalug can express the plurality of nouns by petrified nominal class marker suffixes (*-b* and *-d*), and by combinations of petrified class markers with these plural suffixes.

have been regrammaticalised as imperfectives. Notably, the Caucasian Albanian imperfective patterns[46] distinguish two strategies: ablaut on the one hand and infixation of *-r-* and *-l(e)-* (*-l'-* after palatal vowel) on the other. The elements used in the infixation pattern go back to iterative morphemes (Gippert et al. 2009: II-44).

We may assume that *-r* formerly served as a derivational affix for the expression of a Habitual aktionsart, before it was regrammaticalised as imperfective. As shown in section 4, *-r* forms the Habitual directly with *koa* 'be, become', and with the verboids *a* and *tʰa* in combination with other verbs (cf. Table 12).

The imperfective suffix *-z* occurs only with verbs that express the attainment of states (become cold, let cool down; become dry, let dry) or continuous processes (be on fire, let burn; tremble, shiver). This hints at a former function of *-z* as a derivational morpheme for the expression of a continuative / durative aktionsart.

Moreover, we can assume that the stem extension *-n* and the modal stem formant *-n* go back to the same morpheme. Some verbs may have petrified in their modal stem, or *-n* might have had a different function at the time of its regrammaticalisation as a stem extension. When we look at the probably most ancient verbs with ablaut, *q'ini*, *q'andä* 'eat' ← 'bite repetitively' and *t'ıni*, *t'äni* 'cry' ← 'shed a tear repetitively', the hypothesis seems justified that *-n* might have been a derivational affix for the expression of iterativity (in the sense that one coherent activitiy is carried out by repetitive actions). This feature can also be detected in several other verbs of the *n-dä* type, e.g. *χä<>kʰini, χä<>kʰindä* 'laugh' ← 'produce the sound *χä* repetitively', or *qˣini, qˣindä* 'tear apart, tear into pieces' ← 'tear repetitively'.

The imperfective suffix *-l* is more difficult to analyse. It occurs with verbs that express activities typically carried out by repetitive movements (*fi*, *fili* 'braid, knot', *qˣi*, *qˣili* 'weave', possibly also *c'i*, *c'ili* 'fill'), continuous processes (*xi*, *xili* 'simmer, boil') as well as actions that can be repeated only in case of a plurality of agents and / or objects (*k'i*, *k'li* 'die; kill', *q'ui*, *q'uli* 'break', *t'üi*, *t'üli* 'be born, give birth). More research is required to identify a possible former derivational function of *-l*. It might have been used for the expression of repetitive independent activities before it was regrammaticalised as an imperfective suffix.

Appendix

Abbreviations

C	Consonant
CIS_	Towards a point of orientation from any level
CIS.DOWN_	Towards a point of orientation from above downwards
CIS.LEVEL_	Towards a point of orientation from the same level
CIS.UP_	Towards a point of orientation from below upwards
CL	Class
COORD	Coordinative clitic
CVB	Converb
DECL	Declarative
DIST	Distal

[46] Even though the Caucasian Albanian verbs inflect only for tense and mood, residues of an older aspectual system can be found in a few verbs (Gippert et al. 2009: II-44).

DP	Demonstrative pronoun
GEN.INAL	Inalienable Genitive
HABIT	Habitual
HORT	Hortative
HPL	Human plural
IMP	Imperative
INCL	Inclusive
INST	Instrumental
IPFV	Imperfective
NEG	Negative / Negation
NH	Non-human
NHPL	Non-human plural
PFV	Perfective
PROX	Proximal
PST	Past
PTCP	Participle
PV	Preverb
TRANS.DOWN_	Away from a point of orientation from above downwards
TRANS.LEVEL_	Away from a point of orientation on the same level
TRANS.UP_	Away from a point of orientation from below upwards
V	Vowel
VS	Verb stem

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ზმნური ძირები და ფუძეები ხინალუღურში

მონიკა რინდ-პავლოვსკი

ხინალუღურ ენაში ზმნური ძირები შედგება მახასიათებელი თანხმოვნებისაგან, რომელსაც შეუძლია ზმნის ტიპის მიხედვით განსხვავებული ფორმის ფუძეების წარმოება. ხინალუღური ზმნები, იმპერფექტული ზმნების წარმოების ნიმუშის მიხედვით თუ ვიმსჯელებთ, შეიძლება მივაკუთვნოთ კონკრეტულ ტიპებს. ზმნის ტიპები ასევე განსხვავდებიან მოკლე და გრძელი იმპერფექტული ფუძეებისა და სუფიქსების მიხედვით, რომლებიც გამოიყენება ჰაბიტუალური, ჰორტატიულ-ინკლუზიური, უარყოფითი იმპერფექტული მიმღეობისა და ორი თანადროული კონვერბის წარმოებისათვის:

