SCHWA IN ABKHAZ

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1. Introduction *

Abkhaz is one of the languages in the North West Caucasian family. North West Caucasian languages are well known for their large consonantal and small vocalic inventories. Many investigators of Abkhaz (e.g. Lomtadze, Hewitt, Chirikba) regard the linear two member /a - ə / as its vocalic system. However, there has been discussion as to whether or not this schwa ə can be regarded as a phoneme. For instance, Allen (1965) suggested that Abaza, which has a dialectal relationship to Abkhaz, is monovocalic, and has only the single vowel /a/. Kuipers (1960) has also claimed an absence of consonant-vowel opposition in the phonemic system of Kabardian, another member of the North West Caucasian linguistic family. According to Kuipers' analysis of Kabardian, the presence or absence of its postaccentual schwa can be predicted according to certain rules that he has established. On the other hand, the preaccentual schwa can be eliminated from the system of phonemes in keeping with Kuipers' interpretation of the opposition ə versus zero as a "juncture-phenomenon".

To date, the occurrences of unstressed schwa in Abkhaz have not been investigated in detail in Caucasology. In this article I will undertake such an investigation, and argue that the presence or absence of an unstressed schwa in Abkhaz is predictable. I will look at the circumstances under which unstressed schwa appear, dividing them into postaccentual and preaccentual occurrences.

I have classified all consonants in the following three series, from the point of view of sonority:

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Series I :

stops: labials. $b-p-p'$, dentals. $d-t-t'$, $d^w-t^w-t'^w$, velars. $g-k-k'$, $g^w-k^w-k'^w$,
 $g^j-k^j-k'^j$, uvulars. q' , q'^w , q'^j

affricates: dentals. $ʒ-c-c'$, $ʒ^w-c^w-c'^w$, alveolars. $ʒ-č-č'$, $ʒ^j-č^j-č'^j$

fricatives: dentolabials. $v-f$, dentals. $z-s$, alveolars. $ʒ-š$, $ʒ^w-š^w$, $ʒ^j-š^j$,
 uvulars. $ɣ-x$, $ɣ^w-x^w$, $ɣ^j-x^j$, pharyngals. h , h^w , j^w ¹

Series II : resonants: n , m , r , l Series III : semivowels: j , w < ' > = glottalization, < ^w > = labialization, < ^j > = palatalization

The words and verbal forms cited below as examples are from data collected from Mrs. Ana Tsvinaria, a native speaker of the Abzhywa dialect of Abkhaz, who acted as a consultant during the course of fieldwork.

2. The postaccentual occurrence of schwa

Before discussing the occurrence of schwa, I should clarify the relation between schwa and stress in Abkhaz. To describe the placement of stress in Abkhaz words, Spruit (1985:31) postulates that each word should be considered as “consisting of a string of elements $C(ə)$ or Ca (where C is any consonant)” which is subsumed under the generic symbol “ $C(a)$ ”. According to Spruit, “a stressed element $C(á)$ is realized as $Cá$ or, in the absence of a , as $Cǎ$ ” (e.g. $á-ʒ$ “the-flea”, $á-ʒ-k^w a$ “the-flea-pl.” versus $a-ʒǎ$ “the-water”, $a-ʒ-k^w á$ “the-water-pl.”). Therefore, a schwa bearing stress can be viewed as a realization of stress on the preceding consonant. I will call this consonant a *potentially stressed consonant*.² Moreover, the schwa disappears before a (e.g. $də-s-k'-wá-jt'$ “I catch him/her” versus $d-a-k'-wá-jt'$ “it catches him/her”).

If all consonants are marked as C , vowels a and $ə$ as V , derivational boundaries as #, and word-boundaries as ##, the presence or absence of a postaccentual schwa is conditioned in such consonant sequences as per the following:

- 1) $-VC_1əC_2##$, 2) $-aC_1C_2##$, 3) $-VC_1C_2əC_3##$, 4) $-VC_1əC_2C_3##$, 5) $-VC_1əC_2C_3V(##/-)$, 6) $-VC_1C_2əC_3V-$, 7) $-VC_1əC_2C_3C_4V-$, 8) $-VC_1C_2əC_3C_4V-$, 9) $-Cə##$.

We can now look, in greater detail, at each of these consonant sequences.

