

Lateral deletion and more or less excrecent schwa in Upper Chehalis*

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1. Introduction¹

Complex consonantal clusters are a trademark of Salish languages. Certain types of clusters, however, are prone to simplification. For instance, Blake (2000) discusses the simplification of coronal clusters in Lillooet (St'at'imcets) and Comox. In this paper, I will present evidence for the simplification of certain sonorant clusters in Upper Chehalis (Q^way'áytq; henceforth: UCh), and thus clarify the alternations found in many morphemes. More specifically, I will discuss the deletion of /l/ before /m/.²

Restrictions on /l/-deletion will also shed light on the prosodic status of unstressed schwa and on the prosodic domain structure in UCh. I will argue that unstressed schwa in closed syllables is prosodically relevant and should be considered as epenthetic, rather than excrecent, as so far assumed. Moreover, I will suggest that there generally is a prosodic word boundary between lexical and grammatical morphemes in UCh.

2. Preliminaries: Sonorants and schwa in UCh

As observed in Kinkade (1998), clusters of a consonant and a sonorant (/m, n, l, w, y/) are generally broken up by schwa, irrespective of the sonorant's syllabic position.³ When unstressed, such schwa is considered as excrecent, i.e. phonologically irrelevant, and not transcribed at all. Only stressed schwa, inserted into otherwise vowelless morphemes to bear stress, is marked in phonemic transcription and is assumed to play a role in syllabic structure. Both types of schwa are exemplified below.⁴

- (1) a. EPENTHETIC SCHWA
 √čə́lp [čə́lp] ‘open-weave basket’ (no. 2310; 1963: p. 192)
 √tə́mš ‘earth, ground’ (no. 1929)
 √tə́lp-n ‘put away’, TR (no. 2062)
- b. EXCRESCENT SCHWA
 √čə́lp [čə́lp] ‘open-weave basket’ (no. 2310; 1963: p. 192)
 √kʷútwi? [kʷótwə?] ‘maple’ (no. 729; 1963: 192)
 s√č’úp’w=ačn-stw-n ‘squeeze with the arm’, CAUS
 [č’óp’wačənstwən] (no. 529; 1963: 192)

Observe that unstressed schwa breaks up both clusters in ‘complex coda’ position (as in the first and the third example in (1b)) and those in ‘coda-onset’ position (as in the second example in (1b)).⁵

In this paper, I will argue that in fact there is a distinction between the prosodic status of schwa in the two contexts. This distinction is reflected in the way /l/-deletion applies in UCh.

3. /l/-deletion: Data

3.1 Root-final /l/

The following set of examples presents roots ending in /l/ and forms where this /l/ appears intact.

- (2) ROOTS
- | | | | |
|------|-----------------------|----------------|------------|
| i. | √t’úl- | ‘come, arrive’ | (no. 2092) |
| ii. | √tawáli- ⁶ | ‘leave’ | (no. 840) |
| iii. | √λ’áli- ⁷ | ‘look for’ | (no. 944) |
| iv. | √šə́wil- | ‘road’ | (no. 1836) |
| v. | √čə́wáli- | ‘wife’ | (no. 462) |
- a. NO DELETION
- | | | |
|------|------------------------------------|--------------------------|
| i. | √t’úl-t | ‘come’, INTR NCONT |
| | s-t’a√t’úl-aʔ-s | ‘their coming back’ |
| ii. | √tawáɬ-x ^w ⁸ | ‘leave sth’, TR NCONT |
| iii. | √λ’á·li-x ^w | ‘look for’, CAUS NCONT |
| iv. | √šə́wɬ-amš | ‘road’, PL |
| v. | s√ləq-ál-√čə́wəl-n | ‘buy a wife’, INTR NCONT |

In the following sets of examples involving the same roots, /l/ is sometimes deleted when the following morpheme begins with /m/.

