Halkomelem Nonsegmental Morphology

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Halkomelem shows considerable diversity in the formal expression of morphological categories, as is frequenly the case in Salishan languages. In addition to suffixation and a limited amount of prefixation, one finds reduplication, infixation and stem mutation. The latter three constructions are examined here with the intent of raising questions regarding their status in linguistic theory. It will be shown that they share properties which set them apart from simple segmental morphology such as prefixation or suffixation. Not only are they dependent on the phonological form of the stem (e.g., reduplication copies the stem), but all three represent formal modifications of an internal stem in Halkomelem, to the exclusion of any prefixes except reduplicative material.

The term "nonsegmental morphology" will be used here to denote any morphological construction in which a constituent morpheme is not represented by a sequence of adjacent phonological segments. Reduplication is nonsegmental, as the reduplicative element has no underlying phonological representation independent of the stem which it reflects, although at the point in the derivation after the stem is reduplicated, the construction will meet the criteria for segmental morphology (providing the reduplicative form is not infixed). For example, one reduplicative pattern discussed below is an allomorph of the Halkomelem imperfective, consisting of a copy of the first stem consonant and vowel (with stem vowel reduction).

1a.	t̓íləm sing	1b.	t̓it̓ələm̓ singing (imp.)
2a.	lémət look at it	2b.	lél̓əmət looking at it

It is not simply that Halkomelem has an imperfective prefix with allomorphs including [t̓í-] and [lé-]; rather, the reduplicative element constitutes a copy of part of the stem, so it seems inappropriate to think of the morpheme as having a phonological shape until the stem undergoes a copying rule.

Infixation is nonsegmental in that the infixed element may interrupt a monomorphemic stem, so that while the infix consists of a sequence of adjacent phonological segments, the stem does not. One allomorph of the

Halkomelem plural is the infix [-l̓-], which interrupts roots in the following examples:

3a.	pus	cat	3b.	púl̓əs	cats
4a.	técəl	arrive	4b.	tél̓əcəl	they arrive

The position of the infix is based on the phonological shape of the root, appearing after the first consonant and vowel in these examples, so the morpheme [pus] is interrupted by the infix in [púl̓əs].

Stem mutation is nonsegmental in that a morphological category is signalled by change in the phonological string of the stem rather than by phonological segments independent of the stem. Two Halkomelem imperfective patterns involving stem mutation are illustrated in the following examples:

5a.	pqʷat	break it (substance)	5b.	paqʷt	breaking it
6a.	c̓əkʷx̌t	fry it	6b.	c̓ekʷx̌t	frying it

The former example shows resyllabification (coincidentally mimicking metathesis) and the latter shows an alternation between a lax (shwa) and a tense vowel.

In addition to considering nonsegmental morphological constructions themselves, we should look at the relationship between such constructions. Halkomelem shows nonsegmental morphology in at least the following categories:

i. imperfective--denoting an ongoing action or process, or one customary in the past;

ii. plural--expressing marked plurality, either many participants or an act carried out repeatedly;

iii. diminutive--denoting smallness, endearment or deprecation;

iv. resultative--denoting a resultant state (and usually signalled doubly by nonsegmental morphology and a stative [s-] prefix).[2]

Because of certain limitations in the data, the syntagmatic relationships between these categories will receive rather brief treatment here, but a second point, the allomorphic relationships between formal constructions, will be explored in somewhat more depth. A variety of formal devices may be used in expressing each of the four categories above, depending on such factors as the phonological shape of the stem, the presence of other morphological categories and, apparently, lexical government.

A question arises as to whether or not various distinct formal constructions expressing apparently the same

morphological category constitute allomorphs of one morpheme. Generally, in inflectional morphology complementary forms with the same function and meaning are considered to be allomorphs of one morpheme, as in the case of the English plural forms boxes, oxen and teeth. In derivational morphology, we may be willing to live with a variety of distinct morphemes with similar (or at least overlapping) functions and meanings, as in the following nominalizations where the suffixes ion and ing are grammatically equivalent yet probably considered to be morphemically distinct (cf., Aronoff, 1976).

the extermination of ants
the shooting of hunters

Aronoff (1976) restricts allomorphy to elements which are phonologically related, as in the case of the nominal suffixes ation, ition, ution and ion, where allomorphy rules (resembling phonological rules, but morphologically triggered and restricted to specific morphemes) alter a basic Ation form. However, he excludes inflectional morphology from his primarily English-based study and apparently he does not find analogous problems, where allomorphs share no phonological resemblance, in derivational morphology.

I will assume below that the four Halkomelem categories in question are to be treated more like the English plural--that formal diversity represents allomorphy, although I am by no means convinced all four categories are inflectional (assuming that there is a distinction to be made between derivation and inflection). Because of its high frequency, it seems plausible to consider the Halkomelem imperfective an inflectional category. The resultative, while fairly frequent, shows a characteristic of derivational morphology, namely, resultative forms are distributionally distinct from their nonresultative counterparts. Stems which may co-occur with the highly productive transitive suffix [-t] seem to occur freely in the resultative construction instead, but the two constructions do not co-occur (although resultative stems take the causative [-stəxʷ] suffix).

7a. yáḵʷət break it (transitive)
7b. syáy̓əḵʷ broken (resultative)
7c. syáyəḵʷstəxʷ have broken it (causative-resultative)

The plural and diminutive fall somewhere in between the

other two categories in that there are no clearcut reasons for considering them to be either inflectional or derivational (beyond, perhaps, a metalinguistic assumption that categories of their semantic domains should be considered inflectional if they are productive).

1. Imperfectives. The Halkomelem imperfective may be signalled by CV- reduplication, resyllabification, stress shift, or vowel tensing (not all of these being mutually exclusive).[3]

8a.	ɬak̓ʷ fly	8b.	ɬáɬək̓ʷ flying
9a.	p̓ét̓θət sew it	9b.	p̓ép̓ət̓θət sewing it
10a.	x̌tek̓ʷəm carve	10b.	x̌ət̓ək̓ʷəm̓ carving[4]
11a.	pqʷat break it	11b.	paqʷt breaking it
12a.	čək̓ʷx̌t fry it	12b.	ček̓ʷx̌t frying it
13a.	x̌éyəq̓əm smoke	13b.	x̌éy̓q̓əm̓ smoking

The formal expression of the imperfective is predictable, based on the shape of the stem. Stems of the shape CV, CVC or CX̌CVX reduplicate, while those of the form CVX or CəCCX do not (the former undergoing resyllabification and the latter showing a tense vowel in the imperfective).