	მოკლე IPFV	გრძელი IPFV	მიმღ. IPFV	ჰაბიტ.	ჰორტ. ინკლ.	უარყ. მიმღ. IPFV	კონვ: შემთხ.1	კონვ: შემთხ.2
z-ტიპი		✓	*-z-i*	*-ar*	*-oa*	*-onindä*	*-orıni*	*-oršıni*
l-ტიპი		✓	*-l-i*	*-ar*	*-oa*	*-onindä*	*-orıni*	*-oršıni*
r-ტიპი	✓	✓	*-r-i*	*-t^{h}ar*	*-t^{h}oa*	*-t^{h}onindä*	*-t^{h}orıni*	*-t^{h}oršıni*
n-dä-ტიპი	✓	✓	*-dä*	*-t^{h}ar*	*-t^{h}oa*	*-t^{h}onindä*	*-t^{h}orıni*	*-t^{h}oršıni*

ხინალუღური განასხვავებს პერფექტულ, (მოკლე და გრძელ) იმპერფექტულ და მოდალურ ფუძეებს. მოდალური ფუძე შეიძლება დაემთხვეს მოკლე იმპერფექტულ (r-ტიპის ზმნების) ფუძეს ან პერფექტულ (ყველა სხვა ტიპის) ფუძეს და წარმოქმნას ომონიმია. ამასთან, ძირის თანხმოვანსა და -**n**-ს შორის ჩაისმის ნახევარხმოვანი (schwa), რათა გაადვილოს თანხმოვანთკომპლექსის გამოთქმა; იგი ჩვეულებრივ გამოითქმის როგორც /**i**/, /**ı**/, ლაბიალური თანხმოვნების შემდეგ კი როგორც /**u**/. დაბალი ხმოვანი + C ფუძეები ინარჩუნებენ დაბალ ხმოვანს მოდალურ ფუძეში.

	PFV-ფუძე	IPFV- მოკლე ფუძე	IPFV- გრძელი ფუძე	მოდალური ფუძე
z-ტიპი	C	-	C-*z*	C-*n*
l-ტიპი	C	-	C-*l*	C-*n*
r-ტიპი	C დაბალი V-C Cu დაბალი V-Cu	C დაბალი V-C Ci დაბალი V-Ci	C-r დაბალი V-C Ci-r დაბალი V-Ci-r	C-n დაბალი V-C-*n* C-n დაბალი V-C-*n*
n-dä-ტიპი	C-n დაბალი V-C-*n*	C-n დაბალი V-C-*n*	C-n-*dä* დაბალი V-C-*n*-*dä*	C-n დაბალი V-C-*n*

მოდალური ფუძე <>*q'i, kui* „ყოფნა, გახდომა“ და <>*χi, kui* „წასვლა (მიზნისკენ)“ იწარმოება **a-** სუპლეტური ძირიდან –**n** სუფიქსის დართვით:

ნატვრითი 1	*an-koa*
ნატვრითი 2	*an-koet^{h}koa*
უარყ. ბრძანებითი 2SG	*an-k^{h}u<>i*
უარყ. ბრძანებითი 2PL	*an-k^{h}uvun*
უარყ. იუსივი	*an-s<>i*
პოტენციალი	*an-q'i, an-kui*
კონვერბი 'მანამდე/ვიდრე'	*an-t'ini*

<>ʁi, kui ზმნების მოდალური ფუძე ასევე იწარმოება სუპლეტური ფუძისგან, თუმცა, ვინაიდან მახვილი ზმნისწინურ კონსტრუქციებში პირველ მარცვალზე მოდის, **an**-ზე აღარ ეცემა მახვილი, რის შედეგადაც ხორციელდება ხმოვნის ნაწილობრივი რედუქცია {schwa + n}. რაც შეეხება სხვა ტიპის ზმნებს, ზემოაღნიშნული მოდალური ფორმების წარმოება ორ ჯგუფად იყოფა: ერთი ჯგუფი ეყრდნობა შესაბამისი ზმნის მოდალურ ფუძეს, რომელიც კომბინაციაში შედის სუფიქსებთან (მაგ. ბრძანებითის უარყოფითი ფორმა), მეორე ჯგუფი კი იქმნება **an**-ფორმების რედუცირებული ვარიანტებით, რომლებიც რეგრამატილიზებულია სუფიქსების სახით (მაგ. პოტენციალი).

