

Unstable consonants in Northern Akhvakh verb morphology, a case of emerging fusional morphology

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1. Introduction

Akhvakh (*aš^waī mič'i*, Russian *axvaxskij jazyk*) belongs to the Andic (sub-)branch of the Northeast Caucasian (or Nakh-Daghestanian) family. According to Magomedova & Abdulaeva 2007, Akhvakh has approximately 20 000 speakers. Four dialects are traditionally recognized. One of them is designated as Northern Akhvakh, whereas the other three are grouped under the label of Southern Akhvakh.

Northern Akhvakh is spoken in four villages of the Axvaxskij Rajon in the western part of Daghestan (Tadmagitl', Lologonitl', Kudijab-Roso, and Izani), in recent settlements in the lowlands of Daghestan, and in Axaxdərə near Zaqatala (Azerbaijan). The variety of Akhvakh spoken in Axaxdərə does not differ significantly from the varieties of Northern Akhvakh spoken in the Axvaxskij Rajon, and it would not be justified to treat it as a separate dialect. The Southern Akhvakh dialects are spoken in one village each (Cegob, Tljanub and Ratlub), all situated in the Šamil'skij Rajon of Daghestan.

Magomedbekova 1967, Kibrik 1985 and Magomedova & Abdulaeva 2007 are the main references on Akhvakh. The analysis proposed in this paper is based on field work carried in Axaxdərə and Tadmagitl', and on the data provided by the Akhvakh-Russian dictionary (Magomedova & Abdulaeva 2007).

The paper is organized as follows. Section 2 provides a general sketch of the verbal inflection of Northern Akhvakh. Section 3 gives additional precisions on suffixal inflection. In section 4, the notion of unstable consonant is defined, and the rules accounting for the interaction between vowels put into contact by the deletion of an unstable consonant are described. Section 5 describes the division of verbal suffixes into those that trigger the maintenance of unstable consonants, and those that trigger their deletion. Sections 6 to 11 review subsets of verbs including unstable consonants classified according to the nature of the consonant and of the preceding vowel. Section 12 examines two particular cases, and Section 13 concludes with a few comments about the historical significance of unstable consonants.

2. A sketch of Northern Akhvakh verbal inflection

2.1. Prefixes and suffixes in verbal inflection

Akhvakh verbs differ from all other categories by the fact that they always show an overt inflectional suffix: verbal inflection includes no form that would coincide with the bare stem,

or whose inflection would not involve suffixation. There is however a distinction between two classes of verbs: those who obligatorily include a prefixal slot, and those devoid of it.

Suffixal inflection is identical for all verbs and expresses TAM, evidentiality/mirativity, polarity, finiteness, and class agreement with the absolutive argument. Person variations are found in one tense only (the perfective positive), and follow a typologically rare pattern for which I propose the term ‘assertive agreement’. For a detailed presentation of this aspect of the verbal system of Akhvakh, see Creissels 2008a & 2008b.

The prefixal inflection of the verbs that take inflectional prefixes is entirely independent from the distinctions of TAM, evidentiality/mirativity, polarity or finiteness expressed by suffixes. Prefixes invariably express class agreement with the absolutive argument.

Northern Akhvakh has five agreement classes: human singular masculine (M), human singular feminine (F), non-human singular (N), human plural (HPL), and non-human plural (NPL).

2.2. Semantic distinctions in the suffixal inflection of verbs

2.2.1. Independent verb forms

The synthetic verb forms that have the ability to head independent clauses are characterized by the following paradigm of suffixes (or combinations of suffixes):¹

(1) *Inflectional suffixes of independent verb forms*

- PF¹ (perfective¹): HPL *-iri*, other classes *-ari* or *-eri*
- PF² (perfective²): HPL *-idi*, other classes *-ada(-CL)*
- PF.NEG (perfective negative): *-ila (-CL)*
- IPF¹ (imperfective¹): *-iri*
- IPF² (imperfective²): *-ida(-CL)*
- IPF.NEG¹ (imperfective negative¹): *-iki*
- IPF.NEG² (imperfective negative²): *-ika(-CL)*
- IND PST (indirective past): M *-u-wudi*, F *-i-wudi*, N *-a-wudi* or *-e-wudi*, NPL *-ari-wudi* or *-eri-wudi*
- IND PST.NEG (indirective past negative): M *-il-u-wudi*, F *-il-i-wudi*, N *-il-a-wudi* or *-il-e-wudi*, NPL *-il-ari-wudi* or *-il-eri-wudi*
- MIR (mirative): M *-u-wa*, F *-i-wa*, N *-a-wa*, HPL *-aji*, NPL *-ari-wa*
- MIR.NEG (mirative negative): M *-uš-u-wa*, F *-uš-i-wa*, N *-uš-a-wa*, HPL *-uš-aji*, NPL *-uš-ari-wa*
- POT (potential): M/N *-u-wa*, F *-i-wa*, HPL *-oji*, NPL *-uri-wa*
- IMP (imperative): *-a*
- PROH (prohibitive): *-uba*
- OPT (optative): *-a-l̄’a*

¹ In cases of allomorphic variation, whenever possible I have selected a single quotation form that can be analyzed as a relatively direct representation of the underlying form. Variants are however mentioned in cases of allomorphic variations whose analysis is still problematic at this stage of the investigation. (-CL) signals forms characterized by the optional addition of class agreement markers that may, either occur as separate suffixes, or merge with the last vowel of the preceding suffix.

– OPT.NEG (optative negative): *-uba-l̄'a*

Additional semantic distinctions are expressed by analytic verb forms in which the auxiliary function is assumed by the copula *g<o>di*, the verb *b-ik'-urula* 'be', or the verb *m-ič-unula* 'be found'.

The list of independent synthetic verb forms given in (1) calls for the following remarks:

- a. The forms labeled 'perfective¹' and 'perfective²' carry distinctions in the involvement of the assertor (i.e., the speaker in assertive clauses, the addressee in questions) in the event (s)he is referring to: in assertions, PF² is typically used with transitive verbs involving a 1st person A, or intransitive verbs representing controllable events involving a 1st person S, whereas in questions, PF² is typically used with transitive verbs involving a 2nd person A, or intransitive verbs representing controllable events involving a 2nd person S (see Creissels 2008a & 2008b for more details). This distinction is neutralized in the negative.
- b. The distinctions PF¹ vs. PF² and IPF¹ vs. IPF² seem to be historically related, since the PF¹ and IPF¹ suffixes have in common the ending *ri*, contrasting with *da* common to the PF² and IPF² suffixes. Moreover, PF² and IPF² share the possibility to be used as participles, whereas PF¹ and IPF¹ are strictly finite verb forms. However, functionally, the choice between IPF¹ and IPF² in their use as independent verb forms clearly puts into play aspecto-modal distinctions, and has nothing to do with distinctions in assertor's involvement, or more generally with person distinctions: both forms can express a habitual meaning, but there is a clear tendency to prefer IPF² as the marker of habitual aspect, whereas IPF¹ is used in modal contexts in which it is impossible to substitute IPF² for it.
- c. INDPST (past of indirect knowledge) is typically used to refer to events known by hearsay. This form is the basic form used in narratives. It occurs in inferential contexts too, but this use is much less common. INDPST has no HPL form, and in contexts in which an HPL form of this tense could be expected to occur, Akhvakh speakers use the form of the perfect (an analytic tense consisting of the general converb HPL of the auxiliated verb and the copula in auxiliary function).
- d. I use the label 'mirative' for a verb form encountered mainly (but not exclusively) in questions. This form is particularly common (in fact, almost obligatory) in *why*-questions, which suggests analyzing it as expressing surprise.

2.2.2. Participles

Northern Akhvakh has four participles. Each of them is characterized by a stem homonymous with one of the independent verb forms listed above, and the distinction between the four participles can be described as the combination of two binary distinctions *perfective* vs. *imperfective* and *positive* vs. *negative*. It is interesting to observe that the four independent verb forms coinciding with participles are precisely those characterized by the optional suffixation of a class marker: perfective², perfective negative, imperfective², and imperfective negative². On the participles of Northern Akhvakh, see Creissels In press.

2.2.3. *Dependent verb forms*

Strictly dependent verb forms include an infinitive, a general converb, a progressive converb, and several specialized converbs expressing various semantic types of adverbial subordination. On the converbs of Northern Akhvakh, see Creissels Submitted.

Northern Akhvakh also has a verbal noun, which however is rarely found with dependents treated like dependents of a verbal head. Contrary to the verbal noun of many other Caucasian languages, the verbal noun of Northern Akhvakh tends to behave in all respects like a noun rather than like a form having the external syntax of a noun but the internal syntax of a verb.