It seems interesting that the allomorphs of the im-

X = segment

perfective should be phonologically predictable, particularly since the formal devices expressing this category look like the products of phonological operations. This raises the question of where in the derivation of a word reduplication and other nonsegmental morphological processes take place. It is clear from the Halkomelem data that the phonological shape of a derived stem, not an underlying root shape, is relevant in determining the appropriate imperfective allomorph. Stems of the shape CCV in combination with the transitive suffix [-t] occur as independent roots in the form CəC, with a medial shwa vowel and loss of the final vowel. While the transitive stem undergoes resyllabification (as do other CCVX stems), the root form reduplicates.

14a.	tset put it near	14b.	tə́sət putting it near
15a.	təs get near	15b.	tətəs getting near
16a.	t̓q̓ʷat break it	16b.	t̓aq̓ʷt breaking it
17a.	t̓əq̓ʷ break	17b.	t̓ət̓əq̓ʷ breaking

Conversely, the lexical suffix [-aləs] 'stitch, eye(let)' may trigger root vowel reduction, so a CVC root such as [ɬic̓] 'get sliced' will then pattern as a CCVX stem.

18a. ɬíc̓ət sliced it 18b. ɬíɬəc̓ət slicing it

19a. ɬc̓áləst slice out a piece of weaving 19b. ɬəc̓əl̓əst slicing...

On the other hand, the activity suffix [-els] triggers vowel reduction only in the aspectually unmarked form, indicating that imperfective formation precedes vowel reduction in this case:

20a. yeq̓ fall 20b. yéy̓əq̓ falling

21a. yəq̓él̓s fell (trees) 21b. yéy̓əq̓əl̓s felling

22a. p̓ét̓θət sew it 22b. p̓ép̓ət̓θət sewing it

23a. p̓t̓θəl̓s sew 22b. p̓ép̓ət̓θəl̓s sewing

While the corpus in this area is rather limited, it suggests that some rules precede those which form imperfectives. I suspect, however, that the vowel reduction rule triggered by the lexical suffix [-ələs] falls into the class of morphologically governed rules Aronoff calls allomorphic rules, which precede the phonological derivation, and hence it is not clear that the imperfective formation rules must be ordered within the phonology proper. Similarly, the rules accounting for the CəC root shape of CCV stems probably precede the phonological derivation and therefore do not require us to order imperfective formation rules within the phonology.

While the shape of the stem determines the imperfective allomorph, it is not the whole stem that is relevant, since prefixes are ignored. For example, the [x^{w}-] prefix is ignored in (24). If it were not, the imperfective would show resyllabification rather than reduplication, as in (25), where the initial consonant is not a prefix:

24a. x^{w}ɬáq̓^{w}əst slap in the face 24b. x^{w}ɬáɬəq̓^{w}əst slapping in the face

25a. x^{w}k̓^{w}at pull it 25b. x^{w}ak̓^{w}t pulling it

Similarly, the [c-] 'have/make' prefix is ignored in (26), unlike (27) where the initial consonant is part of the root and triggers resyllabification:

26a. csîtən have/make a basket 26b. csîsətən̓ making a basket

27a. cset tell him/her 27b. cəsət telling him/her

Assuming the imperfective is an inflectional category (which seems plausible), the order of elements in (24) and (26) runs counter to normal expectations. That is, inflectional morphemes are generally external to deri-

vational morphemes, so we would expect an inflectional prefix to precede a derivational prefix such as [c-] or [x^{w}-]. This suggests that reduplicative elements are not actually affixes in Halkomelem.

1.1. Reduplicating Imperfectives. As noted above, stems of the shape CV, CVC or CVCVX show CV- reduplication in the imperfective. In most cases, the reduplicative element is stressed and the stem vowel is reduced:

28a. c̓ew̓ət help him/her 28b. c̓éc̓əw̓ət helping him/her
29a. sx̓ʷəm wade out 29b. sísəx̓ʷəm̓ wading out

However, if the stem vowel is shwa, stress tends to fall on the penultimate syllable:

30a. ɬə́n̓əm weave 30b. ɬəɬə́nəm̓ weaving

Stems with a strong initial syllable (containing a long vowel, V?, Vh or root-final V) maintain stress on the stem and the reduplicative element has unstressed shwa:[5]

31a. t̓e?t try it 31b. t̓ət̓é?t trying it
32a. t̓ᶿuum pick berries 32b. t̓ᶿət̓ᶿúúm̓ picking berries

I will assume here that the reduplicative syllable is as-

signed stress if the vowel is tense (not shwa)--possibly by the reduplication rule--but that a special stress rule reassigns stress to strong syllable stems (with subsequent reduction of unstressed vowels):[6]

	c̓ewət	t̓e?t
reduplication	c̓éc̓ew̓ət	t̓ét̓e?t
restressing	.....	t̓et̓é?t
reduction	c̓éc̓əw̓ət	t̓ət̓é?t

This solution is not altogether satisfactory, since the restressing rule undoes the previous stress assignment, rather than reducing it to, say, secondary stress.

A further complexity is found in the following examples:

33a. yəq̓ʷ burn 33b. həy̓q̓ʷ burning
34a. lək̓ʷát break it 34b. hə́l̓k̓ʷət breaking it
35a. le?š put it away 35b. hə́l̓əš putting it away

A reduplicated voiced sonorant followed by shwa becomes [h], including Cə forms which arise through reduplicating strong syllable stems as in (35). However the reduplicative element bears stress, unlike other Cə redupli-

cations. I assume here that a second restressing rule applies after the rules mentioned above, shifting stress to the first syllable:

	le?š
reduplication	lélé?š
restress	lelé?š
reduction	ləlé?š
restress 2	lélé?š
sonorant to h	hélеš
reduction	héləš

Again, previous stress placement rules are undone in the derivation. Further, vowel reduction must apply twice, the final instance reducing the strong syllable maintained in imperfectives such as (31), where the second restressing rule does not apply.

1.2. Resyllabification. Stems beginning in a consonant cluster (ignoring prefixes) show a stressed vowel between these consonants in the imperfective. The quality of the vowel is predictable (cf. Jones, 1976); if the vowel is followed by a consonant cluster it is tense ([a] or [e]), and otherwise it is shwa:

36a.	ɬx̌íləš stand	36b.	ɬəx̌éləš (be in the process of) standing
37a.	pqʷat break it	37b.	paqʷt breaking it
38a.	k̓ʷšet count it	38b.	k̓ʷéšt counting it
39a.	k̓ʷšáləst count stitches	39b.	k̓ʷəšéləst counting stitches

Note that (38) and (39) are based on the same root [k̓ʷše] and that the vowel of the lexical suffix [-ələs] in the latter blocks vowel tensing.