- (3) a. DELETION BEFORE PREVOCALIC /m/
- i. BEFORE FULL VOWELS

$s\sqrt{t'}\acute{u}[l]$ -mis-n	'come to', REL CONT
$\sqrt{t}\acute{a}w\acute{a}[l]$ -mi ^{FB}	'he left you'
$s\sqrt{t}\acute{a}w\acute{a}[l]$ -mi-n-anš ^{FB}	'I am going to leave you'
$s\sqrt{\lambda'}\acute{a}\cdot[l]$ -mal-n'	'look for', DETR CONT
$s\sqrt{\lambda'}\acute{a}\cdot[l]$ -mit-n	'look for', MDL CONT
\sqrt{sit} - $\sqrt{š}w\acute{a}[l]$ -mit-n	'cross a road', MDL CONT
$s\sqrt{č}aw\acute{a}[l]$ -mit-n	'marry', MDL CONT
$s\sqrt{qin}$ -ál- $\sqrt{č}wa[l]$ -mis-n	'want to have as a wife', REL CONT
 - ii. BEFORE SCHWA

$\sqrt{t'}\acute{u}[l]$ -mn	'come to', REL NCONT
$\sqrt{t}\acute{a}w\acute{a}[l]$ -mn ^{FB}	'shaman comes uncalled for'
- b. DELETION BEFORE PRECONSONANTAL /m/
- | | |
|---|----------------------------|
| $\sqrt{t'}\acute{u}[l]$ -ms-mulł | 'come to us', TR NCONT |
| $s\sqrt{t'}\acute{u}[l]$ -ms-mul-n | 'come to us', TR CONT |
| $\sqrt{\lambda'}\acute{a}\cdot[l]$ -m'ł | 'look for', DETR NCONT |
| \sqrt{sit} - $\sqrt{š}w\acute{a}[l]$ -m'=šulł | 'cross, intersect (roads)' |
- c. NO DELETION BEFORE WORD-FINAL /m/
- | | |
|---|---------------------------|
| \sqrt{sit} - $\sqrt{š}w\acute{a}l$ -m | 'cross a road', MDL NCONT |
| š-łáłł- $\sqrt{š}uwł$ -m | 'toward the road' |
| $\sqrt{č}aw\acute{a}l$ -m | 'marry', MDL NCONT |

The deletion applies before word-medial /m/, when the latter is followed by a full vowel (3ai), by (untranscribed) schwa (3a_{ii}) or by a consonant (3b), but not when /m/ is word-final (3c).

For some roots, forms are given with as well as without the final lateral, e.g. $s\sqrt{\lambda'}\acute{a}\cdot[l]$ -mal-n' or $s\sqrt{\lambda'}\acute{a}l$ -mal-n' 'look for', DETR CONT. Kinkade (p.c.) points out that there are some discrepancies between the speech of his informant and F. Boas' transcriptions. He suggests that this variation and the presence of apparent exceptions to /l/-deletion are due to the diachronic, rather than synchronic, character of the process.

An alternative explanation, that can unfortunately no longer be tested with the native speakers, is that lateral deletion is optional, possibly depending on the tempo and style of speech. In any case, there is sufficient consistency in the available data to make generalisations about the conditioning of the process, irrespective of its synchronic/diachronic status.

3.2 Lexical suffix-final /l/

Facts are similar with respect to /l/ at the end of a lexical suffix. Evidence available involves only one of two lexical suffixes with /l/ as the final consonant, =łnal(i)- 'mouth, lips, jaw' (LS182) (cf. fn. 3), but in an abundance of forms.

- (4) a. LATERAL DELETION BEFORE PREVOCALIC /m/
- i. BEFORE FULL VOWELS

$\sqrt{s}áw$	saw= $\text{ɪni}[l]$ -mal-n	‘ask questions’, DETR CONT	(no. 1717)
$s\sqrt{x}ás$	= $\text{ɪna}[l]$ -m’it-n	‘curse’, MDL CONT	(no. 2318)
 - ii. BEFORE EXCRESCENT SCHWA

$\sqrt{x}ás$	= $\text{ɪna}[l]$ -m’n	‘curse at’, REL NCONT	(no. 2318)
--------------	------------------------	-----------------------	------------
- b. NO LATERAL DELETION BEFORE WORD-FINAL /m/
- | | | | |
|------------------------|------------------------------------|--------------------------------|------------|
| $\sqrt{x}ás$ | = $\text{ɪna}[l]$ -m | ‘curse’, MDL NCONT | (no. 2318) |
| $\sqrt{q}^w\acute{a}t$ | = $\text{ɪna}[l]$ -m ^{FB} | ‘lightning’, MDL NCONT | (no. 1577) |
| $\sqrt{c}^w\acute{a}x$ | = $\text{ɪna}[l]$ -m ^{FB} | ‘wash one’s mouth’, MDL NCONT | (no. 370) |
| $\sqrt{q}áma?$ | = $\text{ɪna}[l]$ -m | ‘hold one’s breath’, MDL NCONT | (no. 1418) |