2.3. Class agreement in suffixal inflection

Class agreement manifests itself both in prefixes and suffixes, but the suffixal expression of class agreement interacts with the other distinctions expressed via suffixes: depending on the individual tenses, suffixal class agreement may be obligatory, optional, or impossible. In addition to that, the class marks included in suffixes are often the same for two or more classes. Consequently, class agreement of prefixless verbs is often ambiguous, or even totally absent, depending on the other inflectional characteristics of verb forms.

A classification of AD Akhvakh verb forms according to the presence / absence of suffixed class marks is given in (2). In this chart, verb forms are divided into those that have the ability to head independent clauses, and those that are found in clauses involved in complex constructions only.

(2) *Suffixed class agreement markers in Akhvakh verb forms*

	Independent verb forms	Dependent verb forms
a. Suffixes expressing obligatory class agreement with more than two possible values	potential indirective past mirative	general converb
b. Suffixes including an obligatory <i>HPL</i> vs. <i>other classes</i> distinction, and compatible with additional suffixes optionally expressing class agreement with other classes	perfective positive ² imperfective positive ²	
c. Suffixes including no obligatory class agreement, but compatible with optional class marks	perfective negative imperfective negative ²	progressive converb simulative converb
d. Suffixes expressing an obligatory <i>HPL</i> vs. <i>other classes</i> distinction, but without the possibility of optional class agreement with other classes	perfective positive ¹	conditional converb posterior converb inceptive converb

e. Suffixes that never include marks of class agreement	imperfective ¹	infinitive
	imperfective negative ¹	verbal noun
	imperative	verbal locative
	prohibitive	simultaneous converb
		immediate converbs
		imminent converb
		anterior converb
		limitative converb
		concessive converb
		gradual converb
		explicative converb
	purposive converb	

It can be seen from this chart that there is no simple relationship between the behavior of Northern Akhvakh verb forms with respect to class agreement with the absolutive argument, and their ability to head independent clauses.

2.4. Class agreement prefixes of verbs

The verbs of Northern Akhvakh divide into two phonologically and semantically arbitrary morphological classes, those having an initial slot for gender-number concord, and those devoid of it. The verbs belonging to the first subset always begin with a gender-number prefix indexing the absolutive argument, those belonging to the second one never take such a prefix. The two classes are roughly of equal importance, and there seems to be no evidence of a historical explanation of this situation, which is found in the other Andic languages too.

Contrary to other Daghestanian languages showing a similar division of verbs into two classes with respect to the presence of agreement prefixes, in Northern Akhvakh, prefixal class agreement is not limited to verb stems beginning with a vowel, and each class prefix has two phonologically conditioned allomorphs, as schematized in the following chart:

(3) *The two paradigms of class markers prefixed to verbs*

	/ – C	/ – V
M	<i>u-</i>	<i>w-</i>
F	<i>i-</i>	<i>j-</i>
N	<i>o-</i>	<i>b- ~ m-</i>
HPL	<i>o-</i>	<i>b(a)- ~ m(a)-</i>
NPL	<i>e-</i>	<i>r-</i>

However, the proportion of verbs showing prefixal agreement is considerably higher among those whose stem begins with a vowel than among those with a consonant-initial stem. Only two verbs can unambiguously be analyzed as having a consonant-initial stem preceded by class prefixes: *oturula* ‘let, send’ (root |*-t-*|) and *oḡurula* ‘give’ (root |*-ḡ-*|). *ūkunula* ‘eat (intr.)’ also involves a consonantal root preceded by vocalic class prefixes, since an F form *īkunula* and an NPL form *ēkunula* are attested, but the F and NPL forms of this verb are not used in a fully consistent way, and the N/HPL form **ōkunula* that could be expected to occur

does not seem to be attested. In a strictly synchronic perspective, this variation can be described by positing two allomorphs of this verb root: | $\sim k$ -| ~ | $\tilde{u}k$ -|, but it is easier and more natural to interpret it dynamically as the generalization of the M form to other classes, more advanced in some classes (N, HPL) than in others (F, NPL).

The interaction of agreement prefixes with vowel-initial stems can be summarized as follows:

- Stem-initial *i* is deleted in contact with the *a* of the HPL prefix *ba*-, whereas the *a* of the HPL prefix *ba*- is deleted in contact with other vowels.²
- In contact with the M prefix *w*-, *i* and *e* are converted into *u* and *o* respectively.
- In contact with the F prefix *j*-, *u* and *o* are converted into *i* and *e* respectively.
- Combined with VC^w roots, in addition to its influence on the initial vowel, the M prefix *w*- ‘absorbs’ the labiality of the subsequent consonant.
- With verb stems including a nasal vowel, the *b* of the N and HPL prefixes is converted into *m*, and the nasal vowel loses its distinctive nasality (phonetically, it is generally perceived as weakly nasal).³

Akhvakh also has a limited number of verbs synchronically analyzable as having discontinuous roots with an infixed agreement mark: $g\circ\tilde{c}'urula$ | $g\dots\tilde{c}'$ -| ‘hit’, $g\circ\tilde{c}'urula$ | $g\dots\tilde{c}'$ -| ‘reach’, $g\circ\tilde{c}'urula$ | $g\dots\tilde{c}'$ -| ‘wake’, $a\cdot b\cdot a\tilde{s}urula$ | $a\dots a\tilde{s}^w$ -| ‘shake’, $a\cdot b\cdot a\chi urula$ | $a\dots a\chi$ -| ‘swell’, $a\cdot b\cdot a\tilde{z}urula$ | $a\dots a\tilde{z}^w$ -| ‘attach’, and $(\tilde{b}a)d\cdot i\cdot k'urula$ | $(\tilde{b}a)d\dots k'^w$ -| ‘sit’. Diachronically, the first segment of such discontinuous roots is probably a frozen preverb. However, apart from $(\tilde{b}a)d\cdot i\cdot k'urula$, whose two segments are quite obviously cognate with the adverb *ba*de ‘on the ground’ and the verb root | $\tilde{i}k'^w$ -| ‘be’, there seems to be no concrete evidence of possible etymologies for these discontinuous verb roots. Some speakers also replace $\tilde{l}'unula$ | $\tilde{l}'\tilde{u}(h)$ -| ‘sleep’ by $\tilde{l}'\tilde{v}k'unula$ formed on the discontinuous root | $\tilde{l}'\dots k'^w$ -|. We will return to this in section 8, since $\tilde{l}'unula$ | $\tilde{l}'\tilde{u}(h)$ -| belongs to the set of verbs whose morphological behavior is analyzed in this article.

² Note that the HPL form could equally be predicted by positing that, with stems beginning with *a*, the prefixal *a* is maintained, and the *a* belonging to the stem is deleted.

³ This statement about the influence exerted by nasal vowels on prefixes including a *b* calls for some comments. Northern Akhvakh has two oral consonants alternating with nasal consonants in some conditions: *b* (alternating with *m*) and *r* (alternating with *n*), but these two nasality alternations do not occur in the same contexts and cannot be analyzed in the same way. *m* and *b* have a distribution with respect to nasal vowels that allows treating *m* as an allophone of *b* in contact with an underlyingly nasal vowel. The crucial point is that no nasality contrast can be observed with vowels adjacent to [b] or [m]. Starting from that, the morphological behavior of *b* and *m* does not necessitate any specific statement if the phonology includes a rule of nasality absorption according to which, in contact with an underlyingly nasal vowel, /b/ is represented by its allophone [m], whereas the nasal vowel is partially or entirely de-nasalized. Things are different in the case of *r*. [r] in word-initial position can equally be followed by oral and nasal vowels, *r*- as a prefix does not nasalize, and there are minimal pairs such as *rac'e* ‘scar’ vs. *rac'e* ‘asking’. The alternation between *r* and *n* observed in suffixes cannot therefore be attributed to a general allophony rule, and must be analyzed as a neutralization of the phonemic contrast between *r* and *n* occurring in \tilde{V} — context, but not in — \tilde{V} context.

3. Phonological processes in the suffixal inflection of verbs

3.1. Introductory remarks

In Akhvakh, verbal stems cannot constitute words by themselves; they obligatorily combine with suffixes, and no verbal suffix has a zero allomorph. Without any exception, the suffixes that can attach to verbal stems begin with a vowel. As a rule, verbal stems end with a consonant, and there is no verbal stem that should be analyzed as having only allomorphs ending with a vowel. However, the final consonant of some stems is systematically deleted in contact with some suffixes, and when this consonant is deleted, the last vowel of the stem merges with the initial vowel of the suffix. This constitutes the main topic of this article, developed in sections 4 to 12.

In addition to that, labiality alternations characterize stems underlyingly ending with C^w – section 3.3, and suffixes including an r may undergo nasalization, whereby r is converted into n under the influence of a nasal vowel belonging to the stem – section 3.2.