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2.1 -VC₁əC₂##

Examples where a schwa appears between C₁ and C₂ are as follows:

- a) C₁ = Series I, C₂ = Series I: *áaxəs* “from”, *áx^j(ə)ʒ* “name”, *álax^wəc* “eyelash”, *áš^jəž^j* “morning”, *áb(ə)z* “tongue”, *səbəz* “my tongue”, *abəbəš* “pure white”, *ác'(ə)x* “night”, *jəlməsəz* “one who hit her and”, *ádəd* “thunder”.
 b) C₁ = Series I, C₂ = Series II: *áapən* “spring”, *ájatəm* “orphan”, *ázən* “winter”, *dək^wəm* “he/she is not on”, *jək^wən* “it was on”, *bəsməsən* “don’t hit me!”.

In general, sonority is thought to become higher to the right according to the following hierarchy: “voiceless stops < voiceless fricatives < voiced stops < voiced fricatives < resonants < semivowels.” In the case of a) above, when C₁ is a voiced stop and C₂ is a voiced fricative (e.g. *səbəz*, *áb(ə)z*, with the exception of the word *abəbəš*), or when C₁ is a voiceless fricative and C₂ is a voiced fricative-affricate (e.g. *áš^jəž^j*, *áx^jəʒ*, *jəlməsəz*), then a schwa appears between C₁ and C₂. Also, when both C₁ and C₂ are voiceless fricative-affricates (e.g. *áaxəs*, *ác'(ə)x*), or when both C₁ and C₂ are voiced stops (e.g. *ádəd*), then a schwa appears between C₁ and C₂. In the case of b) above, where the sonority of C₁ is lower than that of C₂, a schwa appears between C₁ and C₂.

2.2 -VC₁C₂##

Examples where a schwa does not appear between C₁ and C₂ are as follows:

- a) C₁ = Series II, C₂ = Series I: *amš^w* “bear”, *amc* “lie”, *amc'* “fly”, *amš* “day”, *ans* “so”, *ant* “those”, *anəh^wamš* “holiday”, *akərc* “dandruff”, *amč* “force”, *axəlc'* “descendant”.
 b) C₁ = Series I, C₂ = Series I: *aš^wt* “flower”, *až^wt^w* “drink”, *aš^wáxt^w* “tax”.

In a), where the sonority of C₁ is higher than that of C₂, a schwa does not appear between C₁ and C₂. In b), when C₁ is a voiceless fricative and C₂ is a voiceless stop, and thus the sonority of C₁ is higher than that of C₂, a schwa does not appear between C₁ and C₂ (with the exception of the word *sbəsəp'* “I’ll hit you”³).

Comparing the examples in 2.1 above with those given here, it can be seen that if the sonority of C₁ is lower than that of C₂, or the sonority of C₁ is the same as that of C₂, then a schwa tends to appear between C₁ and C₂. On the other hand, if the sonority of C₁ is higher than that of C₂, then a schwa does not appear between C₁ and C₂. However, when both C₁ and C₂ belong to Series I, there are instances where this rule does not apply.

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2.3 -VC₁C₂əC₃##

Examples where a schwa appears between C₂ and C₃ are as follows:

- a) C₁ = Series I, C₂ = Series I, C₃ = Series II: *áč'k'wən* “boy”, *ádg'əl* “earth”, *apsádg'əl* “homeland”.
- b) C₁ = Series II, C₂ = Series I, C₃ = Series II: *ámp'əl* “ball”, *ák'wəmp'əl* “round”.
- c) C₁ = Series I, C₂ = Series I, C₃ = Series I: *ášwətəc* “single flower”, *álabžəš* “tear”, *ášk'wəs* (Genko:1998) “year”.
- d) C₁ = Series II, C₂ = Series I, C₃ = Series I: *ántəc* “outside”, *árpəs* “youth”.
- e) C₁ = Series I, C₂ = Series II, C₃ = Series II: *sbəsrəm* “I will not hit you”.