Further, the distinction between [a] and [e] is predictable; [a] occurs if the following consonant is rounded and [e] occurs elsewhere. While this may at first seem to be a case of metathesis (cf. 37 and 38), the vowel of the perfect stem may be shwa and in such cases the imperfective vowel still follows the distribution noted above:[7]

40a.	θx̌ət push it	40b.	θex̌t pushing it
41a.	ɬqʷət wet it	41b.	ɬaqʷt wetting it

I assume here that a morphologically triggered rule inserts a stressed shwa between the initial consonants and that the vowel is subsequently tensed to [a] or [e] in the appropriate phonological contexts as described

above:

	ɬx̌iləš	k̓ʷšet	k̓ʷšaləst
vowel insertion	ɬəx̌iləš	k̓ʷəšet	k̓ʷəšaləst
truncation	.....	k̓ʷəšt	.....
tensing	.....	k̓ʷéšt	.....
reduction	ɬəx̌ələš	.....	k̓ʷəšələst

1.3. CVCC Stems. CVCC stems show an alternation between shwa in the aspectually unmarked form and either [e] or [a] in the imperfective. At an earlier point in the investigation of these forms, Michael Jones and I felt the tense imperfective vowel of these forms was related to the tensing rule mentioned above for CCV stems (Jones, 1976); however, additional data has not supported this position. While the tense vowel may have been historically predictable, it does not appear to be so currently. In a number of cases the vowel is [a] when the third consonant is a rounded back velar (as opposed simply a rounded second consonant in section 1.2):

42a. čək̓ʷx̌t fry it 42b. ček̓ʷx̌t frying it

43a. x̌əpx̌t sprinkle it (sand) 43b. x̌epx̌t sprinkling it

44a. čəc̓q̓ʷt grind it 44b. čac̓q̓ʷt grinding it

45a. c-qʷəmx̌ʷ skinny 45b. yə-qʷámx̌ʷ-əl getting skinny

However, other forms do not conform to this and some variation has been noted:

46a. xʷ-θəyqʷt dig it 46b. xʷθeyqʷt ~ xʷθayqʷt digging it

47a. ɬəp̓t̓θt suck it into the mouth 47b. ɬep̓t̓θt ~ ɬap̓t̓θt sucking it into the mouth

Some of these stems co-occur with the intransitive [-m] suffix, in which case the tense vowel appears in both the perfect and imperfective forms:

48a. čác̓q̓ʷəm fall apart (from cooking) (cf. 44) 48b. čác̓q̓ʷəm falling apart

49a. x̌épəx̌əm fall (leaves) (cf. 43) 49b. x̌épx̌əm falling

This pattern also occurs in three stems for which corresponding transitives have not been elicited:

50a. ɬác̓q̓ʷəm snore 50b. ɬác̓q̓ʷəm snoring

51a. k̓ʷéɬəqəm make a popping sound 51b. k̓ʷéɬqəm making ...

52a. x̌éyəqəm smoke 52b. x̌éyqəm smoking

It is clear that the transitive [-t] suffix is not instrumental in the phonological alternation, since the independent root forms occur in some cases and they follow the same pattern as the transitive stems:

53a. c̓ok^{w}x̌ fry (cf. 42)	53b. c̓ek^{w}x̌ frying
54a. sowq̓ seek	54b. sewq̓ seeking
55a. sowq̓t look for him	55b. sewq̓t looking for him

No attempt will be make to analyze these here, other than to suggest that the tense vowel may have to be taken as underlying and, conceivably, that it is preserved in imperfective forms because of a morphologically triggered stressing/tensing rule. This does not account for the preservation of the tense vowel in the intransitive [-m] perfect forms. In any event, such stems do not reduplicate, although they presumably would meet the structural description for imperfective reduplication, assuming the rule applies to stems beginning in CV.

1.4.Imperfective allomorphs. Phonological criteria seem to determine the formal expression of the Halkomelem imperfective: stems beginning in a consonant cluster undergo vowel-insertion (resyllabification), triconsonantal stems (e.g., CVCC(-t)) show (possibly preserve) a tense vowel, and other stems undergo CV- reduplication.

Clearly these processes are not purely phonological --despite the fact the choice of one process or another is based on phonological criteria--since it is a morphological category, not a phonological context, which triggers the processes in the first place. On the other hand it is at least possible that these processes are formally stated as rules within the phonology. That is, they could interact with phonological rules in such a way that they would necessarily be ordered among them. I simply point out the alternatives here, as I currently have no basis for choosing between them.

We have seen above that some rules must alter the shape of stems before the imperfective rules apply. For example, transitive CCV-t stems undergo resyllabification, but their independent root counterparts evidently have the shape CəC when the imperfective rules apply and therefore undergo reduplication instead. Similarly, the lexical suffix [-ales] triggers reduction of the root vowel in stems such as [ɬic̓] 'get sliced', meeting the struc-

tural description for resyllabification instead of reduplication. A critical question to which no definitive answer can yet be given is whether such rules known to precede imperfective formation are allomorphic rules (cf. Aronoff, 1976) or part of the phonology.

2. Plurals. Halkomelem plurals are formed by CəC reduplication, Cə reduplication or [-i̓-] infixation--the latter being the most productive.[8] I am not aware of phonological criteria distinguishing forms undergoing CəC reduplication from those which take the infix. Cə reduplication is confined to a small class of stems beginning in CəC, and hence the class is partially defined by phonological shape, although the majority of stems meeting this criterion do not show this pattern.

While the selection of plural allomorphs is evidently lexically determined in part, there is some interaction between morphological categories, as almost all diminutives pluralize by infixation, regardless of what allomorph their nondiminutive counterparts take. The interaction of morphological categories will be considered in section 5.

2.1. CəC reduplication. There are no restrictions on the

phonological shape of stems which undergo CəC reduplication. Those stems which do preserve stress on the stem vowel do so if the stem has a vowel as its second segment:

56a. sí̓lə grandparent	56b. səlsí̓lə grandparents
57a. t̓íləm sing	57b. təlt̓íləm they sing

CCV stems, however, resyllabify and lose their vowel:

58a. pqʷat break it	58b. pəqʷpə́qʷ(ə)t break them
59a. q̓pət gather it	59b. q̓ənq̓ə́p(ə)t gather them

If this were simply a matter of reduplicating the consonants of CCV stems, one might predict forms such as *[pəqʷpqʷát], assuming the reduplicative form takes on an epenthetic vowel somehow. The surface shapes suggest that the input to the rule is not CCV, but CəC(V). If we wish to maintain that the input to the imperfective formation rules is CCV in these cases, it seems necessary to assume some allomorphy rule inserts shwa in these stems before the application of the CəC reduplication rule, call it a syllable readjustment rule:

pqʷat

syllable readjustment	pəqʷat
CəC reduplication	pəqʷpə́qʷat
vowel reduction	pəqʷpə́qʷət