3.2. Nasality alternations

As already explained in the presentation of prefixal inflexion (see note 3), Akhvakh has two nasalizable consonants (b and r), which however undergo nasalization in very different conditions. b is affected by nasalization in the prefixal inflection of verbs, and more generally, the nasalization of b can be analyzed as the result of a general phonological rule according to which b adjacent to a nasal vowel is represented by its allophone m and ‘absorbs’ the nasality of the vowel. By contrast, the nasalization of r cannot be attributed to a general phonological conditioning, and r - as a class prefix does not undergo nasalization. Things are different in verb suffixal inflection. b never constitutes the initial segment of a suffix, and consequently never occurs in contact with a nasal vowel belonging to the stem that could trigger the allophony rule responsible for the appearance of m . By contrast, r included in suffixes can be converted into n without necessarily being adjacent to the nasal element responsible for this process.

It is also worth mentioning that the nasalization of r in verbal suffixes may be optional or incomplete. No verbal suffix begins with a consonant, and therefore, in principle, r is not in immediate contact with vowels triggering nasalization. If no additional process occurs, the nasalization of r may remain incomplete, or not occur at all. For example, with verb roots including a nasal vowel, the infinitive suffix $-urula$ is often realized [uɾ̃uɾ̃a], i.e., with a nasal flap that cannot be clearly categorized as r or n , and this hesitation in the perception of the infinitive suffix is often reflected in the transcriptions of the Akhvakh-Russian dictionary. The only cases of obligatory conversion of r into n are when the deletion of the stem-final consonant puts the r into contact with a vowel resulting from the merging of a nasal vowel belonging to the root with the first vowel of the suffix (as in $\bar{q}'\text{-}\bar{o}nula$ ‘eat’ < $|\bar{q}'\bar{a}(b)\text{-}urula|$: if the r of the suffix did not absorb nasality, this form would be $*\bar{q}'\bar{o}rula$, but here, the nasality is obligatorily transferred from the vowel to the r). Interestingly, in similar conditions, b does not nasalize: the prohibitive of the same verb is $\bar{q}'\bar{o}ba$ < $|\bar{q}'\bar{a}(b)\text{-}uba|$, not $*\bar{q}'\bar{o}ma$, which means that the rule of nasal absorption affecting b requires adjacency with a nasal vowel in the underlying representation.

3.3. Labiality alternations

The distinction between verb roots with a labial ending C^w and verb roots with a non-labial ending C can be illustrated by the minimal pair $|-i\check{s}-|$ ‘win’ vs. $|-i\check{s}^w-|$ ‘return’. However, the distinction disappears if the vowel preceding the labialized consonant is labialized under the influence of the M prefix $w-$, or if suffixation puts the labialized consonant in contact with a labial vowel, as illustrated in (4). Note in particular that root-final labiality is ‘absorbed’ by the infinitive suffix $-urula$, and is therefore not apparent in the quotation form of verbs.

(4) *Labiality neutralization illustrated by the pair $|-i\check{s}-|$ ‘win’ vs. $|-i\check{s}^w-|$ ‘return’*

a. *Forms in which the distinction is maintained*

$b-i\check{s}-ari$	‘win, PF ¹ , N’	$b-i\check{s}^w-ari$	‘return, PF ¹ , N’
$b-i\check{s}-ida$	‘win, IPF ² , N’	$b-i\check{s}^w-ida$	‘return, IPF ² , N’
$b-i\check{s}-a$	‘win, IMP, N’	$b-i\check{s}^w-a$	‘return, IMP, N’
$b-i\check{s}-e(he)$	‘win, CVB, N’	$b-i\check{s}^w-e(he)$	‘return, CVB, N’

b. *Forms in which the distinction is neutralized under the influence of a suffix*

$b-i\check{s}-uwa$	‘win / return, POT, N’
$b-i\check{s}-urula$	‘win / return, INM, N’
$b-i\check{s}-uba$	‘win / return, PROH, N’

c. *Forms in which the distinction is neutralized under the influence of a prefix*

$w-u\check{s}-ari$	‘win / return, PF ¹ , M’
$w-u\check{s}-ida$	‘win / return, IPF ² , M’
$w-u\check{s}-a$	‘win / return, IMP, M’

Note also that, in addition to the systematic cases of neutralization, labial elements fulfilling the conditions to be realized can be deleted, and some verbs whose stem ends with a labialized consonant show a marked tendency to delabialization. This concerns in particular $bik'urula$ (root $|-ik^w-|$) ‘be’, and also (although to a lesser extent) $harigurula$ (root $|harig^w-|$) ‘see’.

4. Unstable consonants and vowel merging

4.1. The notion of unstable consonant

As already stated, the verbal stems of Northern Akhvakh obligatorily end with a consonant, and in general, the only alternation that can modify the stem-final consonant is the delabialization of labialized consonants presented in section 3.3. However, the stem of some verbs ends with a consonant which is maintained in combination with some suffixes only, and

is systematically deleted with other suffixes. Such stems are therefore characterized by an alternation between a *full variant* (in which the unstable final consonant is maintained) and a *reduced variant* (in which it is deleted). Suffixes triggering the maintenance of unstable consonants simply attach to the full form of such stems without triggering any particular morphophonological process, whereas the initial vowel of suffixes triggering the deletion of unstable consonants systematically merges with the last vowel of the stem, as illustrated by ex. (5) to (8).⁴

- (5) a. |ča(b)-| ‘wash’ + |-a| IMP → čab-a ‘Wash!’
 b. |ča(b)-| ‘wash’ + |-uba| PROH → ča-uba
 → č-ōba ‘Don’t wash!’
- (6) a. |eqeda(j)-| ‘look for’ + |-a| IMP → eqedaj-a ‘Look for it!’
 b. |eqeda(j)-| ‘look for’ + |-uba| PROH → eqeda-uba
 → eqed-ōba ‘Don’t look for it!’
- (7) a. |čʷi(b)-| ‘plant’ + |-a| IMP → čʷib-a ‘Plant it!’
 b. |čʷi(b)-| ‘plant’ + |-uba| PROH → čʷi-uba
 → čʷ-ūba ‘Don’t plant it!’
- (8) a. |gʷi(j)-| ‘do’ + |-a| IMP → gʷij-a ‘Do it!’
 b. |gʷi(j)-| ‘wash’ + |-uba| PROH → gʷi-uba
 → g-ūba ‘Don’t do it!’

Note that, when segmenting surface forms resulting from this merging process, I have considered that the initial vowel of the suffix ‘absorbs’ the preceding vowel, but this decision is arbitrary. I am aware of no decisive evidence that forms resulting from this process should be segmented in this way rather than considering that the suffix-initial vowel is ‘absorbed’ by the stem. In fact, it can be argued that in such forms, the stem and the suffix overlap in such a way that no simple segmentation can straightforwardly account for their structure.

4.2. Vowel merging triggered by the deletion of stem-final unstable consonants

The following rules summarize the interaction between vowels put into contact by the deletion of unstable consonants:

⁴ In the presentation of these examples, forms such as ča-uba must not be viewed as optional variants (such forms do not exist), but as intermediary steps in a derivation process (in an OT analysis, they would have the status of potential outputs ruled out because of a constraint hierarchy in which the ban against V¹V² sequences stands higher than the faithfulness constraint).

(9) *Vowel merging rules*

$a + u$	$\rightarrow \bar{o}$	$i + u$	$\rightarrow \bar{u}$
$a + i$	$\rightarrow \bar{e}$	$i + i$	$\rightarrow \bar{i}$
$a + o$	$\rightarrow \bar{o}$	$i + o$	$\rightarrow \bar{o}$
$a + e$	$\rightarrow \bar{a}$	$i + e$	$\rightarrow \bar{e}$
$a + a$	$\rightarrow \bar{a}$	$i + a$	$\rightarrow \bar{e}$

In conformity with the general behavior of long vowels in Northern Akhvakh (which are not strictly speaking long vowels, but rather *potentially long* vowels), the vowel length noted here is not always realized. Vowels resulting from merging triggered by the deletion of a stem-final unstable consonant can be realized as long vowels, and their length is generally apparent in careful speech, but not always, and the distinction shows a marked tendency to be neutralized in normal speech, with the exception of a few words which, for reasons that are not clear to me, seem to resist this tendency.

4.3. Inventory and predictability of unstable consonants

The only stem-final consonants that may undergo deletion are *b*, *j*, *h*, and *ʔ*, and they can only be preceded by *a* or *i*. The distribution of the full and reduced allomorphs of the stem, which is identical for all verbs showing this type of alternation, will be described in section 5. The question addressed in this section is that of the predictability of unstable consonants: do *b*, *j*, *h*, and *ʔ* always behave as unstable consonants, do they behave as unstable consonants in determined configurations, or is the stability/unstability of *b*, *j*, *h*, and *ʔ* to be considered as a lexical specification attached to the individual verb stems?