In a), b), c) and d), the sonority of C₁ is the same as that of C₂ (cf. *ádg'əl*), or the sonority of C₁ is higher than that of C₂ (cf. *áč'k'wən*, *ámp'əl*, *ántəc*), while the sonority of C₂ is lower than that of C₃, with the exception of the word *álabžəš*. This relation of sonorities in the consonant sequences shows that a syllable break exists between C₁ and C₂, and therefore the preceding vowel and C₁ form a syllable, while between C₂ and C₃ a schwa occurs as a syllabic peak. In the case of e), where the sonority of C₂ is the same as that of C₃ (as opposed to the examples in 2.4 below), a syllable break exists between C₁ and C₂ and a schwa can appear as a syllabic peak between C₂ and C₃. If the consonants in Series I are identified with a *T*, and the resonants and semivowels in Series II and III with an *R*, then the examples above can be represented as follows: a) *VTTəR##*, b) *-VRTəR##*, c) *VTTəT##*, d) *VRTəT##*, e) *-VTRəR##*.

2.4 -VC₁əC₂C₃##

Examples where a schwa appears between C₁ and C₂ are as follows:

- a) C₁ = Series I, C₂ = Series II, C₃ = Series I: *áž'əmš'j* “eyebrow”, *ác'wəmc'* “gadfly”, *álayərʒ* “tear”.
- b) C₁ = Series I, C₂ = Series III, C₃ = Series I: *dlósəjt'* “he/she hit her”, *jék'wəwp'* “it /they is/are on”.

As stated above (cf. 2.2 *amš'w*), a schwa does not appear between C₂ and C₃ because the sonority of C₂ is higher than that of C₃, while a schwa appears between C₁ and C₂ because the sonority of C₁ is lower than that of C₂ (cf. 2.1 *ážən*). From the examples given here it can be seen that in a three-consonant sequence like *-VTRT##*, a schwa can appear before *R* followed by *T*: *-VTəRT##*. These examples, including those in 2.1, 2.2 and 2.3 above, generally indicate that, if in a two-consonant sequence *CC'* the sonority of *C* is lower than that of

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C' , or the sonority of C is the same as that of C' , then a schwa can appear between C and C' . In contrast, if the sonority of C is higher than that of C' , then a schwa cannot appear between C and C' . I will call this determination of the appearance of schwa in keeping with sonority *the principle of sonority*. According to this principle, in a three-consonant sequence like $-VCC'C''##$, a schwa can appear either between C and C' or between C' and C'' .

Examples of three-consonant sequences in which a schwa appears before C_2 of Series I (e.g. $-VTəTT\#$) are not found in my data, but examples of four-consonant sequences wherein consonants of Series I are present are as follows:

c) C_1 = Series I, C_2 = Series I, C_3 = Series I, C_4 = Series I: $áš'jəbžj$ "sound".

d) C_1 = Series II, C_2 = Series I, C_3 = Series I, C_4 = Series I: $ámčəbžj$ "week".

According to the principle of sonority noted above, it is possible that a schwa appears either between C_2 and C_3 or between C_3 and C_4 . However, these examples would appear to show that a schwa can appear more readily between a voiceless stop/fricative and a voiced stop than between a voiced stop and a voiced fricative.

2.5 $-VC_1əC_2C_3V##/-$

Examples where a schwa appears between C_1 and C_2 in a three-consonant sequence followed by a vowel are as follows:

a) C_1 = Series I, C_2 = Series II, C_3 = Series II: $áapənra$ "spring", $ázənra$ "winter season".

b) C_1 = Series I, C_2 = Series II, C_3 = Series I: $áfərh^wə$ "quickly", $ázaxərtə$ "sewing place", $áš^wəɾj^wə$ "smoked cheese", $dtəzəmgajt'$ "I did not take him/her out".

c) C_1 = Series I, C_2 = Series I, C_3 = Series II: $álak'əsrə$ "to touch".

d) C_1 = Series II, C_2 = Series I, C_3 = Series I: $aáməš'jtaxj$ "after", $álaməsda$ "conscienceless".

e) C_1 = Series II, C_2 = Series II, C_3 = Series I: $jələmtəj$ "(that) which she did not sell", $lčələmš'əjt'$ "she did not kill herself".

f) C_1 = Series I, C_2 = Series I, C_3 = Series I: $áh^wəzba$ "knife".

In his distinguished monograph on phoneme and morpheme in Kabardian, Kuipers (1960:41) states that "ə never appears before a consonant followed by a except that after plosives, fricatives and glottalic laryngals it appears facultatively before $-ra$ ". This rule is also applicable, by extension, to Abkhaz, where a schwa does not appear before a consonant followed by both a and $ə$.

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According to Kuipers' explanation (1960:42), this is because "a consonant followed by a constitutes the rising part of a syllable, and therefore does not itself give rise to another syllabic peak, cf. *fzém* versus *k'wázma*". I will call this revised rule for Abkhaz *Kuipers' Rule*.