Unfortunately, I found no examples of /l/-deletion in grammatical suffixes triggered by following /m/. This may seem exactly the opposite to Blake’s (2000) findings with respect to Lillooet and Comox, where coronal cluster simplification does apply to grammatical suffixes and spares lexical morphemes.⁹ I suggest, however, that the absence of evidence for /l/-deletion in grammatical suffixes in UCh may be due to a relatively small number of inflected forms with the relevant context listed in the dictionary, rather than to immunity of grammatical suffixes to deletion. On the other hand, the forms in (3) and (4) indicate that there is apparently no asymmetry in UCh analogous to Lillooet and Comox in this respect, i.e. lexical morphemes are not immune to /l/-deletion either.

3.3 Derived environment effect

Blake (2000) observes that coronal cluster simplification in Lillooet and Comox involves a derived environment effect, i.e. it is only operative across a morphological boundary. Morpheme-internally, such clusters remain intact. The following examples suggest that this might also be the case with /l/-deletion in UCh. However, it is difficult to draw definite conclusions since all the available forms contain /lm/ at the end of the word or at the end of the lexical domain. As will be argued below, these are contexts where /l/-deletion is inapplicable anyway. In any case, /lm/ is rather infrequent as a morpheme-internal sequence in UCh lexical morphemes and unattested in grammatical morphemes at all.

- (5) NO DELETION MORPHEME-INTERNALLY
- a. WITHIN ROOT

$t’a-s\sqrt{c}á$	ɪm -cš-t-n	‘he’s going back down’, REFL CONT	(no. 350)
$s\sqrt{y}álm$	^{FB}	‘helpers, hired help’	(no. 2437)
 - b. WITHIN LEXICAL SUFFIX

$=a\text{ɪ}m$	‘erect object’		(LS 28)
$t\sqrt{ʔuca}x^w$	= $a\text{ɪ}m$	‘he came to a sudden stop’	(no. 140)
= $ə\text{ɪ}m$		‘?’	(LS 119)
$\sqrt{ʔaq}^w$	= $ə\text{ɪ}m$	place name, ‘break up’	(no. 877)

4. Analysis

4.1 Generalisation

The generalization that can be made at this point is that /l/ is deleted before /m/ in any position, except before word-final /-m/. More specifically, (almost) all the instances of word-final /-m/ that fail to trigger /l/-deletion in the available data involve the same suffix: MDL NCONT. This is schematically represented below.

- (6) a. DELETION
 ...[l] + mV...
 ...[l] + mǝ...
 ...[l] + mC...
 b. NO DELETION
 ...l + m_{MDL}#

Observe that in all of the above contexts /m/ would be preceded by (excremental) schwa if /l/ were not deleted. The question now arises what *exactly* is the difference between the deletion and the non-deletion contexts. Since the examples of word-final /m/ that fails to trigger /l/-deletion involve one and the same suffix, does it follow that the non-deletion context is morphologically determined, i.e. deletion is blocked before a specific suffix? Or, is the context prosodically determined, i.e. /l/ deletes before every /m/ other than word-final? Finally, does the syllabic position of /l/ and /m/ matter?

Below I first consider arguments for and against a morphological account of /l/-deletion failure and proceed to an alternative prosodic account.

4.2 Morphological account?

The main argument in favour of this approach is that the available examples where /l/ fails to delete before /m/ involve the MDL NCONT suffix /-m/. More specifically, the suffix begins with schwa that can sometimes bear stress, as illustrated below.

- (7) a. sʷlǝt'-mit-n¹⁰ 'catch a fish', MDL CONT (no. 880)
 b. ʷlǝt'-ǝm idem, MDL NCONT

Although an exhaustive analysis of the Upper Chehalis stress system still needs to be carried out, stress generally tends to be restricted to lexical morphemes.¹¹ In (7a) stress falls on schwa in a weak root, rather than on a full vowel in the following grammatical suffix, MDL NCONT /-mit-/. On the other hand, when a weak root is followed by the MDL NCONT suffix /-m/, stress falls onto the schwa preceding the suffix, rather than onto the root (7b). This behaviour might suggest special prosodic properties of the MDL NCONT suffix. In spite of the fact that no (schwa) vowel is usually transcribed initially, one might conclude that the suffix is in fact vowel-

initial, unlike its MDL CONT counterpart /-mit-/, and this is the reason why it does not trigger /l/-deletion.