In the case of *h*, it is difficult to put forward any generalization, since there are only three verb stems ending with *h* in the Akhvakh-Russian dictionary. Two of them ($|\check{z}ah-$ ‘get cold’ and $|\bar{c}uh-$ ‘get furious’ end with a stable *h*, which means that $|\bar{l}ih-$ ‘sleep’ (see ...) constitutes the only attestation of unstable *h*.

The case of *ʔ* is similar, since Akhvakh has just two verb stems ending with *ʔ*, one with a stable *ʔ* ($|-aʔ-$ ‘speak’), the other with an unstable *ʔ* ($|\bar{a}ʔ-$ ‘go’). The case of $|\bar{a}ʔ-$ ‘go’ will be examined separately in section 7.2, since this verb shows an irregularity it shares with no other Akhvakh verb.

In the case of *b* and *j*, no clear regularity can be found either, but the number of attestations of stable *b* or *j* is considerably lower than the number of attestations of unstable *b* or *j*. The imbalance is particularly striking for *j*, since Northern Akhvakh has a very high number of polysyllabic verb stems ending with $-a(j)$ – see 6.6.4 for an explanation, whereas stable *j* is found in four monosyllabic stems only: $|\bar{b}uj-$ ‘bellow’, $|\bar{w}aj-$ ‘scream’, $|\bar{b}ij-$ ‘bristle’, and $|\bar{x}ij-$ ‘smile’.

In the case of *b*, the imbalance is not so striking, but there is a relatively high number of stems ending with an unstable *b* (see section 6), whereas stable *b* is attested in three roots only: $|\bar{i}hab-$ ‘scream’, $|\bar{l}ab-$ ‘get dry’, and $|\bar{s}ib-$ ‘drizzle’.

5. Maintenance and deletion of unstable consonants

The division of verbal suffixes into those triggering the maintenance of unstable consonants and those triggering their deletion is synchronically arbitrary in the sense that it does not seem to be predictable from any phonological or semantic criterion.

5.1. Suffixes triggering the maintenance of unstable consonants

When a verbal stem ending with an unstable consonant is immediately followed by one of the following suffixes, the full allomorph is selected (i.e., the unstable consonant is maintained) irrespective of the class of the absolutive argument:

- imperative *-a*
- conditional converb HPL *-ij-ala*, other classes *-ala*
- verbal noun *-e* (*-e-ro-* in combination with case suffixes)
- concessive converb *-erokona* (and its variants)⁵
- explicative converb *-erogu*⁶
- causative *-a(j)-*

The corresponding forms of *l̄'ūrula* (root |l̄'i(b)-|) ‘dance’ and of *čōrula* (root |č'a(b)-|) ‘wash’ are listed in (10). These two illustrations have been selected in order to illustrate the interactions of suffixes with the two vowels that can be found immediately before an unstable consonant (*i* and *a*), in case the unstable consonant is deleted.

(10) *Suffixes triggering the maintenance of the unstable consonants
irrespective of class agreement*

a. *attached to |l̄'i(b)-|*

- IMP *l̄'ib-a*
- COND HPL *l̄'ib-ij-ala*, other classes *l̄'ib-ala*
- CONC *l̄'ib-erokona*
- VN *l̄'ib-e*, oblique stem *l̄'ib-e-ro-*
- EXPLIC *l̄'ib-erogu*
- CAUS *l̄'ib-a(j)-*

⁵ This converb probably originates from the combination of the verbal noun with *-vana* ‘because of’. However, *-vana* normally combines with nouns in the dative case, and the absence of the dative marker *-la* justifies treating *-erokona* as a distinct suffix. Moreover, some speakers use variants of the explicative converb (such as *-alobola*) which suggest that its etymological motivation has been lost.

⁶ Formally, this converb is clearly the relative case of the verbal noun. There are however two reasons for analyzing it as a distinct form. First, its internal syntax is unambiguously of verbal nature, and contrary to the verbal noun, it never shows a tendency to combine with typical noun dependents. Second, its ending is invariably *-erogu*, even for speakers that otherwise show a marked tendency to replace the oblique stem marker *-ro-* typical of the verbal noun by the standard neuter oblique stem marker *-i-*.

b. *attached to* |ča(b)-|

– IMP	<i>čab-a</i>
– COND	HPL <i>čab-ij-ala</i> , other classes <i>čab-ala</i>
– VN	<i>čab-e</i> , oblique stem <i>čab-e-ro-</i>
– CONC	<i>čab-erokona</i>
– EXPLIC	<i>čab-erogu</i>
– CAUS	<i>čab-a(j)-</i>

Note that the causative suffix triggers the maintenance of unstable consonants at the end of the roots it attaches to, but includes an unstable consonant itself, which means that the causative suffix is for example immediately apparent in its full form in the imperative *l'ib-aj-a!* ‘make him/her dance!’, but not in the infinitive *l'ib-ōrula* < *l'ib-a-urula*. It may be useful at this point to mention that the causative suffix is not in Northern Akhvakh the only verbal suffix which is clearly derivational. Northern Akhvakh also has an obligative suffix *-uχ-* (resulting from the grammaticalization of *b-uχ-urula* ‘fall’), with a stable final consonant.

5.2. Suffixes triggering the deletion of unstable consonants in some classes only

When the verbal stem is immediately followed by one of the following suffixes, the maintenance of unstable consonants depends on class agreement with the absolutive argument:

- perfective positive¹ and perfective positive²: unstable consonants are maintained with HPL agreement (suffixes *-iri* – PF¹ – and *-idi* – PF²), but not in the other classes (suffixes *-ari* or *-eri* – PF¹ – and *-ada(-CL)* – PF²);
- potential: unstable consonants are maintained with HPL agreement (suffix *-oji*), but not in the other classes (suffixes M/N *-u-wa*, F *-i-wa*, NPL *-uri-wa*);
- indirective past: unstable consonants are maintained with N agreement (suffix *-a-wudi* or *-e-wudi*), but not in the other classes (suffixes M *-u-wudi*, F *-i-wudi*, NPL *-ari-wudi* or *-eri-wudi*);
- general converb: unstable consonants are maintained with N or HPL agreement (suffixes *-e(he)* and *-i(he)* respectively), but not in the other classes (M *-o(he)*, F *-e(he)*, NPL *-ere(he)*);⁷
- posterior converb: unstable consonants are maintained with HPL agreement (suffix *-idiṭi*), but not in the other classes (suffix *-adeṭi*).⁸

⁷ With stems ignoring the alternation between a reduced and a full allomorph, the suffix of the general converb has the same form *-e(he)* in classes F and N. However, the F and N variants of this suffix differ in their interaction with unstable consonants, which means that consonant deletion has become here an indirect means of class distinction F vs. N.

⁸ In classes other than HPL, this suffix has the particularity to have allomorphs conditioned by the nature of the stem-final consonant: *-adeṭi* attaches to stems ending with an unstable consonants, whereas stems whose final consonant cannot be deleted take the allomorph *-eṭi*. Historically, the posterior converb results from the coalescence of a sequence consisting of the PF² form of the verb in participle function followed by *ri* ‘moment’ in the essive case (*riṭi*), in a construction whose original meaning was ‘at the moment when V-ing had occurred’ (see Creissels Submitted).

The corresponding forms of *l̄'ūrula* (root |*l̄'i(b)-*|) ‘dance’ and of *čōrula* (root |*ča(b)-*|) ‘wash’ are listed in (11):

(11) *Suffixes triggering the maintenance or deletion of the unstable consonants depending on class agreement*

a. *attached to |l̄'i(b)-*

– PF ¹	HPL	<i>l̄'ib-iri</i>	vs. other classes <i>l̄'ēri</i> < <i>l̄'i-ari</i>
– PF ²	HPL	<i>l̄'ib-idi</i>	vs. other classes <i>l̄'ēda(-CL)</i> < <i>l̄'i-ada(-CL)</i>
– POT	HPL	<i>l̄'ib-oji</i>	vs. M/N <i>l̄'ūwa</i> < <i>l̄'i-uwa</i> , F <i>l̄'īwa</i> < <i>l̄'i-iwa</i> , NPL <i>l̄'ūriwa</i> < <i>l̄'i-uriwa</i>
– INDPST	HPL	<i>l̄'ib-awudi</i>	vs. M/N <i>l̄'ūwudi</i> < <i>l̄'i-uwudi</i> , F <i>l̄'īwudi</i> < <i>l̄'i-iwudi</i> , NPL <i>l̄'ēriwudi</i> < <i>l̄'i-ariwudi</i>
– CVB	N	<i>l̄'ib-e(he)</i>	vs. M <i>l̄'ōhe</i> < <i>l̄'i-ohe</i>
	HPL	<i>l̄'ib-i(he)</i>	F <i>l̄'ēhe</i> < <i>l̄'i-ehe</i> NPL <i>l̄'ēre(he)</i> < <i>l̄'i-ere(he)</i>
– POST	HPL	<i>l̄'ib-idiī</i>	vs. other classes <i>l̄'ēdeī</i> < <i>l̄'i-adeī</i>