In keeping with Kuipers' Rule, a schwa does not appear between C_2 and C_3 in any of the examples above. In the case of a), b), c) and f), a schwa appears between C_1 and C_2 , since the sonority of C_1 is lower than that of C_2 , that is, the principle of sonority may be applied here (cf. 1.1. *ázən*). Examples in d) constitute an exception to the principle of sonority (cf. *ámč*). Presumably, these examples can be explained by "the rule of three-consonant sequences": "in three-consonant sequences ə, if it appears, will be found between the first and second consonant" (Spruit:1985:77). Though this rule does not always operate in three-consonant sequences (cf. 2.3), it almost always holds true for three-consonant sequences if a schwa cannot appear between C_2 and C_3 . I will call this revised rule *Spruit's Rule*. Examples in e) can also be explained by Spruit's Rule.

These examples can be represented as follows: a) *VTəRRV*, b) *VTəRTV*, c) *VTəTRV*, d) *VRəTTV*, e) *VRəRTV*, f) *VTəTTV*.

2.6 - $VC_1C_2əC_3V$ -

Examples where a schwa appears between C_2 and C_3 in a three-consonant sequence followed by a vowel are as follows:

- a) C_1 = Series II, C_2 = Series I, C_3 = Series I: *jémj^wəša* "(the one) who may not run".
- b) C_1 = Series II, C_2 = Series I, C_3 = Series II: *árd^wəna* "thrush".

These examples appear to be exceptions to both Kuipers' Rule and Spruit's Rule. However, Example a) can be explained by Trigo's Rule (for details of this rule, see 3.3). According to Trigo's Rule, if a form is a verbal complex, a derivational boundary can be considered to exist after its root. In this case the form can be analyzed as *jémj^w#-ša*, and therefore a schwa does not appear between *m* and *j^w* (for ə after *j^w* see 2.9). On the other hand, Example b) can be formulated as *VRTəRV*. A construction along the lines of *VRTəRV* is not to be found among the examples in 2.5 above. Presumably, in a construction such as $-VRC_2C_3V$, the principle of sonority which operates between C_2 of Series I and C_3 of Series II (or III) may take precedence over Kuipers' Rule.

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2.7 -VC₁əC₂C₃C₄V-

Examples where a schwa appears between C₁ and C₂ in a four-consonant sequence followed by a vowel are as follows:

- a) C₁ = Series I, C₂ = Series II, C₃ = Series I, C₄ = Series I: *ázaxərsta* “seam”.
- b) C₁ = Series I, C₂ = Series II, C₃ = Series I, C₄ = Series II: *ázərj^wra* “to listen”.
- c) C₁ = Series II, C₂ = Series II, C₃ = Series I, C₄ = Series I: *jələm^wj#-ša* “(that) which she may not write”.
- d) C₁ = Series I, C₂ = Series II, C₃ = Series I, C₄ = Series III: *jtəzəmš^w#-waz* “(the one) who was not immersing it/them”.
- e) C₁ = Series II, C₂ = Series II, C₃ = Series I, C₄ = Series III: *jələm^wx#-wa* “(that) which she does not sharpen”.

These examples have no schwa before C₄, in keeping with Kuipers’ Rule. In a) and b), the principle of sonority works among the first three consonants (C₁C₂C₃), and since the sonority of C₁ is lower than that of C₂ and the sonority of C₂ is higher than that of C₃, a schwa appears between C₁ and C₂. These examples can be represented as follows: a) -VTəRTTV##, b) -VTəRTRV##. In the case of c), d) and e), a derivational boundary can be considered to exist after their roots in accordance with Trigo’s Rule, and we can assume that the principle of sonority, or Spruit’s Rule, operate only among the first three consonants (C₁C₂C₃). These examples can be represented as follows: c) -VRəRT#TV-, d) -VTəRT#RV-, e) -VRəRT#RV. In -VRəRT#, the principle of sonority does not allow a schwa to appear between R and T, while a schwa can appear between C₁ and C₂ following Spruit’s Rule.

2.8 -VC₁C₂əC₃C₄V-

Examples where a schwa appears between C₂ and C₃ in a four-consonant sequence followed by a vowel are as follows:

- a) C₁ = Series II, C₂ = Series I, C₃ = Series I, C₄ = Series I: *árpəzba* “young man”.