There is, however, some counterevidence to this proposal. For one, a few forms suggest that /l/-deletion can also be blocked before another word-final suffix consisting only of /m/. Consider the forms below.

- (8) a. DELETION
- | | | |
|------------------|--|----------|
| √taw'á[l]-mi | 'he left you-SG', TR NCONT | (p. 368) |
| s√taw'á[l]-mal-n | 'he is leaving me', TR CONT | |
| s√taw'á[l]-wal-n | 'he is leaving the other one', TR CONT TOP OBJ | |
- b. NO DELETION
- | | | |
|------------|------------------------------|--|
| √taw'áɫ | 'he left him', TR NCONT | |
| s√taw'áɫ-n | 'he is leaving him', TR CONT | |
| √taw'áɫ-m | 'he was left', PASS NCONT | |

The forms in (8a) exhibit /l/-deletion root-finally. On the other hand, /l/ is preserved in (8b) when word-final or followed by a word-final suffix /m/ other than MDL NCONT, specifically by the PASSIVE NCONT suffix /-m/. These (very few) forms suggest that it is the phonological shape and the word-final location of the suffix that counts, rather than its morphological identity.

Moreover, the results of the analysis presented in Rowicka (2001b) imply that the MDL CONT suffix /-mit-/ should in fact be analysed as a complex form consisting of the general MDL marker /-m-/ and the TRANSITIVISER /-(i)t/. Following this line of analysis, there is just one MDL suffix /-m/, rather than two suffixes (for the CONT and for the NCONT aspect) affecting /l/-deletion in different ways.

The morphological account of the restrictions on /l/-before-/m/-deletion should therefore be discarded as untenable. In the following section I will consider a prosodic approach to the problem.

4.3 Prosodic account

4.3.1 Word-final /l+m/ cluster?

Having rejected a morphological account of the restrictions on /l/-deletion, I conclude that word-finality is the relevant context: /l/-deletion is non-applicable before word-final /m/. The question arises why word-final /m/ should have a different effect on the preceding /l/ than word-medial /m/.

If one ignores the intervening unstressed schwa as prosodically irrelevant, /l/ and /m/ form a cluster that apparently is allowed as a complex coda in a word-final syllable, but not in a word-medial one. Notice, however, that word-medial /l/ is also deleted before /m/ in a syllabic onset, i.e. when /l/ would be the only coda consonant, as in √tawá[l]-mi 'he left you (SG), NCONT. If deletion applies to /l/ in a simple coda, it is unlikely it would not affect it in a complex coda, even if the following /m/

were extrametrical word-finally. This approach does therefore not lead to a satisfactory explanation of the restrictions on /l/-deletion.

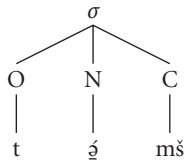
A more plausible account is available if one takes into consideration the schwa preceding /m/. Its syllabic status is addressed in the following section.

4.3.2 *More or less excremental schwa*

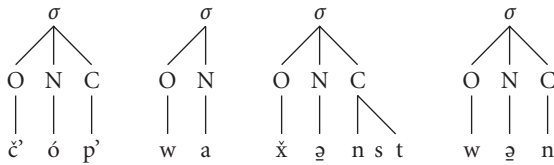
I suggest that unstressed schwa breaking up complex coda clusters, like word-final /lm/, is prosodically relevant and functions as a syllable nucleus. Its presence makes possible the formation of a more optimal syllabic structure. I therefore consider it as epenthetic, just like stressed schwa. On the other hand, the presence of schwa before a prevocalic sonorant is not required by syllable structure considerations: the surrounding consonants can unproblematically be syllabified into a simple coda and a simple onset without it.

Compare the structures below.

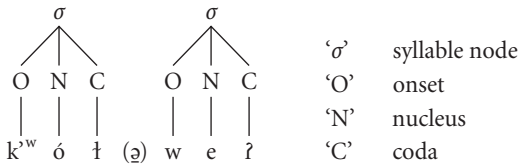
- (9) a. STRESSED EPENTHETIC [ə]



- b. UNSTRESSED EPENTHETIC [ə]



- c. EXCREMENTAL [ə]



The form in (9c) can be parsed into two syllables with no complex margins without excremental schwa (in brackets). On the other hand, the forms in (9a,b) could hardly be syllabified without epenthetic schwa.