b. *attached to |ča(b)-*

– PF ¹	HPL	<i>čab-iri</i>	vs. other classes <i>čāri</i> < <i>ča-ari</i>
– PF ²	HPL	<i>čab-idi</i>	vs. other classes <i>čāda(-CL)</i> < <i>ča-ada(-CL)</i>
– POT	HPL	<i>čab-oji</i>	vs. M/N <i>čōwa</i> < <i>ča-uwa</i> F <i>čēwa</i> < <i>ča-iwa</i> , NPL <i>čōriwa</i> < <i>ča-uriwa</i>
– INDPST	HPL	<i>čab-a-wudi</i>	vs. M <i>čōwudi</i> < <i>ča-uwudi</i> F <i>čēwudi</i> < <i>ča-iwudi</i> , NPL <i>čāriwudi</i> < <i>ča-ariwudi</i>
– CVB	N	<i>čab-e(he)</i>	vs. M <i>čōhe</i> < <i>ča-ohe</i>
	HPL	<i>čab-i(he)</i>	F <i>žāhe</i> < <i>ča-ehe</i> NPL <i>čāre(he)</i> < <i>ča-ere(he)</i>
– POST	HPL	<i>čab-idiī</i>	vs. other classes <i>čādeī</i> < <i>ča-adeī</i>

5.3. Suffixes triggering the deletion of unstable consonants irrespective of class agreement

In contact with suffixes not mentioned in sections 5.1 and 5.2, unstable consonants are deleted irrespective of class agreement. Some examples of inflected forms of *l̄'ūrula* (root |*l̄'i(b)-*|) ‘dance’ and of *čōrula* (root |*ča(b)-*|) ‘wash’ in which the unstable consonant is never apparent are given in (12):

(12) *Suffixes triggering the deletion of the unstable consonants
irrespective of class agreement*

a. *attached to |ĭ'i(b)-|*

– PF.NEG	<i>ĭ'ĭla(-CL)</i>	< <i>ĭ'i-ĭla(-CL)</i>
– IPF ¹	<i>ĭ'iri</i>	< <i>ĭ'i-iri</i>
– IPF ² HPL	<i>ĭ'idi</i>	< <i>ĭ'i-idi</i>
	other cl. <i>ĭ'ida</i>	< <i>ĭ'i-ida</i>
– PROH	<i>ĭ'uba</i>	< <i>ĭ'i-uba</i>
– INF	<i>ĭ'urula</i>	< <i>ĭ'i-urula</i>
	etc.	

b. *attached to |č'a(b)-|*

– PF.NEG	<i>č'ĕla(-CL)</i>	< <i>č'a-ĭla(-CL)</i>
– IPF ¹	<i>č'eri</i>	< <i>č'a-iri</i>
– IPF ² HPL	<i>č'edi</i>	< <i>č'a-idi</i>
	other cl. <i>č'eda</i>	< <i>č'a-ida</i>
– PROH	<i>č'oba</i>	< <i>č'a-uba</i>
– INF	<i>č'orula</i>	< <i>č'a-urula</i>
	etc.	

6. Types of stems ending with unstable consonants

6.1. Verb stems ending with an unstable *b* preceded by *i*

This configuration is found in verbs with a monosyllabic non-derived stem.

(13) *Verb stems ending with i(b)*

<i>č'urula</i>	č'i(b)-	‘sow, plant’
<i>ħurula</i>	ħi(b)-	‘drink’
<i>lurula</i>	li(b)-	‘be afraid’
<i>l'urula</i>	l'i(b)-	‘flatten’
<i>ĭ'urula</i>	ĭ'i(b)-	‘dance’
<i>q'urula</i>	q'i(b)-	‘solidify’

6.2. Verb stems ending with an unstable *j* preceded by *i* or *ĩ*

This configuration is found in verbs with a monosyllabic non-derived stem:

(14) *Verb stems ending with an unstable j preceded by i or ĭ*

a. *verb stems ending with i(j)*

<i>gūrULA</i>	g ^w i(j)-	‘do’
<i>hūrULA</i>	h ^w i(j)-	‘blow, sing’
<i>ḅūrULA</i>	ḅ ^w i(j)-	‘speak’
<i>qūrULA</i>	q ^w i(j)-	‘sprinkle’
<i>ṣūrULA</i>	ṣ ^w i(j)-	‘incite a dog to attack’
<i>tūrULA</i>	t ^w i(j)-	‘spit’
<i>χūrULA</i>	χ ^w i(j)-	‘fall (leaves)’

b. *verb stems ending with ĭ(j)*

<i>hūnULA</i>	hĭ(j)-	‘heal’
<i>kūnULA</i>	k ^w ĭ(j)-	‘want, love’ ⁹
<i>ḥūnULA</i>	ḥĭ(j)-	‘snuffle’
<i>q’ūnULA</i>	q ^w ’ĭ(j)-	‘reach’
<i>ṣūnULA</i>	ṣ ^w ’ĭ(j)-	‘snuffle’

Note that, with roots beginning with a labialized consonant, in conformity with the general incompatibility between labialized consonants and labial vowels, labialization disappears whenever the rules of interaction between vowels result in a labial vowel, as illustrated below by *ḅūrULA* (root |ḅ^wi(j)-|) ‘speak’:

(15) *Delabialization of the initial consonant of |ḅ^wi(j)-| ‘speak’*

a. *Suffixes triggering the maintenance of the unstable consonants irrespective of class agreement*

– IMP	<i>ḅ^wij-a</i>	
– COND	HPL <i>ḅ^wij-ij-ala</i> , other classes <i>ḅ^wij-ala</i>	
– VN	<i>ḅ^wij-e</i> , oblique stem <i>ḅ^wij-e-ro-</i>	
– CONC	<i>ḅ^wij-erobona</i>	
– EXPLIC	<i>ḅ^wij-erogu</i>	
– CAUS	<i>ḅ^wij-a(j)-</i>	

b. *Suffixes triggering the maintenance or deletion of the unstable consonants depending on class agreement*

– PF ¹	HPL <i>ḅ^wij-iri</i>	vs. other classes <i>ḅ^wēri</i> < <i>ḅ^wi-ari</i>
– PF ²	HPL <i>ḅ^wij-idi</i>	vs. other classes <i>ḅ^wēda(-CL)</i> < <i>ḅ^wi-ada(-CL)</i>

⁹ *kūnULA* |k^wĭ(j)-| ‘want, love’ is in free variation with *k^w’ūnULA* |k^w’ĭ-| (same meaning), with a stable ʔ in root-final position. I have no explanation to put forward for this, and I am aware of no other lexeme showing a similar variation.

– POT	HPL	\mathcal{B}^{wij} -oji	vs. M/N $\mathcal{B}\bar{u}wa$ < \mathcal{B}^{wi} -uwa F $\mathcal{B}^{w\bar{i}}wa$ < \mathcal{B}^{wi} -iwa, NPL $\mathcal{B}\bar{u}riwa$ < \mathcal{B}^{wi} -uriwa
– INDPST	N	\mathcal{B}^{wij} -a-wudi	vs. M $\mathcal{B}\bar{u}wudi$ < \mathcal{B}^{wi} -uwudi, F $\mathcal{B}^{w\bar{i}}wudi$ < \mathcal{B}^{wi} -iwudi, NPL $\mathcal{B}^{w\bar{e}}riwudi$ < \mathcal{B}^{wi} -ariwudi
– CVB	N	\mathcal{B}^{wij} -e(he)	vs. M $\mathcal{B}\bar{o}he$ < \mathcal{B}^{wi} -ohe
	HPL	\mathcal{B}^{wij} -i(he)	F $\mathcal{B}^{w\bar{e}}he$ < \mathcal{B}^{wi} -ehe NPL $\mathcal{B}^{w\bar{e}}re(he)$ < \mathcal{B}^{wi} -ere(he)
– POST	HPL	\mathcal{B}^{wij} -idi \bar{i}	vs. other classes $\mathcal{B}^{w\bar{e}}de\bar{i}$ < \mathcal{B}^{wi} -ade \bar{i}

c. *Suffixes triggering the deletion of the unstable consonants irrespective of class agreement*

– PF.NEG		$\mathcal{B}^{w\bar{i}}La(-CL)$	< \mathcal{B}^{wi} -iLa(-CL)
– IPF ¹		$\mathcal{B}^{w\bar{i}}ri$	< \mathcal{B}^{wi} -iri
– IPF ²	HPL	$\mathcal{B}^{w\bar{i}}di$	< \mathcal{B}^{wi} -idi
		other cl. $\mathcal{B}^{w\bar{i}}da$	< \mathcal{B}^{wi} -ida
– PROH		$\mathcal{B}\bar{u}ba$	< \mathcal{B}^{wi} -uba
– INF		$\mathcal{B}\bar{u}ruLa$	< \mathcal{B}^{wi} -uruLa
		etc.	