This example has schwa between C₂ and C₃ because both Kuipers’ Rule and the principle of sonority apply (cf. 2.3 d) and 2.6).

2.9 -Cə##

An unstressed schwa also appears word-finally as in the following:

- a) *axəsj^wə* “shot”, *asáx^jatəxj^wə* “painter”, *atəž^jj^wə* “publisher”, *ápsaxj^wə* “betrayed”, *ázaxj^wə* (or *azaxj^wə*) “tailor”, *ámj^wasj^wə* “passer-by”, *átəjj^wə* “seller”.

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- b) *áč'k'wən-gʲə* “boy-also”, *čən-gʲə* “day-also”, *s-án-gʲə* “my-mother-also”.
 c) *ast'ól-č'ə* “desk-in”, *ámjʷ-č'ə* “road-in”, *awáda-č'ə* “room-in”, *ábna-č'ə* “forest-in”.
 d) *dəpanə* “he/she having jumped”, *sbácʷhanə* “I having scolded you”.

In the case of a), a schwa appears after the suffix *jʷ* which marks deverbal *nomina agentis*. If there is an *a* before this suffix, the schwa tends to be dropped: e.g. *ácʷaɣʷajʷ* “peasant”, *ášʷahʷajʷ* “singer”, *aáxʷajʷ* “buyer”, *ásajʷ(ə)* “swimmer”, *ášʷarəcajʷ(ə)* “hunter”. But some examples have a schwa after *-ajʷ*: e.g. *áčəwajʷə* “horseman”, *árwajʷə* “soldier”. In the case of b), the suffix meaning “also”, “even”, and “and” has a word-final schwa. However, in some folktale texts this suffix is also found without schwa, e.g. *awaá-gʲ* “people-also”, *apára-gʲ* “money-also”. In the case of c), the postpositional suffix *č'ə* meaning “in” normally has a schwa, but it tends to be dropped if there is an *a* before *č'ə*, e.g. *h-hʷəntkár-ra-č'* “our-state-in”, *abáhč'ja-č'(ə)* “garden-in”, *akóta-č'(ə)* “village-in”. In the case of e), the word-final suffix *nə* marks the positive form of absolutive and contrasts with the suffix of the past indefinite without a schwa: cf. *dəpan* “he/she jumped and...”, *sbácʷhan* “I scolded you and...”. The schwa of *nə* is characterized morphologically and not phonetically.

3. The preaccentual occurrence of schwa

The presence or absence of the preaccentual schwa is conditioned in consonant sequences such as the following: 1) $-C_1əC_2C_3V-$, 2) $-C_1əC_2C_3C_4V-$, 3) $C_1əC_2C_3\#-C_4V-$ or $-VC_1əC_2C_3\#-C_4V-$, 4) $-C_1C_2əC_3C_4V\#-$.

3.1 $-C_1əC_2C_3V-$

Examples where a schwa appears between C_1 and C_2 in a three-consonant sequence followed by a vowel are as follows:

- a) C_1 = Series I, C_2 = Series II, C_3 = Series I: *aq'ərq'ə* “throat”, *axərc'wə* “lactic acid”, *afərtən* “storm”, *zənʒá* “quite”, *ak'wəmž'wə* “Circassian coat”, *azərsə* “boiling water”, *ahʷənč'wə* “mud”, *atənxará* “to remain after”, *bsəms'əjt'* “I did not kill you”, *dəlž'əjt'* “she deceived him/her”, *dəlk'wəbájt'* “she washed him/her”.
 b) C_1 = Series I, C_2 = Series II, C_3 = Series II: *ak'ərmət'* “brick”, *abəlrá* “to burn”, *až'ərnəhʷa* “January”.
 c) C_1 = Series I, C_2 = Series I, C_3 = Series I: *axədc'á* “duty”, *cʷəbbən*

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“September”, *ac^wək^wbár* “drop”, *ax^wətx^wətra* “to whisper”, *ac^wəpxaš^jára* “to be ashamed of”, *səš^wž^já* “deceive me!”, *bəzbájt* “I saw you”, *bəzgájt* “I took you”, *dəsq^jázájt* “I calmed him/her”, *bəzdérəjt* “I knew you”, *bəzdérwajt* “I know you”.

d) C_1 = Series I, C_2 = Series I, C_3 = Series II: *afəj^wrá* “to smell at”.