What is puzzling about unstressed epenthetic schwa in Upper Chehalis is that it can only appear in contexts of excrement, i.e. next to sonorants. It cannot break up obstruent-only clusters, although that would facilitate the formation of more optimal syllabic structure.¹²

The recognition of the syllabic status of some unstressed schwa instances provides a simple account of /l/-deletion. The context in which /l/-deletion is blocked involves /l/ in the onset. /l/ in the coda is deleted, which is cross-linguistically a common phenomenon. The fact that /l/-deletion is triggered by another sonorant, here /m/, in the following onset is not unusual either. It can be attributed to some version of the Syllable Contact Law (cf. Vennemann 1988) that favours a greater sonority distance between coda-onset sequences.

4.3.3 /l/-deletion and prosodic domains

The above conclusions do not yet solve all the problems involved in Upper Chehalis /l/-deletion. This approach predicts that unstressed epenthetic schwa should also be present word-medially between /l/ and preconsonantal /m/, i.e. in /l+mC/ contexts, and it should prevent /l/-deletion. Words such as $\sqrt{t'ú[1]}$ -ms-mulł 'come to us', TR NCONT are wrongly expected to be $*\sqrt{t'ú[1]}$ -(ə)ms-mulł instead, with /l/ salvaged from deletion by epenthetic schwa. However, /l/-deletion fails only in front of word-final /(ə)m/.

A possible explanation becomes available when the stress system of Upper Chehalis is considered. As mentioned above, stress is generally restricted to lexical morphemes. This suggests that the domain of stress assignment in Upper Chehalis generally includes only lexical morphemes. However, examples such as (7b) show that a word-final monoconsonantal grammatical suffix, such as MDL NCONT /-m/, is included in the domain of stress assignment so that stress can be assigned to the schwa between the root and the suffix, rather than to the root schwa. 1 and 3 NCONT OBJ suffixes, /-c/ and /-n/ respectively, exhibit a similar behaviour. Consider the NCONT forms below.

- (10) a. STRESS ON ROOT
 $\sqrt{t'ú}$ $\sqrt{c'áx^w}$ -ci 'he washed you (sg)' (p. 367)
 $\sqrt{t'ú}$ $\sqrt{c'áx^w}$ -tm 'he was washed'
- b. STRESS AFTER ROOT
 $\sqrt{t'ú}$ $\sqrt{c'áx^w}$ -əc 'he washed me'
 $\sqrt{t'ú}$ $\sqrt{c'áx^w}$ -ən 'he washed him'

I argue that such monoconsonantal suffixes do get included in the same prosodic domain as the preceding root because this results in a more optimal structure than if they were prosodically cliticised to that domain as a subsyllabic element.

All the available examples where preconsonantal /m/ fails to trigger /l/-deletion before it involve /l/ in a lexical morpheme followed by /m/ in a grammatical morpheme (followed by other grammatical morphemes). I suggest that there is a prosodic boundary in between such /l+m/ sequences that prevents the formation of a syllable with pre-sonorant schwa as the nucleus. This kind of domain structure is represented in (11a) below. /l/ cannot be parsed into an onset position and falls prey

to the coda /l/-deletion. On the other hand, a monoconsonantal grammatical suffix that is not followed by any other grammatical suffixes is parsed together with the preceding lexical morphemes. This is represented below (where subscript 'PW' stands for 'prosodic word').

- (11) a. ${}_{PW}\{ {}_{PW}\{t'u[l]\}_{PW} ms-mult\}_{PW}$ 'come to us', TR NCONT
 b. ${}_{PW}\{ {}_{PW}\{čawá\}-(ə)m\}_{PW}$ 'marry', MDL NCONT
 ${}^*{}_{PW}\{ {}_{PW}\{čəw\}_{PW} -m\}_{PW}$

In other words, /l/-deletion in Upper Chehalis turns out to be due to a fairly straightforward case of coda /l/-deletion due to the Syllable Contact Law. Apparent exceptions to it are due to prosodic domain boundaries within grammatical words.

5. Conclusion

In this paper I have presented evidence for /l/-deletion before /m/ in Upper Chehalis. The process has been shown to affect /l/ in the syllabic coda position. The analysis has implication for the interpretation of the prosodic status of schwa. It leads to the conclusion that unstressed schwa in closed syllables functions as a syllabic nucleus. Although it only appears in excrescence contexts, i.e. adjacent to sonorants, it is prosodically relevant, unlike truly excrescent schwa that appears in open syllables.