I will assume here that stress placement in CəC reduplications is a function of the reduplication rule, stressing the first vowel of the stem. This accounts for the reduction of the root-final vowel in plurals such as (58b), if we assume an unstressed vowel is reduced to shwa. Further, imperfective plurals suggest that the shwa of the reduplicative syllable is generally due to vowel reduction. Although the data are limited, at least some plural stems show a stress difference signalling the imperfective:

60a.	təltíləm they sing	60b.	tíltələm they are singing
61a.	kʷərkʷíntəl they fight	61b.	kʷíŋkʷəntəl they are fighting
62a.	kʷəɬkʷíɬəw they live with inlaws	62b.	kʷíɬkʷəɬəw they are living with inlaws

If both plural forms are the result of one reduplication rule, the imperfective forms can be explained by a stress shift rule morphologically triggered by the imperfective, shifting stress to the reduplicative form. The unstressed vowel in each case is subsequently reduced to shwa:

	tiləm (pl.)	tiləm (imp. pl.)
CVC redup.	tiltíləm	tiltíləm
imp. stress	.....	tíltiləm
vowel reduct.	təltíləm	tíltələm

The analysis awaits further data, but it seems likely that the reduplication pattern is actually CVC, with stress-conditioned vowel reduction.

2.2. Cə Reduplication. A small group of stems appear to undergo either Ci infixal reduplication or Cə reduplication with [i] replacing shwa in the second syllable (these being alternative analyses of the same data.) In the majority of cases the stem begins in CəC (although most CəC stems do not follow this pattern), making it difficult to tell which analysis is the better:

63a.	kʷə́mləxʷ root	63b.	kʷəkʷímləxʷ roots
64a.	šə́yəɬ older sibling	64b.	šəšíyəɬ older siblings
65a.	xʷə́ləmxʷ Indian	65b.	xʷəxʷíləmxʷ Indians

These also show the sonorant-to-h alternation (see 1.1

above) if the initial sequence RəR (where R is a voiced sonorant) would otherwise result:

66a. lə́x^{w}tən blanket 66b. həlíx^{w}tən blankets
67a. nə́qəm dive 67b. hənə́qəm they dive

Other forms, if they are to be related, suggest that the pattern is Cə with vowel change in the stem. Two plurals show [e] instead of [i] as the vowel (although these could be transcription errors):

68a. qə́ləm̓ eye 68b. qəqə́ləm eyes
69a. sx̌ə́nə foot/leg 69b. sx̌əx̌ə́nə legs[9]

This is strikingly parallel to resultatives discussed in section 4 below, where [i] and occasionally [e] is inserted (the difference being apparently lexically governed). Further, one stem shows Cə reduplication despite the fact that the first syllable of the singular has a tense vowel:[10]

70a. stə́wən niece/nephew 70b. stətə́wən nieces/nephews

In addition, two long-vowel forms have been observed to have Cə plurals:

71a. stuup stove 71b. stətúup stoves
72a. spaal̓ raven 72b. spəpáal̓ ravens

While Cə reduplication with [i~e] insertion seems to me to be the more obvious solution, the facts do not preclude infixal CV reduplication. However a similar problem arises in resultatives below, where additional data tend to suggest that [i~e] insertion is more promising.

2.3. Infixation. The infix [-l̓-] seems to be productive outside the domain of actions and processes, where CəC reduplication predominates. For example, the following loan words show infixed plurals:

73a. čif chief 73b. čél̓əf chiefs
74a. méčəs match 74b. mél̓əčəs matches

The infix occurs in most cases after the first consonant and vowel of the stem, taking an epenthetic shwa after it unless followed by a lateral:

75a. x^{w}-ɬáq̓^{w}əst slap in face 75b. x^{w}-ɬál̓əq̓^{w}əst slap them in the face
76a. técəl arrive 76b. tél̓əcəl they arrive
77a. mí$^{\theta}$t̓$^{\theta}$ət mash it 77b. mél̓ət̓$^{\theta}$ət mash them

78a. šeɬ door, path 78b. šeʔəlɬ doors, paths

79a. qʷɬə́y̓šən shoe 79b. qʷəlɬə́y̓šən shoes

Note in (75) that an initial prefix is ignored, although a root consonant cluster is interrupted in (79), illustrating that the infix occurs after the first consonant of stems which begin in a consonant cluster. The lowering of [i] to [e] shown in (73) and (77) is regular, although it is confined to the environment of the plural infix and may therefore be morphologically governed.

A putative exception to the placement of the infix is diminutive stems, as the infix occurs in the reduplicative prefix (see section 3 below for diminutive reduplication):

80a. šeɬ door/trail

80b. šeʔšɬ little door, path

80c. šəɬéʔšɬ little doors, paths

81a. pus cat

81b. puʔps little cat

81c. pəlúʔps little cats

But this hardly constitutes an exception to the principle of ignoring prefixes, since the diminutive form can

be thought of as nonsegmental. That is, it is not clear whether reduplicative "prefixes" are prefixes in the sense of segmental morphology. However, the position of the infix within the phonological string seems exceptional in (80) and (81), since it precedes the stem vowel rather than following it. This is evidently phonologically conditioned--possibly by the 'strong syllable' environment discussed in section 1.1. Although almost all the forms in which the context is met are diminutives, the following example suggests the infix precedes the sequence V?;

82a. sqé?eq younger sibling 82b. sqəlé?eq younger siblings

Further, the infix preceding a long vowel is at least a marginally acceptable alternate to Cə reduplication in (83):

83a. stuup stove 83b. stəlúup ~ stətúup stoves

Why strong syllables should be ignored remains a mystery at present.

3. Diminutives. Diminutives are signalled solely by reduplication. The two basic diminutive reduplicative pat-

terns are CV? and Ci?, the distribution of the two being phonologically predictable. Ci? occurs wherever one would expect Cə?, given the distribution of Cə reduplication in imperfectives (but also including CCV stems, unlike imperfectives), and CV? occurs elsewhere:[11]

84a. š-cepθ uncle/aunt	84b. š-ce?cpθ uncle/aunt (dim.)
85a. s-kʷáti crazy	85b. s-kʷá?kʷti? crazy (dim.)
86a. š-kʷé?əm basket	86b. š-kʷi?kʷé?əm̓ little basket (dim.)
87a. s-kʷθe? island	87b. s-kʷi?kʷθé? little island (dim.)
88a. ləplít priest	88b. li̓plít priest (dim.)
89a. s-t̓θúum berry	89b. s-t̓θi?t̓θúum̓ little berry (dim.)