None of these examples have schwa before C_3 and this is consistent with Kuipers’ Rule. In a) and b), a schwa appears between C_1 and C_2 in keeping with both the principle of sonority and Spruit’s Rule. In the examples listed in c) and d), since their constructions are *-TTTV-* and *-TTRV-* respectively, the principle of sonority which operates between C_2 and C_3 does not take precedence over Kuipers’ Rule (cf. *-RTRV-* in 2.6). Therefore, in keeping with Kuipers’ Rule, a schwa does not appear before C_3 . The appearance of a schwa in these examples can be explained in terms of either the principle of sonority (cf. *axədc^já*) or Spruit’s Rule (cf. *ac^wəpxaš^jára*).

3.2 $-C_1əC_2C_3C_4V-$

Examples where a schwa appears between C_1 and C_2 in a four-consonant sequence followed by a vowel are as follows:

- a) C_1 = Series I, C_2 = Series II, C_3 = Series I, C_4 = Series I: *ah^wəntkár* “king”, *ah^wəntkárra* “kingdom”, *Tərk^wt^wəla* “Turkey”, *afəroph^wəs* “heroine”, *Kərtt^wəla* “Georgia”, *bəmpšən* “don’t look!” (note that a schwa cannot be inserted into a consonant cluster *pš* of *bəmpšən*, cf. *ápšza* “beautiful”⁴), *axənh^wrá* “to return”.
- b) C_1 = Series I, C_2 = Series I, C_3 = Series I, C_4 = Series II: *dəbsmərdérəjt* “I did not introduce him/her to you”.

In a) and b), since their constructions are *-TəRTTV-* and *-TəTTRV-*, the principle of sonority which operates between C_3 and C_4 does not take precedence over Kuipers’ Rule (cf. *-RTRV-* in 2.6 and *-TTRV-* in 3.1). Therefore, in keeping with Kuipers’ Rule, these examples also have no schwa before C_4 . With the first three-consonant sequences, the appearance of a schwa between C_1 and C_2 is in accord with the principle of sonority.

3.3 $C_1əC_2C_3\#-C_4V-$ or $-VC_1əC_2C_3\#-C_4V-$

In Trigo’s view (1992:200-201), a verbal complex such as *jtasərc^wwájt* “I make it empty” has a derivational boundary after a root *c^w*, i.e. *jtasərc^w\#-wájt*. This means then that the presence of C_4 after a root is not taken into account as

regards the occurrence of a schwa. This derivational boundary after a root is associated with the morphological delimitative function of the verbal complex. This is because a native speaker must first recognize where a radical morpheme is in order to understand the functions of prefixes. I will call this phenomenon *Trigo's Rule*. In accordance with this rule, *jtasərc^w#-wájt'* must be regarded as a three-consonant sequence, i.e. -VTəRT#-. Consider the following examples:

a) C_1 = Series I, C_2 = Series I, C_3 = Series I, C_4 = Series I / III: *səbš#-wájt'* "you kill me", *dəsš#-rém* "I will not kill him/her", *dəsš#-x'ájt'* "I have killed him/her" (cf. *aš'rá* "to kill", *bəsšájt'* "I killed you"), *dəsk'#-wájt'* "I catch him/her" (cf. *dəsk'ájt'* "I caught him/her").

b) C_1 = Series III, C_2 = Series I, C_3 = Series I, C_4 = Series III: *jəzž#-wájt'* "I dig it/them" (cf. *jəzžájt'* "I dug it/them"), *jəzž^w#-wájt'* "I drink it/them" (cf. *jəzž^wájt'* "I drank it/them"), *jəz3#-wájt'* "I roast it/them" (cf. *jəz3ájt'* "I roasted it/them"), *jəss#-wájt'* "I weave it /them" (cf. *jəssájt'* "I wove it /them"), *jəsx#-wájt'* "I sharpen it/them" (cf. *jəsxájt'* "I sharpened it /them"), *jəšš^w#-wájt'* "I dye it/them" (cf. *jəšš^wájt'* "I dyed it/them").