The difference in the application of /l/-deletion before word-medial and word-final /m/ has been attributed to a difference in prosodic domain parsing. While lexical and grammatical morphemes are preferably separated by a prosodic word boundary, a single monoconsonantal grammatical suffix is more optimally included into the prosodic word domain containing the preceding root and may therefore affect stress assignment and other phonological processes, like /l/-deletion, within that domain.

Notes

* Thanks to M. Dale Kinkade, the TINdag audience and the anonymous LIN reviewer for their useful comments on an earlier version of this paper. I would also like to acknowledge the support of the Netherlands Organisation for Scientific Research (NWO) in the form of Postdoctoral Research position no. 3000-75-019 and the NATO Science Fellowship that made possible my research on Upper Chehalis and visits to Canada and the USA in 2000 and 2001. The usual disclaimers apply.

1. Upper Chehalis is an extinct Native American language of the Tsamosan Salish branch, previously spoken in Washington State, south of Seattle, USA. All data in this paper come from the work by M. Dale Kinkade (see references). Unless otherwise indicated, examples come from

Kinkade (1991). Numbers refer to the dictionary page (e.g. p. 367), to the dictionary item number (e.g. no. 1962), to the number in the lexical suffix list (e.g. LS 182) or the number in the grammatical affix list (e.g. GA 36). Forms with superscript 'FB' are attributed in the dictionary to F. Boas. Transcription follows that used in the dictionary, except for [ǰ] which replaces [x̣]. Unless otherwise stated, examples involve 3SG OBJ and/or SUBJ forms. The abbreviations are as follows: (IN)TR – (in)transitive, DETR – detransitive, (N)CONT – (non)continuative, SUBJ – subject, OBJ – object, REFL – reflexive, MDL – middle, PASS – passive, RECIP – reciprocal, TOP OBJ – topical object, SG – singular, PL – plural and FREQ – frequentative. The symbols are as follows: '√' stands before the root, '=' stands before a lexical suffix, '-' stands before a grammatical suffix and '·' stands before a reduplicant.

2. Sporadic forms in the (1991) dictionary illustrate /l/-deletion in front of /w, y/ (cf. the third form in (8a)). This suggests that /l/-deletion before /m/ is an instance of a more general tendency for sonorant cluster simplification which happens to be best represented in the available data.

3. /l/ is also accompanied by exrescent schwa and therefore argued to be a sonorant in Kinkade (1998). For an analysis of epenthetic and exrescent schwa in UCh, see Rowicka (2001a).

4. As argued in Kinkade (1998), there is no underlying schwa in UCh (the opposite has been argued e.g. for Spokane Salish (cf. Black 1996)). Nor is there schwa in UCh as a result of vowel reduction (as opposed e.g. to Halkomelem Salish).

5. The latter types of clusters seem, however, less regularly affected. Notice, for instance, no schwa marked before the two instances of /w/ in [č'óp'wax̣ənstwəŋ] (instead of *[č'óp'wax̣ənstəwəŋ]).

6. As argued in Rowicka (2001b), the vowel /i/ included at the end of many morphemes in the (1991) dictionary in fact involves a separate TRANSITIVE suffix.

7. Many forms with this root are recorded with [ʔ] instead of [l], mostly in intervocalic position, e.g. √λ' aʔ-əm 'look for', MDL NCONT.

8. This example illustrates the tendency of /l/ to devolve to /h/ word-finally and before (voiceless) obstruents.

9. Blake accounts for the fact within the framework of Optimality Theory in terms of high ranking of FAITHFULNESS constraint relating to lexical morphemes and lower ranking of those referring to grammatical morphemes. For another case of FAITH (ROOT) » FAITH (AFFIX), see van de Weijer (this volume).

10. The alternation between stressed schwa and unstressed [a] in the root is a regular phenomenon in Upper Chehalis. See Kinkade (1998) and an analysis in Rowicka (2001a).

11. For an analysis of stress in some other Salish languages and lexical accent systems in general, see Revithiadou (1999).

12. As suggested in Rowicka (2001a), the requirement that, in the absence of another vowel, schwa accompany sonorants (but not obstruents) can be related to the voicing of sonorants that needs 'vocalic support' (as opposed to the voicelessness of obstruents in UCh). This incorporates the observation that languages with exrescent vowels accompanying sonorants usually have no voiced obstruents.

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