The distribution of CV? and Ci? can be accounted for by stress conditioning, with Ci? occurring whenever the reduplicative form does not take (primary) stress, paralleling the analysis of imperfective reduplication. At least two analyses are possible: either [i] is inserted whenever Cə? would arise or the basic pattern is Ci? reduplication with subsequent vowel assimilation just in case the reduplicative form maintains (primary) stress. While I have no reason to prefer one analysis

over the other at present, I give sample derivations for the latter analysis, leaving the alternative to the reader:

	s̓t̓θuum	pus
Ci? reduplication	s̓t̓θí?t̓θuum̓	pí?pus
stress shift	s̓t̓θi?t̓θúum̓	.....
vowel assimilation	.....	pú?pus
vowel truncation	.....	pú?ps
	s̓t̓θi?t̓θúum̓	pú?ps

4. Resultatives. The resultative construction is doubly marked by a stative prefix [s-] and nonsegmental morphology. The latter is indistinguishable from the imperfective except that a tense vowel--[i] or [e]--occurs whenever the form would otherwise not have a tense vowel. The discussion below is confined to such cases.

Resultatives are most frequently based on monomorphemic stems and, as noted above, do not co-occur with transitive (noncausative) suffixes. The following forms can be analyzed either as Cə reduplications accompanied by the replacement of the stem vowel by [i~e] or as Ci~e reduplicative infixes (the distinction between [i] and [e] being lexically governed in either case):

90a.	p̓ək^{w} to surface	90b.	sp̓əp̓ék^{w} afloat (result.)
91a.	təs get near	91b.	stətés be near
92a.	θk̓^{w}ət straighten it	92b.	sθəθék̓^{w} be straight
93a.	k̓^{w}əɬ spill	93b.	sk̓^{w}ək̓^{w}íɬ poured, spilled
94a.	k̓^{w}šét count it	94b.	sk̓^{w}ək̓^{w}íš be counted
95a.	θəx^{w} vanish	95b.	sθəθíx^{w} gone

Other forms suggest the pattern is Cə (i.e. CV) reduplication plus the insertion of [i] or [e] within the stem. The following forms (incidentally showing the sonorant to [n] shift and loss of [h] after a fricative) exemplify cases where the tense vowel cannot be part of a reduplicative infix:

96a.	mə́n̓ə offspring	96b.	s(h)ən̓mné? already have had a child
97a.	nə́qəm dive	97b.	s(h)ən̓qém̓ dived and still under
98a.	snə́x^{w}əɬ canoe	98b.	s(h)ən̓x^{w}íɬ arrived by canoe

It seems likely that the second syllable receives a tense stressed vowel in these forms. The imperfective of 'canoe', for example, could serve as a basis for deriving (98b):

99a.	c-nə́x^{w}əɬ get/have a canoe	99b.	c-nə́n̓x^{w}əɬ getting/making a canoe

Forms with lexical suffixes do not necessarily reduplicate, although they may have a tense vowel in the resultative. The lexical suffix [-šen] 'foot/leg' shows a resultative (non-underlying) [i] vowel in (100b):

100a.	c̓əšə́n-əm get up on	100b.	sc̓əšín̓ be standing on

While this lexical suffix occurs most frequently with a reduced vowel (shwa), it shows its full grade [e] with some stems:

101. məšén-əm take shoes off (root: me? 'come off')
102. lək^{w}šén get a broken foot (root: lək^{w}(a) 'break')

This suggests that the [-šín̓] form arises through tensing or replacing the shwa of the weak form as in (100a) rather than through preserving an underlying [i]. Again, the vowel cannot be derived by reduplicative infixation suggesting that this is not the source for the tense vowels of (90) through (95) either.

5. Syntagmatic relationships. Several factors are of interest in considering how nonsegmental constructions combine, including which categories co-occur, their derivational order and the formal relationships between them.

5.1. Plural combinations. The plural combines with the other three categories. As resultative and imperfective plurals are formally parallel, they will be discussed together.

5.1.1. Imperfective and resultative plurals. The imperfective or resultative functions as the base for plural formation in the cases where the combined categories are signalled by devices which normally signally them individually. In one case, the plural seems to function as the base, however the regular imperfective and resultative formation rules are not part of the derivation.

Multiple reduplication occurs in only one class, where imperfective reduplication is not transparent: the h-reduplicating imperfectives, where an initial sonorant becomes [h]:

103a.	mə́q̓ət swallow	103b.	hə́mq̓ət swallowing
103c.	məq̓mə́q̓ət swallow (pl.)	103d.	həmə́mq̓ət swallowing (pl.)
103e.	s-(h)əmíq̓ full	103f.	s-(h)əmmíq̓ full,pl.
104a.	ləkʷ́at break it	104b.	hə́lkʷət breaking it
104c.	ləkʷlə́kʷət break them	104d.	hələ́lkʷət breaking them

104e. s-(n)əlíkʷ broken 104f. s-(n)əllíkʷ broken (pl.)

I assume that the imperfective or resultative is the base for CVC plural formation in these examples, and that internal [h] elides as does the second syllable shwa of the resultative plural (probably conditioned by the following stressed syllable):

	s-həmíq̓	hə́mq̓ət
CVC reduplication	s-həmhəmíq̓	həmhə́mq̓ət
h elision	s-əməmíq̓	həmə́mq̓ət
shwa elision	s-əmmíq̓	.....
	səmmíq̓	həmə́mq̓ət

Plural infixation occurs in resultative constructions based on CCV roots:

105a. pqʷat break it 105b. spəpíqʷ broken

105c. spələpíqʷ broken (pl.)

106a. sq̓et tear/split it 106b. (s)səsíq̓ torn

106c. (s)sələsíq̓ torn (pl.)

This clearly illustrates the relevance of phonological criteria. In other contexts (such as transitives, discussed below) CCV roots undergo plural reduplication

rather than infixation. Note too that h-reduplicating resultatives undergo very similar derivations, yet they reduplicate in the plural.

CCV stems apparently form their imperfective plurals on imperfective bases:

107a.	θx̌ət push it	107b.	θex̌t pushing it
107c.	θəx̌θə́x̌ət push (pl.)	107d.	θəx̌θéx̌t pushing (pl.)
108a.	pqʷat break it	108b.	paqʷt breaking it
108c.	pəqʷpə́qʷət break them	108d.	pəqʷpáqʷt breaking them

While it is conceivable that the plurals could serve as the stems here, with imperfective vowel tensing occurring after CVC reduplication, the reverse order is quite plausible and it accords with the derivation of h-reduplicating forms:

	θx̌ət
imp. rules	θéx̌t
CVC reduplication, etc.	θəx̌θéx̌t

CVCC stems may form plurals on imperfective or resultative stems, although the reverse analysis is not out of the question:

109a.	ɬəyx̌t eat it	109b.	ɬeyx̌t eating it
109c.	ɬəyɬəyx̌t eat (pl.)	109d.	ɬəyɬéyx̌t eating (pl.)
110a.	ɬəpt̓θt suck it into the mouth	110b.	ɬept̓θt sucking it into the mouth
110c.	ɬəpɬəpt̓θt suck them into the mouth	110d.	ɬəpɬépt̓θt sucking them into the mouth

Thus:

	ɬépt̓t	ɬəpɬəpt̓t
CVC reduplication, etc.	ɬəpɬépt̓t	--------
imperfective form.	--------	ɬəpɬépt̓t

Again, it seems preferable to assume imperfective formation precedes plural formation, falling in line with the derivational order of the forms above.