Most of these examples violate the principle of sonority (cf. *dəsš#-rém*). With the consonant sequence consisting of both personal prefixes and a root in the verbal complex (cf. *də-s-š#-* (him/her-I-kill#-), Spruit's Rule applies regardless of the kind of sonority. Thus, a schwa appears between C_1 and C_2 . This may be because a type of root having *Ca* (cf. *də-s-sa#-wá-jt'* (him/her-I-shave#-Dynamic-Finite) "I shave him/her", where both Kuipers' Rule and Spruit's Rule apply) affects the type of root having a single *C*. Therefore, the appearance of a schwa in this case can be formulated as follows: if Trigo's Rule applies, Spruit's Rule must also apply.

3.4 - $C_1C_2əC_3C_4V$ #-

Examples where a verbal root has CV, CCV, CVC, CVCV, etc. are as follows:

a) C_1 = Series I, C_2 = Series I, C_3 = Series II, C_4 = Series I: *bsəmbá#-jt'* "I did not see you", *bsəmgá#-jt'* "I did not take you", *dsəmq'ažá#-jt'* "I did not calm him/her", *dəbsərdár#-wajt'* "I introduce him/her to you", *dsəmsš'á#-jt'* "I did not kill him/her".

b) C_1 = Series I, C_2 = Series I, C_3 = Series I, C_4 = Series I: *bsə3^w3^wa#-wajt'* "I wash you", *dsəčh^wá#-jt'* "I endure him/her".

c) C_1 = Series II, C_2 = Series I, C_3 = Series II, C_4 = Series I: *jəlsərbá#-jt'* "I

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showed it/them to her”.

d) C_1 = Series I, C_2 = Series II, C_3 = Series II, C_4 = Series I: *dləmk'wabá#-jt'* “she did not wash him/her”.

e) C_1 = Series I, C_2 = Series II, C_3 = Series I, C_4 = Series I: *dəbməčhá#-n* “don’t endure him/her!”.

Though examples a), b) and c) are explained by the principle of sonority, examples d) and e) violate it. However, none of these examples have schwa before C_4 , as per Kuipers’ Rule. Therefore, Spruit’s Rule is also applicable to the three-consonant sequence ($C_2C_3C_4$): if a schwa does not appear before C_4 , it will then appear between C_2 and C_3 .

4. Conclusion

I conclude that the presence or absence of an unstressed schwa in Abkhaz can be predicted by the following rules:

- (1) A schwa cannot appear before C followed by both a and ə . (*Kuipers’ Rule*)
- (2) If Kuipers’ Rule does not apply in a two-consonant sequence CC' , and the sonority of C is lower than that of C' , or the sonority of C is the same as that of C' , then a schwa can appear between C and C' . In contrast, if the sonority of C is higher than that of C' , a schwa cannot appear between C and C' . (*the principle of sonority*)
- (3) If Kuipers’ Rule does not apply in a three-consonant sequence $CC'C''$, then a schwa can appear either between C and C' or between C' and C'' according to the principle of sonority.
- (4) If in a three-consonant sequence $-CC'C''$ a schwa does not appear before C'' , then it can appear between C and C' . (*Spruit’s Rule*)
- (5) Presumably, in a construction such as $-RCC'V$ -, the principle of sonority which operates between C of Series I and C' of Series II (or III) may take precedence over Kuipers’ Rule. On the other hand, in a construction such as $-TCC'V$ -, the principle of sonority which operates between both C and C' may be subordinate to Kuipers’ Rule. In constructions such as $-TRTTV$ - and $-TTTRV$ - Kuipers’ Rule takes precedence.
- (6) If there is a derivational boundary after a root consisting of C or CC in a verbal complex, then C following this root is not taken into account when

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considering the occurrence of a schwa. (*Trigo's Rule*)

(7) If Trigo's Rule applies in a three-consonant sequence, Spruit's Rule must also apply.

(8) If Kuipers' Rule operates on the last C''' of the four-consonant sequence $-CC'C''C'''V$, then the principle of sonority is in affect among the first three consonants ($CC'C''$). Therefore, a schwa can appear either between C and C' or between C' and C'' in keeping with the principle of sonority.

(9) If Trigo's Rule operates in the four-consonant sequence $-CC'C''\#C'''V$, then a schwa can appear between C and C' according to Spruit's Rule.

(10) In a four-consonant sequence $-CC'C''C'''V\#-$ (or $-CC'C''C'''VCV\#-$) involving a verbal root, a schwa can appear between C' and C'' according to Kuipers' Rule and Spruit's Rule.