ძირეული თანხმოვნები მათი შესაბამისი მნიშვნელობით შეიძლება დადასტურდეს სხვადასხვა ტიპის ზმნებში. ამასთან, მათი ძირითადი მნიშვნელობა შენარჩუნებულია, მაგრამ თავად ზმნის ტიპისა და გარკვეულ ზმნისწინის კომბინაციის მეშვეობით განიცდის სპეციფიკაციას. ზმნის ძირის თანხმოვნების შესწავლა (მათ შორის, განსხვავებული მნიშვნელობისა და ეტიმოლოგიის მქონე ომონიმების გარჩევა), ასევე მათი ამოცნობა ზმნის სხვადასხვა ტიპებში, წინამდებარე ნაშრომის კვლევის ობიექტს წარმოადგენს.

კვლევის ამ ეტაპზე გამოვლინდა დისტრიბუციის შემდეგი სურათი:

ძირი	მნიშვნელობა	*z*-ტიპი	*l*-ტიპი	სუპლეტური ტიპი	*r*-ტიპი	*ndä*-ტიპი
c'	გრძნობა		✓		✓	
f / š	შერევა		✓		✓	
k	დაწვა	✓			✓	
k^{h}	სმენა		✓		✓	
k^{h}	შეკრება				✓	✓

q	გაცივება	✓			✓	
q'	გაშრობა	✓			✓	
q'	გახდომა, გამოწვევა			✓	✓	
qˣ	ქსოვა, ჩახლართვა, ჩაჭედვა		✓		✓	✓
qˣ	ინსტრუმენტზე დაკვრა		✓		✓	
qˣ	დაფლეთა				✓	✓
t'	დაბადება, გაჩენა		✓		✓	
x	მოხარშვა, მომზადება		✓		✓	
χ	წასვლა, მისვლა			✓	✓	✓

როგორც საკითხის მიმოხილვა გვიჩვენებს, ყველა გამოკვლეული ძირის თანხმოვანი გვხვდება მინიმუმ **r**-ტიპში. მონაცვლეობის ყველაზე მაღალი მაჩვენებელი დადასტურებულია **l**-ტიპსა და **r**-ტიპს შორის. ი̆შვიათად გვხვდება მონაცვლეობა **z**-ტიპსა და **r**-ტიპს, **n-dä**-ტიპსა და **r**-ტიპს, ისევე როგორც **l**-ტიპსა და **n-dä**-ტიპს შორის. მონაცვლეობა **z**- და **l**-ტიპებს, ასევე **z**- და **n-dä**-ტიპებს შორის (ჯერ) არ არის დამოწმებული. საკითხი შემდგომ კვლევას მოითხოვს მონაცვლეობის სრული სურათის შესაქმნელად და მართებული დასკვნების გამოსატანად, ანუ დასაშვები ან დაუშვებელი მონაცველობის გამოსავლენად.

გარკვეული ძირის თანხმოვნების პოვნიერება ზმნის ერთზე მეტ ტიპში მხარს უჭერს ჰიპოთეზას, რომ მორფემები, რომლებიც დღეს იმპერფექტივის დროის მარკერებად ან ფუძის მავრცობებად გამოიყენებიან, ენის უფრო ადრეულ ეტაპზე დერივაციული აფიქსები უნდა ყოფილიყო. აღსანიშნავია, რომ იგივე ელემენტები, ანუ სუფიქსები **-r, -n, -z** და **-l**, ასევე ობიექტის მრავლობითი რიცხვის აღმნიშვნელ სუფიქსებად გვევლინებიან. შეგვიძლია ვივარაუდოთ, რომ პირველ ეტაპზე ობიექტების სიმრავლე და მოვლენების ან აქტივობების სიმრავლე ერთი და იგივე აფიქსებით აღინიშნებოდა. მოვლენების ან აქტივობების სიმრავლე შესაძლოა დაიყო სხვადასხვა გამოვლინებად, როგორიცაა ჩვეული, ჰაბიტუალური განმეორებადობა ან უწყვეტობა. ამ პროცესის ბოლო ეტაპზე, რომელიც დღეს არის წარმოდგენილი, მოქმედების სახის გადმომცემი სუფიქსები შესაძლოა რეგრამატიკალიზებული იყოს იმპერფექტივების სუფიქსებად.