One irregular root lends support to the derivation of complex plurals from imperfective or resultative bases in the case of stems which undergo internal change. Consider the following:

111a.	x̌ʷčénəm run	111b.	x̌ʷánčənəm̓ running
111c.	x̌ʷələnčénəm they run	111d.	x̌ʷənx̌ʷánčənəm̓ they are running

The imperfective plural clearly is not based on the sim-

ple plural, which is formed by infixation. The only apparent choice here is to derive the imperfective plural from the imperfective. The imperfective is, by the way, not altogether irregular if we assume the underlying form to be [x̌ʷnčenəm]; like other stems beginning in a consonant cluster, it undergoes resyllabification with subsequent tensing to [a].[12]

Stems which undergo CV reduplication in the imperfective or resultative do not combine these forms with the plural (other than cases such as 103d and 105c). Instead, the plural form is modified by shifting stress to the reduplicated syllable, exemplified for imperfectives in (60) through (62) and for resultatives in the following:

112a. ɬéq̓ot lay it down 112b. sɬéɬəq̓ laid out
112c. sɬéq̓ɬəq̓ laid out (pl.)
113a. yák̓ʷot break it 113b. syáy̓ək̓ʷ broken
113c. syák̓ʷyək̓ʷ broken (pl.)

Although I have no simple plural forms corresponding to these imperfectives, on the basis of other CVC plurals, where the stem retains the stressed vowel (cf. 57b),

this pattern can be accounted for by plural reduplication plus a shifting of the stress to the reduplicated syllable. This is the only instance where stems clearly fail to undergo their regular imperfective or resultative formation rules. Given that other stems undergo the latter rules before plural formation, it is surprising that these forms do not. A possible explanation is that CVC reduplication will not operate on CV reduplications, although opaque h-reduplicating forms undergo CVC reduplication (perhaps because they are opaque). In any event, these forms seem to be exceptions to the regular derivational order.

5.1.2. Diminutive plurals. Most diminutive plurals are formed by plural infixation in the diminutive stem, as noted above. Such forms will not be elaborated on; however, one should note that the selection of the plural allomorph in this case is determined by the morphological context--the fact that the stem is diminutive--not properties of the root. A second diminutive plural construction--Cə reduplication--occurs rather infrequently and is optionally replaced by the more productive pattern:

114a. sq̓ʷəlé̓š bird
114b. sq̓ʷíq̓ʷləš bird (dim.)
114c. sq̓ʷəlq̓ʷəlé̓š birds
114d. sq̓ʷəq̓ʷə́lə̓š birds (dim.)
115a. sqʷəmé̓y̓ dog
115b. sqʷíqʷmi? dog (dim.)
115c. sqʷəmqʷəné̓y̓ dogs
115d. sqʷəqʷə́mi? dogs (dim.)
116a. sx̌é̓nə foot
116b. sx̌ix̌né? foot (dim.)
116c. sx̌əx̌é̓nə feet
116d. sx̌əx̌é̓nə feet (dim.)
117a. məstíməxʷ person
117b. mə́mstíməxʷ person (dim.)
117c. məlstíməxʷ people
117d. mə́məstíməxʷ people (dim.)[13]

These diminutive plurals may be modifications of diminutive stems with stress either maintained on or shifted to the stem vowel. If so, they show the same derivational order as the productive pattern.

5.2. Diminutive combinations. The diminutive combines with the other three categories, operating on imperfective or resultative bases, but forming the base for plural infixation, as noted above. Since diminutive plurals have already been described, they are discussed here only in the context of a more complex construction, the diminutive imperfective/resultative plural.

5.2.1. Diminutive imperfectives and resultatives. The imperfective or resultative stem functions as the base

for diminutives. Predicates denoting actions or processes do not seem to occur as simple diminutives. In elicitation, imperfective diminutives are given instead (although these predicates can also occur as diminutive resultatives or diminutive plurals).

An exhaustive listing of imperfective and resultative diminutives would go beyond reasonable space limits, so a few typical examples will be cited, illustrating that the diminutive is the expected reduplication of the base formed by the other category:

118a. hə́lc̓t filling it (ləc)
118b. hi?hə́lc̓t filling it (dim.)
118c. s-(h)ə́lc̓ full
118d. seélc̓ full (dim.)[14] (s-he?hə́lc̓)
119a. c̓əc̓é?t putting it on
119b. c̓i?c̓əc̓é?t ditto (dim.)
119c. sc̓əc̓é? on
119c. sc̓i?c̓əc̓é? ditto (dim.)
121a. k̓ʷeɬt pouring it (kʷɬe-)
121b. k̓ʷi?k̓ʷéɬt ditto (dim.)
121c. sk̓ʷək̓ʷíɬ spilled
121d. sk̓ʷe?k̓ʷək̓ʷíɬ ditto (dim.)
122a. x̌epx̌t sprinkle it
122b. x̌i?x̌épx̌t ditto (dim.)
122c. sx̌epx̌ sprinkled
122d. sx̌i?x̌épx̌ ditto (dim.)

While examples (121) through (122) may seem irregular,

since normally the stem vowel is reduplicated, it turns out that the imperfective and resultative stem vowels are never copied in the diminutive (with one exception noted below). I have suggested elsewhere (Hukari, 1977) that the imperfective/resultative stem receives stress in the derivation prior to diminutive formation, blocking the copying of the vowel (or causing the copy vowel to reduce).

Stems which undergo CV reduplication in the imperfective (with a tense vowel) are unusual in showing reduplicative infixation for the diminutive:

123a. ɬáɬəǩʷ flying 123b. ɬəɬáʔɬəǩʷ ditto (dim.)

124a. p̓ép̓əǩət feeling it 124b. p̓əp̓éʔp̓əǩət ditto (dim.)

125a. q̓ʷaq̓ʷəqʷaʔqʷt clubbing him on the head 125b. q̓ʷəq̓ʷáʔq̓ʷəqʷaʔqʷt ditto (dim.)

When the reduplicated vowel is shwa in the imperfective, the diminutive form precedes the imperfective stem:

126a. ɬəɬónəm̓ weaving 126b. ɬiʔɬəɬónəm̓ ditto (dim.)

This is the only clear case of reduplicative infixation.