Afterword

This article addresses the occurrences of unstressed schwa in Abkhaz, and not issues related to the vowel system. As mentioned in the introduction, there has been heated debate with regard to the vowel systems in the North West Caucasian languages⁵. The following three occurrences of schwa can be identified in Abkhaz: (1) a stressed schwa, (2) an unstressed schwa in a non-word-final position, and (3) an unstressed schwa in a word-final position (cf. *sbác^whanə* "I having scolded you" versus *sbác^whan* "I scolded you and ..."). In the case of (1), if the element C of the generic symbol " $C(a)$ " is *potentially* stressed, a stressed schwa appears after the consonant. Some examples cited as "minimal pairs", such as *ac'^wá* "apple" versus *ac'^wə́* "little stick" (Chirikba:2003:20), do not represent the phonemic contrast $/a/$ versus $/ə/$, but merely indicate that C before $ə$ has a *potential* stress, that is, $ac'^wə > ac'^w(ə) > ac'^wə́$. Therefore, in order to regard a schwa as a phoneme, examples representing the contrast $/Cə/$ versus $/C/$ in the unstressed condition are needed. In the case of (2), if my discussion is correct, the contrast $/Cə/$ versus $/C/$ in the unstressed condition does not exist, because the presence or absence of an unstressed schwa is predictable. Therefore, (3), above, will be central to the discussion as to whether or not a schwa can be regarded as a phoneme. To the extent that I have been able to investigate, the contrast $/Cə/$ versus $/C/$ in the unstressed condition is found merely in the examples of those word-final suffixes *-nə* and *-n* which mark the positive form of absolutive and the past indefinite respectively, cf.

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minimal pairs, such as *sbác^wha-nə* vs. *sbác^wha-n* (*ə* after the suffixes *j^w*, *g^j*, *č^r* mentioned in 2.9 is regarded as a free variant). If a verbal root ends in a consonant, *ə* appears before the suffix *-n*, cf. *s-á-s-nə* (I-it-hit-Absolutive) ‘‘I having hit it’’ vs. *s-á-sə-n* (I-it-hit-Past Indefinite) ‘‘I hit it and...’’. Since *ə* before *n* is phonologically irrelevant, these forms can also be considered as minimal pairs, hence */sásnə/* vs. */sásn/*. These forms which constitute minimal pairs are merely derived from restricted intransitive verbs, because the forms with word-final stress derived from the other intransitive verbs do not constitute minimal pairs, cf. *d-ca-né* (he/she-go-Absolutive) ‘‘he/she having gone’’ vs. *d-cá-n* (he/she-go-Past Indefinite) ‘‘he/she went and...’’, and the absolutive form derived from a transitive verb deletes an agent marker, cf. *d-g^wá-ta-nə* (him/her-Preverb-notice-Absolutive) ‘‘having noticed him/her’’ vs. *d-g^wá-s-ta-n* (him/her-Preverb-I-notice-Past Indefinite) ‘‘I noticed him/her and ...’’. Consequently, the functional load of */nə/* vs. */n/* would appear to be low, but this will have to be investigated in the future, in texts.

Notes

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1. This Abkhaz consonant system is taken from Chirikba (2003:18). Though according to Chirikba, *j^w* is regarded as a semivowel, this is a voiced pharyngeal fricative from the point of view of sonority. Therefore, in this article, *j^w* is treated as a consonant belonging to Series I.
2. Also cf. Kuipers (1976:108): ‘‘Lomtadidze’s statement that Abkhaz *schwa* is usually stressed reflects the fact that an Abkhaz unit */p/* will always have its variant *[pə]* in stressed position.’’
3. This word is a verbal complex on which Trigo’s Rule operates. For Trigo’s Rule see 2.3.
4. Also, some clusters *ps*, *pš*, *pš^j*, *pš^w* cannot insert a schwa into their consonants, e.g. *apsrá* ‘‘death, to die’’, *ápssara* ‘‘to sweep’’, *apst^r’wé* ‘‘animal’’, *ápsta* ‘‘valley’’, *apsš^jará* ‘‘to take a rest’’, *ápsš^wa* ‘‘Abkhaz’’; *ápšrá* ‘‘to look’’, *apšt^r’wé* ‘‘color’’; *pš^jbá* ‘‘4’’, *ápš^jgara* ‘‘to introduce’’; *ápš^wma* ‘‘master’’.
5. For a brief summary of this discussion, see Kuipers (1976:100-103).

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