Note that, in accordance with the general behavior of C^{wi} and C^{we} syllables in Akhvakh, in addition to forms with long back vowels resulting from configurations involving the merging of i or e with a back vowel, forms given above as C^w + *front vowel* have more or less sporadic variants with a back vowel preceded by a non-labial consonant (for example, $\mathcal{B}uj$ -a instead of \mathcal{B}^{wij} -a ‘speak!’, or $\mathcal{B}\bar{o}re$ instead of $\mathcal{B}^{w\bar{e}}re$ ‘speaking’ – progressive converb).

6.3. Verb stems ending with an unstable h

Unstable h is attested in one verb stem only:

(16) *The only verb stem ending with an unstable h*

$\bar{L}'\bar{u}nuLa$ | $\bar{L}\bar{i}(h)$ -| ‘sleep’

My consultants from Axaxdərə ignore this verb, and replace it by $\bar{L}'\bar{u}k'unuLa$, analyzable as involving a discontinuous stem, with a class agreement marker infix immediately after the initial consonant (see section 2.4 for other examples of such stems). This can be explained as the result of the contraction of a sequence consisting of the general converb of $\bar{L}'\bar{u}nuLa$ followed by an inflected form $bik'uruLa$ ‘be’; for example, in the infinitive:

(17) *Class agreement of the discontinuous stem* | $\bar{L}'\dots k'^w$ -|

M	$\bar{L}'\bar{u}k'unuLa$	< $\bar{L}'\bar{o}he$ w-uk'-uruLa
F	$\bar{L}'\bar{i}k'unuLa$	< $\bar{L}'\bar{e}he$ j-ik'-uruLa

N	$\bar{l}'\tilde{i}\text{-}k'urULA$	< $\bar{l}'\tilde{i}h\text{-}e\text{ }b\text{-}ik'\text{-}urULA$
HPL	$\bar{l}'\tilde{a}\text{-}k'urULA$ ~ $\bar{l}'\tilde{i}h\tilde{a}\text{-}k'urULA$	< $\bar{l}'\tilde{i}h\text{-}e\text{ }ba\text{-}k'\text{-}urULA$
NPL	$\bar{l}'\tilde{i}\text{-}k'urULA$	< $\bar{l}'\tilde{e}ne\text{ }r\text{-}ik'\text{-}urULA$

6.4. Verb stems ending with an unstable *b* preceded by *a* or \tilde{a}

This configuration has been observed in monosyllabic non-derived stems.

(18) *Verb stems ending with an unstable b preceded by a or \tilde{a}*

a. *verb stems ending with a(b)*

$\check{c}'\bar{o}rULA$	$\check{c}a(b)\text{-}$	'wash'
$\check{c}'\bar{o}rULA$	$\check{c}'^w a(b)\text{-}$	'slide down'
$\check{c}'\bar{o}rULA$	$\check{c}'^w a(b)\text{-}$	'peel'
$k'\bar{o}rULA$	$k'a(b)\text{-}$	'get caught, stumble'
$\check{l}'\bar{o}rULA$	$\check{l}a(b)\text{-}$	'smart' (feel a sharp stinging pain)
$l\bar{o}rULA$	$l^w a(b)\text{-}$	'tear out'
$\bar{l}'\bar{o}rULA$	$l'a(b)\text{-}$	'tear into pieces'
$\chi\bar{o}rULA$	$\chi^w a(b)\text{-}$	'curl'
$\check{z}\bar{o}rULA$	$\check{z}a(b)\text{-}$	'call'
$\check{z}\bar{o}rULA$	$\check{z}a(b)\text{-}$	'read, learn'

b. *verb stems ending with $\tilde{a}(b)$*

$\bar{c}'\bar{o}nULA$	$\bar{c}'\tilde{a}(b)\text{-}$	'kiss'
$\check{c}'\bar{o}nULA$	$\check{c}'\tilde{a}(b)\text{-}$	'chew'
$k'\bar{o}nULA$	$k'^w \tilde{a}(b)\text{-}$	'lie down'
$\check{l}'\bar{o}nULA$	$\check{l}\tilde{a}(b)\text{-}$	'lick'
$\bar{q}'\bar{o}nULA$	$\bar{q}\tilde{a}(b)\text{-}$	'take hold of'
$\bar{q}'\bar{o}nULA$	$\bar{q}'\tilde{a}(b)\text{-}$	'eat'
$\check{s}'\bar{o}nULA$	$\check{s}\tilde{a}(b)\text{-}$	'wave, shake'
$t'\bar{o}nULA$	$t'\tilde{a}(b)\text{-}$	'throw, put'
$\chi\bar{o}nULA$	$\chi\tilde{a}(b)\text{-}$	'mow'

In roots underlyingly ending with $\tilde{a}(b)$, in conformity with the general behavior of *b* already presented in section 2.4, note 3, the underlying (*b*) never surfaces as *b*, since when it is maintained, it automatically absorbs the nasality of the preceding \tilde{a} , and the underlying sequence $\tilde{a}b$ surfaces as *am*, as illustrated in (19). Note also that, when the underlying (*b*) is deleted, the nasalization of a subsequent *r* may 'absorb' the nasality of the underlying \tilde{a} .

(19) *The realization of nasality in the inflection of |kʷã(b)-| ‘lie down’*

a. *Suffixes triggering the maintenance of the unstable consonants irrespective of class agreement*

- IMP $kʷam-a$
- COND HPL $kʷam-ij-ala$, other classes $kʷam-ala$
- VN $kʷam-e$, oblique stem $kʷam-e-ro-$
- CONC $kʷam-erovona$
- EXPLIC $kʷam-erogu$
- CAUS $kʷam-a(j)-$ (quoted as $kʷamõnuLa$)

b. *Suffixes triggering the maintenance or deletion of the unstable consonants depending on class agreement*

- PF¹ HPL $kʷam-ini$ vs. other classes $kʷãni < kʷã-ari$
- PF² HPL $kʷam-idi$ vs. other classes $kʷãda(-CL) < kʷã-ada(-CL)$
- POT HPL $kʷam-oji$ vs. M/N $kʷõwa < kʷã-uwa$
F $kʷẽwa < kʷã-iwa$
NPL $kʷõniwa < kʷã-uriwa$
- INDPST N $kʷam-a-wudi$ vs. M $kʷõwudi < kʷã-uwudi$
F $kʷẽwudi < kʷã-iwudi$
NPL $kʷãniwudi < kʷã-ariwudi$
- CVB N $kʷam-e(he)$ vs. M $kʷõhe < kʷã-ohe$
HPL $kʷam-i(he)$ F $kʷẽhe < kʷã-ehe$,
NPL $kʷẽne(he) < kʷã-ere(he)$
- POST HPL $kʷam-idiñi$ vs. other classes $kʷãdeñi < kʷã-adeñi$

c. *Suffixes triggering the deletion of the unstable consonants irrespective of class agreement*

- PF.NEG $kʷẽLa(-CL) < kʷã-ila(-CL)$
- IPF¹ $kʷẽni < kʷã-iri$
- IPF² HPL $kʷẽdi < kʷã-idi$
other cl. $kʷẽda < kʷã-ida$
- PROH $kʷõba < kʷã-uba$
- INF $kʷõnuLa < kʷã-urula$
- etc.

6.5. Verb stems showing a variation between unstable *b* and unstable *j*

I have noted some cases of hesitation between unstable *b* and unstable *j*; in all cases, the preceding vowel is an *a*:

(20) *Verb stems showing hesitations between (b) and (j)*

<i>č'ōruLA</i>	č'a(b)- ~ č'a(j)-	'fall (rain, snow)'
<i>č'ōruLA</i>	č'a(b)- ~ č'a(j)-	'burn'
<i>qōruLA</i>	qa(b)- ~ qa(j)-	'ask'
<i>ʃōruLA</i>	ʃa(b)- ~ ʃa(j)-	'cry'

In all four cases, the variant with unstable *b* occurs in my data from Axaxdərə, but the Russian-Akhvakh dictionary gives only the variant with unstable *j*.