5.2.2. Complex diminutive forms. Three nonsegmental categories can combine in the following derivational order: imperfective or resultative, diminutive and, last, plural. As with simple diminutives, the plural allomorph is the infix:

128a. sc̓iʔc̓əc̓éʔ on, dim. 128b. sc̓əliʔc̓əc̓élʔ on (dim. pl.)

129a. piʔpaqʷt breaking it (pqʷa-) 129b. pəliʔpaqʷt breaking it (dim. pl.)

130a. ɬiʔɬəɬónəm̓ weaving 130b. ɬəliʔɬəɬónəm̓ weaving. (dim. pl.)

The stems which undergo diminutive infixation, however, do not seem to occur in this construction. They can occur simply as diminutive plurals or as double diminutive plurals:

131a. ɬəɬíʔɬələm̓ singing (dim.) 131b. ɬəlíʔɬələm̓ sing (dim. pl.)

132a. ɬəɬáʔɬəǩ flying (dim.) 132b. ɬiʔɬəɬáʔɬəǩʷ flying (double dim.)

132c. ɬəliʔɬəɬáʔɬəǩʷ flying (double dim. pl.)

Diminutive seems to be the only nonsegmental category which can occur doubly in a construction, probably emphasizing smallness. If the initial syllable of the diminutive bears primary stress, apparently the double

diminutive reduplicative element does not take stress and reduces to shwa (assuming it is the initial element):

133a. k̓ʷə́šəm̓ counting (k̓ʷše-) 133b. k̓ʷí?k̓ʷəšəm̓ counting (dim.)

133c. k̓ʷək̓ʷí?k̓ʷəšəm̓ counting (double dim.)

Elsewhere, the double diminutive element is Ci? and the simple diminutive element reduces (again, assuming the double diminutive reduplicative form is first):

134a. qʷə́m̓x̌ʷəl̓ getting thin (qʷəmx̌ʷ) 134b. qʷi?qʷə́m̓x̌ʷəl̓ ditto (dim.)

134c. qʷi?qʷəqʷə́m̓x̌ʷəl̓ getting very thin (double dim.)

6. Observations. While this preliminary study has approached Halkomelem nonsegmental morphology in an informal manner, it provides a context for raising a number of questions concerning the nature of nonsegmental morphology and rules of the lexicon.[15]

6.1. Affixal and nonaffixal morphology. The question arises as to whether segmental and nonsegmental morphology are formally distinct and, if so, in what ways. The preceding sections have shown that Halkomelem nonsegmental morphemes stand in rather special formal relationships to stems; first, the phonological shape of the stem determines the realization of the morpheme and, second, the stem does not include segmental prefixes. These seem to be areas of potential difference between segmental and nonsegmental morphemes.

While the shape of the stem is critical to the realization of nonsegmental morphemes, it can also play a role in segmental morphology, although I think a distinction can be made. The shape of the stem may determine allomorphic selection and possibly even morphemic selection (in derivational morphology). An example of such selection is given by Aronoff: comparative adjectives are formed with the _-er_ suffix in English if the stem is monosyllabic or disyllabic and ends in _-y_. I will assume here that it is not material whether we view this as morphemic selection or allomorphic selection (with _more_ as another allomorph in the latter view). Here it is the distribution of a form that is at issue, not its shape. We can speak of a constant allomorphic shape and its distribution with respect to stems. An analog in nonsegmental morphology is the distribution of CV reduplication as opposed to resyllabification

in Halkomelem imperfectives. Phonological criteria determine which process (i.e. general allomorph) is appropriate, but in addition, the realization of the form is a function of some operation on the stem. It is in the latter area that nonsegmental morphology is unique.

The second characteristic of Halkomelem nonsegmental morphology is that it operates on roots, ignoring nonreduplicative prefixes. This raises the question of whether or not morpheme boundaries occur in nonsegmental morphological constructions. Surely morpheme boundaries cannot occur within stem mutations, unless these can be analyzed as infixes and, in turn, we find that infixes are flanked by boundaries. It is not obvious that infixes and reduplicative elements are set off from stems by boundaries in Halkomelem. The fact that reduplicative elements may in turn be reduplicated (e.g. 118b) and infixes go into reduplicative elements (30c) while segmental prefixes are ignored (75b) suggests boundaries may not be present. On the other hand, certain processes are sensitive to reduplicative elements. We noted that CVC plural formation cannot apply on CV

reduplicated imperfectives. Yet again, opaque h-reduplications may be reduplicated in turn for the plural (103d), so it is not clear that a boundary per se is relevant.

6.2. Derivational order. As noted above, nonsegmental morphology seems to operate on roots in Halkomelem. Does this reflect derivational order, or is it a characteristic of the processes which spell out the shape of the construction? The answer seems to be the latter. If we assume that the sequential order of morphemes in a construction generally reflects derivational order, then process morphology in Halkomelem is infixal, violating this order. While this may be axiomatic for infixation, it could be less obvious than it is in Halkomelem, as the position of an infix could be determined by the phonological shape of the stem--disregarding all morpheme boundaries--which is not the case in Halkomelem plural infixation, where segmental prefixes are ignored. The contrary argument would be that plural infixation is earlier in the derivation than any segmental prefixation, which strikes me as implausible. This observation carries over to reduplication.

Given that Halkomelem process morphology is infixal--in the sense of operating on the root rather than the full stem--the next question is whether the grammatical and phonological operations which form such constructions are distinct . Moravcsik (1976) claims infixation is a two-stage process, with the infixal element starting out as either a prefix or a suffix which is subsequently moved into the stem. This could be extended to reduplication, if copying and infixation are treated as formally distinct processes. I am not aware of evidence for or against a two-stage analysis of the Halkomelem plural infix, athough this seems implausible for reduplication, as I would expect to find cases in Halkomelem or closely related languages where the reduplicative element precedes derivational prefixes or follows derivational suffixes. That is, one would anticipate cases where copying takes place but not infixation and, as far as I know, this situation does not occur in Halkomelem or its neighbors.

I can conceive of at least three analyses of infixation and reduplication:

i. the entire formation process (including placement) is done in the lexicon by word formation rules before the phonological derivation;

ii. formal shapes are concatenated as prefixes or suffixes (including copied elements) in the lexicon by word formation rules and infixed later, possibly by phonological rules;

iii. morphemic features are assigned by word formation rules in the lexicon, triggering processes in the phonology.

While (iii) may turn out to be correct, it makes the weakest claims about the relationship between morphology and phonology. The preferable alternative is (i), in which all morphological processes are in the lexicon.. Evidence from Luiseño suggests that in at least some cases reduplication must precede some phonological rules (the typical case) and follow others. As the Luiseño material has been widely cited in the literature,I will not repeat it here (cf. Munro and Benson (1973), Wilbur (1973), Anderson (1975), Hyman (1975) and Aronoff (1976)). If it turns out to be the case that reduplication rules are ordered within the phonology (and I suspect this is generally not necessary) then (i) is untenable. I leave this as an open issue.