6.6. Verb stems ending with an unstable *j* preceded by *a* or *ã*

6.6.1. Unstable j preceded by a or ã in monosyllabic stems

In addition to roots showing variation between unstable *j* and unstable *b* (see section 10), unstable *j* preceded by *a* or *ã* is attested in a few monosyllabic verb roots:

(21) *Unstable j preceded by a or ã in monosyllabic stems*

a. *monosyllabic stems ending with a(j)*

<i>č'ōruLA</i>	č' ^w a(j)-	'flow'
<i>q̄'ōruLA</i>	q̄' ^w a(j)-	'cackle'

b. *monosyllabic stems ending with ã(j)*

<i>šōnuLA</i>	š' ^w ã(j)-	'stink'
<i>ʃōnuLA</i>	ʃ' ^w ã(j)-	'bray'

However, contrary to the other types of configurations involving unstable consonants, the configuration 'unstable *j* preceded by *a* or *ã*' is not limited to monosyllabic stems.

6.6.2. Stems ending with the causative suffix -a(j)

Causative stems derived by means of the causative suffix *-a(j)* have exactly the same behavior as monosyllabic non-derived stems ending with unstable consonants. Consequently, the causative suffix is clearly apparent in combination with inflectional suffixes triggering the maintenance of the unstable *j*. In other contexts, the *a* representing the causative suffix merges with the initial vowel of the inflectional suffix. Note in particular that, with inflectional suffixes beginning with *a*, vowel length constitutes the only trace of the presence of the causative suffix. Let us for example compare some inflected forms of *k̄'^weturuLA* |k̄'^wet-| 'run' with the corresponding forms of *k̄'^wetōruLA* |k̄'^wet-a(j)-| 'make run, chase'.

(22) *The realization of the causative suffix -a(j)-*

		$ \bar{k}^{w}et- $ ‘run’		$ \bar{k}^{w}et-a(j)- $ ‘make run, chase’
– IMP		$\bar{k}^{w}et-a$		$\bar{k}^{w}et-aj-a$
– COND		$\bar{k}^{w}et-ala$		$\bar{k}^{w}et-aj-ala$
– EXPLIC		$\bar{k}^{w}et-erogu$		$\bar{k}^{w}et-aj-erogu$
– INF		$\bar{k}^{w}et-urula$		$\bar{k}^{w}et-ōrula < \bar{k}^{w}et-a-urula$
– INDPST	M	$\bar{k}^{w}et-u-wudi$		$\bar{k}^{w}et-ō-wudi < \bar{k}^{w}et-a-u-wudi$
	F	$\bar{k}^{w}et-i-wudi$		$\bar{k}^{w}et-ē-wudi < \bar{k}^{w}et-a-i-wudi$
	N	$\bar{k}^{w}et-a-wudi$		$\bar{k}^{w}et-ā-wudi < \bar{k}^{w}et-a-a-wudi$

6.6.3. *Other cases of non-monosyllabic stems ending with a(j)*

The same configuration is also attested by a number of non-monosyllabic stems that are not identifiable as resulting from causative derivation. In some cases, for example $e\bar{q}ed\bar{o}rula$ $|e\bar{q}eda(j)-|$ ‘look for’, I am aware of no possible etymological explanation. But some of the non-monosyllabic stems showing an ending $a(j)$ that cannot be isolated as the causative suffix can be analyzed as deriving from a noun by means of a derivative suffix $-(j)$ or $-la(j)$.

(23) *Verb derived from nouns by means of the suffixes -(j) or -la(j)*

a. *suffix -(j)*

$kakib\bar{o}rula$	$ kakiba(j)- $	‘pray’	<	$kakiba$	‘prayer’
$kaka\check{o}rula$	$ kaka\check{a}(j)- $	‘perform ablutions’	<	$kaka\check{a}$	‘ablutions’

etc.

b. *suffix -la(j)*

$u\check{s}il\bar{o}rula$	$ u\check{s}ila(j)- $	‘think’	<	$u\check{s}i$	‘thought’
$\check{h}albi\check{x}il\bar{o}rula$	$ \check{h}albi\check{x}ila(j)- $	‘try’	<	$\check{h}albi\check{x}i$	‘trial’

etc.

Moreover, most of the nouns involved in such a derivation can be suspected to have been borrowed from Avar,¹⁰ and even when no derivation can be detected within the limits of the Akhvakh lexicon, the most probable origin of such verbs is an Avar noun or masdar. In particular, Avar has a suffix $-l-$ used to derive verbs from nouns, and form masdars by means of a suffix $-i$, and the massive borrowing of Avar masdars ending with $-l-i$ and ‘naturalized’ by means of the adjunction of the suffix $-la(j)$ must be responsible for the presence of many

¹⁰ For example, $\check{h}albi\check{x}i$ ‘trial’ has exactly the same form in Avar, and the fact that this form can be decomposed in Avar as $\check{h}al$ ‘state’ + $bi\check{x}i$ verbal noun of $bi\check{x}(ize)$ ‘see’ provides evidence that Akhvakh has borrowed it from Avar. The maintenance of the final l of $\check{h}al$ also points to a relatively recent borrowing, since the form taken in Northern Akhvakh by this Arabic borrowing is normally $\check{h}a$, in conformity with the constraint of open syllabification characteristic of Northern Akhvakh. Avar forms are quoted here after Saidov 1967.

verbs ending with *ɬila(j)* in the Northern Akhvakh lexicon. For example, within the limits of Akhvakh, it would be possible to establish a derivation chain *tamaša* ‘wonder’ → *tamaša-ɬila* ‘astonishment’ → |*tamaša-ɬila(j)*-| INF *tamašaɬilōruɬa* ‘be astonished’), but the formation of *tamašaɬila* probably involves borrowing from Avar in some way or other, since in Avar, *tamaša-ɬ-i* ‘astonishment’ is the masdar of *tamaša-ɬ-(ize)* ‘be astonished’ < *tamaša* ‘wonder’, whereas **tamašaɬi* is not attested in Akhvakh.

6.6.4. A possible origin of unstable *j* at the end of non-monosyllabic derived stems

The observations made in section 6.6.3 provide a clue to a possible origin of unstable *j*, at least in part of its occurrences. The point is that, like other Daghestanian languages, Akhvakh makes a wide use of light verb compounds, in particular of *do*-compounds: *komoki gūruɬa* ‘help(N) do → help (V)’, *tamihi gūruɬa* ‘punishment do’ → ‘punish’, etc. Moreover, *do*-compounding constitutes the standard way for creating the verbal counterpart of foreign words that are borrowed first as nouns. Not surprisingly, several cases of synonymy between *do*-compounds and verb stems ending with *a(j)* are mentioned in the Akhvakh-Russian dictionary:

(24) *do*-compounds and verb stems ending with *a(j)*

<i>kakibōruɬa</i>	<i>kakiba(j)</i> -	‘pray’	= <i>kakiba gūruɬa</i>
<i>kakačōruɬa</i>	<i>kakača(j)</i> -	‘perform ablutions’	= <i>kakača gūruɬa</i>
<i>ĩžitiɬilōruɬa</i>	<i>ĩžitiɬila(j)</i> -	‘disgrace oneself’	= <i>ĩžitiɬila gūruɬa</i>
<i>ħaduɬilōruɬa</i>	<i>ħaduɬila(j)</i> -	‘get prepared’	= <i>ħaduɬila gūruɬa</i>

It seems therefore reasonable to imagine that this coincidence is not fortuitous, and that stem-final (*j*) in verbs originating from borrowed nouns may have developed from the coalescence of *do*-compounds. According to this analysis, historically, the stem-final (*j*) in verbs originating from borrowed nouns is cognate with *gūruɬa* |*g^wi(j)*-| ‘do’.

Returning now to the causative suffix *-a(j)*, it is well-known that, cross-linguistically, *do* is widely used as a causative operator, and historically, the coalescence of *do*-causatives is a common source of morphological causatives (as illustrated for example by Avar). This suggests to extend to causatives the hypothesis put forward above for verbs originating from borrowed nouns, and to analyze the unstable *j* constituting the second element of the causative suffix *-a(j)* as a reflex of the same etymon as the verb root |*g^wi(j)*-|.

7. Particular cases

In this section, I examine two verbs whose relationship to the general phenomenon of unstable consonants needs some comments. One of these two verbs (*mūnuɬa* ‘go’) is the only Akhvakh verb that at first sight seems to have an entirely irregular inflection.

7.1. *eḡurula* ‘look’

The inflected forms of *eḡurula* ‘look’ can be accounted for by positing a stem |*eḡ-*|, with the exception of the general converb *eḡaj-e* and the posterior converb *eḡ-ādeḡi*, which put into play a stem |*eḡaj-*|.¹¹ Consequently, one of the two allomorphs of this verb stem shows an ending typical of verbs ending with an unstable consonant, but the distribution of the two allomorphs is not comparable to the distribution of the two allomorphs of stems ending with unstable consonants. More over, the two allomorphs of this stem do not differ by the presence vs. absence of a single consonant, but by the presence vs. absence of the sequence *aj*.

Contamination by *eḡedōrula* ‘look for’, regularly inflected with an alternating stem |*eḡeda(j)-*| and close to *eḡurula* both in form and meaning, is a possible explanation of this irregularity. But the relationship between these two verbs cannot be established within the limits of the Akhvakh lexicon, and here again, borrowing from Avar might constitute the explanation of this strange similarity. The point is that, on the one hand, no other couple of Akhvakh verbs confirms the possibility to isolate *-eda(j)-* as a derivative suffix, but on the other hand, Avar has a derivative suffix whose main allomorphs are *-ar-* and *-d-*, and whose general meaning as described in particular by Charachidzé (1981:106-7) fits well with the semantic relationship between *eḡurula* and *eḡedōrula*. Unfortunately, I have not been able to trace possible cognates of these verbs in the Avar dictionary.

7.2. *mūnula* ‘go’

mūnula ‘go’ has the particularity that most of its forms seem to consist of a class prefix and an inflectional suffix only, without the possibility to isolate a segment representing the root between them. In the forms in question, the only manifestations of an underlying root are the choice of the nasalized variant of nasalizable affixes, and the lengthening of the suffix-initial vowels. Consequently, these forms can be analyzed as underlyingly including a root |*-ṽ-*|, with an unspecified vowel merging with the suffix-initial vowel. For example, the perfective negative form with masculine agreement *w-ḡla* can be analyzed as underlyingly |*w-ṽ-ḡla*|. Alternatively, the vowel merging rules would permit positing an underlying *ĩ*, but this solution is not particularly interesting, since it cannot be extended to other forms in which the root vowel is clearly *ā*.

In other forms, no segment representing the root can be isolated, but the suffix-initial vowel is modified in such a way that an underlying *ā* must be posited. For example, the general converb with feminine agreement *j-āhe* can be analyzed as underlyingly |*j-ā-ehē*|. The regularity seems to be that the root is represented by an underlying *ā* in the presence of inflectional suffixes that trigger the deletion of instable consonants and have *e* as their initial vowel.

In the remaining forms, underlined in (25), a root *-ā?* is apparent. The distribution of this variant of the root of *mūnula* is identical with that of the full stem of the verbs whose stem allomorphy has been described above. Therefore, the irregularity of this verb is not as extreme as it may seem at first sight: its root includes an unstable *?* that disappears exactly in the same

¹¹ This coincidence cannot be explained by a direct historical relation between these two forms, since the posterior converb results from the grammaticalization of a sequence ‘perfective participle + *riḡi* (essive of ‘moment’) – Creissels Submitted, and there is no evidence of a particular relation between the general converb and the perfective participle.

conditions as other unstable consonants, and its only real irregularity is the unpredictable reduction of its vowel to an unspecified nasal vowel in some of the forms in which the unstable consonant disappears.

(25) *Inflection of mūnuLa ‘go’*

	M	F	N	HPL	NPL
– IMP	<i>w-ãʔ-a</i>	<i>j-ãʔ-a</i>	<i>m-aʔ-a</i>	<i>m-aʔ-a</i>	<i>r-ãʔ-a</i>
– COND	<i>w-ãʔ-ala</i>	<i>j-ãʔ-ala</i>	<i>m-aʔ-ala</i>	<i>m-aʔ-ij-ala</i>	<i>r-ãʔ-a la</i>
– VN	<i>w-ãʔ-e</i>	<i>j-ãʔ-e</i>	<i>m-aʔ-e</i>	<i>m-aʔ-e</i>	<i>r-ãʔ-e</i>
– CONC	<i>w-ãʔ-erokona</i>	<i>j-ãʔ-erokona</i>	<i>m-aʔ-erokona</i>	<i>m-aʔ-erokona</i>	<i>r-ãʔ-erokona</i>
– EXPLIC	<i>w-ãʔ-erogu</i>	<i>j-ãʔ-erogu</i>	<i>m-aʔ-erogu</i>	<i>m-aʔ-erogu</i>	<i>r-ãʔ-erogu</i>
– PF ¹	<i>w-āni</i>	<i>j-āni</i>	<i>m-āni</i>	<i>m-aʔ-ini</i>	<i>r-āni</i>
– PF ²	<i>w-āda(-we)</i>	<i>j-āda(-je)</i>	<i>m-āda(-be)</i>	<i>m-aʔ-idi</i>	<i>r-āda(-re)</i>
– POST	<i>w-ādeṭi</i>	<i>j-ādeṭi</i>	<i>m-ādeṭi</i>	<i>m-aʔ-idiṭi</i>	<i>r-ādeṭi</i>
– POT	<i>w-ūwa</i>	<i>j-ūwa</i>	<i>m-ūwa</i>	<i>m-aʔ-oji</i>	<i>r-ūwa</i>
– INDPST	<i>w-ū-wudi</i>	<i>j-ū-wudi</i>	<i>m-aʔ-e-wudi</i>	—	<i>r-āne-wudi</i>
– CVB	<i>w-ōhe</i>	<i>j-ōhe</i>	<i>m-aʔ-e(he)</i>	<i>m-aʔ-i(he)</i>	<i>r-āne(he)</i>
– PF.NEG	<i>w-ūla(-we)</i>	<i>j-ūla(-je)</i>	<i>m-ūla(-be)</i>	<i>m-ūla(-ji)</i>	<i>r-ūla(-re)</i>
– IPF ¹	<i>w-īni</i>	<i>j-īni</i>	<i>m-īni</i>	<i>m-īni</i>	<i>r-īni</i>
– IPF.NEG ¹	<i>w-īki</i>	<i>j-īki</i>	<i>m-iki</i>	<i>m-iki</i>	<i>r-īki</i>
– IPF ²	<i>w-īda(-we)</i>	<i>j-īda(-je)</i>	<i>m-īda(-be)</i>	<i>m-īdi</i>	<i>r-īda(-re)</i>
– SIMULT	<i>w-īdeṭi</i>	<i>j-īdeṭi</i>	<i>m-īdeṭi</i>	<i>m-īdeṭi</i>	<i>r-īdeṭi</i>
– IPF.NEG ²	<i>w-īka(-we)</i>	<i>j-īka(-je)</i>	<i>m-īka(-be)</i>	<i>m-īka(-ji)</i>	<i>r-īka(-re)</i>
– PROH	<i>w-ūba</i>	<i>j-ūba</i>	<i>m-ūba</i>	<i>m-ūba</i>	<i>r-ūba</i>
– INF	<i>w-ūnuLa</i>	<i>j-ūnuLa</i>	<i>m-ūnuLa</i>	<i>m-ūnuLa</i>	<i>r-ūnuLa</i>
– PROG	<i>w-āne/o</i>	<i>j-āne</i>	<i>m-āne</i>	<i>m-āne/i</i>	<i>r-āne</i>

etc.

8. Conclusion

In this paper, after defining the notion of unstable consonant and describing the general rules applying to verbs whose stems ends with an unstable consonant, I have reviewed the subsets of verbs showing this phenomenon classified according to the nature of the unstable consonant and of the preceding vowel. By way of a conclusion, I would like to say a few words about the historical significance of unstable consonants.

Many of the monosyllabic roots ending with an unstable consonant probably belong to the lexicon inherited at least from Proto-Andic, even perhaps from Proto-Nakh-Daghestanian, and for such verbs, the morphophonological alternation analyzed in this paper may be the trace of ancient processes in the history of Akhvakh, and a systematic morphophonological analysis of their cognates in other languages of the family might provide interesting insights into the morphological history of the Andic languages.

The case of non-monosyllabic stems ending with unstable consonants is different, since I have shown that causative derivation and the integration of borrowings are responsible for the large number of non-monosyllabic stems ending with unstable consonants. I have tried to

show that the Akhvakh data suggests that, in both cases, the verbal root for ‘give’ ($g^{wi(j)}$ -| in present-day Akhvakh) is the ultimate source of unstable j . Here again, it would be interesting to confront this hypothesis with the results of a similar morphophonological analysis of verbs created by causative derivation and of borrowed verbs in related languages.

Independently of its possible significance for the history of the Andic languages, the phenomenon described in this paper provides a clear illustration of the transition from agglutinative to fusional morphology, since the deletion of unstable consonants triggers a process of vowel merging blurring the boundary between the stem and the inflexional suffix.

Abbreviations

CL: class agreement marker
CONC: concessive converb
COND: conditional converb
CVB: general converb
EXPLIC: explicative converb
F: human singular feminine
HPL: human plural
IMP: imperative
INDPST: indirective past (past of indirect knowledge)
IPF: imperfective
M: human singular masculine
MIR: mirative
N: non-human
NPL: non-human plural
OPT: optative
PF: perfective positive
POST: posterior converb
POT: potential
PROG: progressive converb
PROH: prohibitive
VN: verbal noun
SIMULT: simultaneous converb

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