6.3. Allomorphy. The term allomorph is used here in referring to distinct representations of morphemes (or

classes of representations in case of processes) where the difference is not a product of automatic phonological operations. For example, the distinction between CV reduplication and resyllabification in the Halkomelem imperfective has not been treated here as a consequence of a phonological rule. While phonological criteria determine which process is appropriate, the processes are triggered by a morphological category, not a phonological context. An alternative analysis is logically possible, where all imperfectives reduplicate but under certain conditions the stem is truncated, making the reduplication opaque:

	pq^{w}a-t break it
Imperfective reduplication	p-pq^{w}at
truncation	p-q^{w}at
vowel insertion, etc.	paq^{w}t

An analogous solution could be posited for CVCC stems which show vowel tensing in the (surface) imperfective. Without independent motivation, such solutions seem implausible, adding a level to the derivation that contributes nothing beyond reducing allomorphy to phonological

operations. The solution becomes more interesting if, as a linguistic universal, all cases of allomorphy where the distribution of allomorphs is phonologically conditioned are reduceable to plausible phonological explanations. If this can be maintained, our metatheory would select the seemingly more abstract analysis involving opaque reduplication over positing a number of separate allomorphs.

At least some cases of allomorphy are not phonologically predictable in Halkomelem. Leaving aside the distinction between CVC reduplication and infixation for the moment, we have seen that Cə reduplication in the plural has no apparant phonological conditioning. If this is accepted as a genuine case of allomorphy (as opposed to a phonologically reduced version of CVC reduplication) then rules spelling out morphological processes may operate at an allomorphic as opposed to morphemic level. I point this out since, if reduplication is done by word formation rules, then apparently such rules may spell out allomorphs. If so, some formal device other than a word formation rule must relate morphologicaly parallel but formally distinct construc-

tions such as CVC and Cə reduplicated plurals.

Similarly, if CVC reduplication and [-i-] infixation are allomorphs of one morpheme, then very different rules spell out the same morpheme in different contexts. Again, a phonological explanation seems unlikely since the distribution of the two types is not phonologically predictable. Further, the forms are not even remotely phonologically similar, making a phonological derivation of one from the other highly implausible.

Our findings seem to be at variance with Aronoff (1976), where word formation rules operate at the morphemic level and allomorphic differences are derived through allomorphy rules which resemble phonological rules but are morphologicallly governed. A possible revision would be to assign a morphological feature by means of a word formation rule and to allow allomorphy rules to spell out the form of the construction rather than simply to readjust a form derived through a word formation rule. This seems, however, to make the notion of a word formation rule seem trivial.

Footnotes

1 This work is confined to Vancouver Island Halkomelem (həlq̓əmin̓əm̓). I wish to thank Ruby Peter of Duncan and Ellen White of Nanaimo (originally of the Kuper Island area), who were my primary consultants.

2 This probably does not exhaust the categories expressed by nonsegmental morphology. For example, I ran across a durative form (c) in a text. While I was able to elicit similar forms for stems of the CCV shape, I still do not know if this construction is confined to such stems, as I have not been successful in extending the category to all predicates.

a. x̌cət figure it out

b. x̌ect figuring it out (imp.)

c. x̌e?x̌cit pondering on it (durative?)

3 My thanks go to Michael Jones, whose M.A. thesis provides a substantial contribution to the following discussion of imperfectives. Jones follows Thompson and Thompson (1971) in calling this category the "actual."

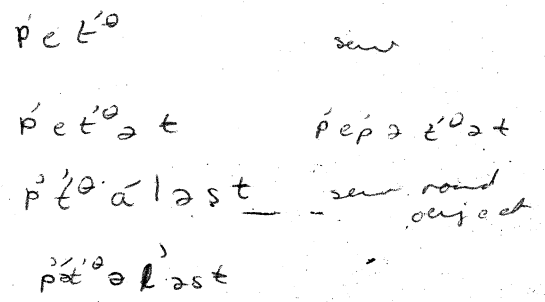
4 Voiced sonorants are glottalized in the imperfective excepting prefixes, stem-initial position, before a stressed vowel and certain other positions beyond the scope of this study. While glottalization is morphologically triggered, it does not seem to interact critically with the basic formation processes and so it is omitted from the discussion.

5 Simple CV roots are rare and the only appropriate example collected to date is a resultative, which should illustrate the same reduplication pattern.

a. xʷet bring it down

b. s-xʷəxʷe be already down

Root-final [h] is my analysis of roots with the shape CV in isolation but CVV when followed by transitive [-t]. See also Kuipers (1967) for an analysis of [Vh]



in Squamish.

a. s-ne name (nom.) /s-neh/

b. neet call him by name

c. həneət calling him by name

6 Rules will not be formally stated here, since their status is in question and any formalizations would contribute little to the discussion.

7 The root final vowel, if it is tense, is predictable: [a] if preceded by a round consonant and [e] elsewhere. The distinction between shwa and a tense vowel in this position is not predictable. I assume the distribution of [a] and [e] in this position is described by a redundancy rule.

8 Pluralization of predicates may apparently focus on the event (happening repeatedly) or a participant (i.e. several subjects or objects). I give stylized translations here, using a plural subject for intransitive predicates and a plural object for transitives, as these seem to me to be the preferred translations.

9 I have also recorded [sx̌əx̌inə].

10 Examples (70) through (72) show that the stem shape CəCV is not an essential criterion for this plural allomorph.

11 In addition, [ʔ] elides if followed by the sequence obstruent plus sonorant, as in (114b) and (115b).

12 The vowel [a], as opposed to [e], seems irregular here, however the distribution of [a] in imperfectives may be more complex than noted in section 1.2. A preceding round back-velar consonant may be the triggering factor in the presence of [a] in the following.

a. qʷsət put it in the water

b. qʷast putting it in the water

13 Note that the sonorant-to-h rule does not affect this form. A possible explanation is that these diminutive plurals are modifications of the diminutive singular and that the vowel of the diminutive element is lost after the sonorant-to-h rule (i.e. a counter-feeding order).

14 The [e] vowel in the diminutive element results from a dissimilation rule which operates form some speakers: diminutive [i] lowers to [e] when followed by a high vowel in a subsequent syllable.

15 I assume here that lexical rules are formation rules along the lines of Aronoff (1976) rather than redundancy rules as proposed by Jackendoff (1975).

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Pronominal paradigms in Sliammon

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This paper contains a presentation of the paradigms and phonology of the pronominal markers in Sliammon. No attempt is made to describe their usage fully, since an account of the syntax of the language is beyond the scope of this paper.

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