The Truth About Cowichan Imperfectives[1]

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The imperfective aspect[2] in Vancouver Island Halkomelem (Cowichan dialect) represents an interesting case of allomorphy where the distribution of the three major allomorphs is phonologically predictable, yet it is not at all clear they can be related by independently motivated phonological rules. Two analyses are discussed below: a morphological solution in which two independent lexical rules are phonologically conditioned and a phonological analysis where the results of CV-reduplication are rendered opaque by subsequent phonological processes.

We might well ask how this type of allomorphy arose and whether or not a language will make use of phonological criteria in lexical rules. As there seems to be no clear internal evidence for or against either solution, it is hoped that, ultimately, comparative evidence may offer a basis for deciding between the two solutions.

1. The Problem. Cowichan has essentially three major allomorphs of the imperfective aspect which can be roughly classified into reduplicating versus nonreduplicating forms. Their distribution is phonologically predictable as illustrated in the following examples.

I. Reduplicating Imperfectives: CV-stems.

1a.	c-cə́x^{w}əm	propose marriage	b. c-cə́cəx^{w}əm̓
2a.	cə́ləẇt	turn over (tr.)	b. cəcə́ləẇt
3a.	ce^{ʔ}t	put on top (tr.)	b. cəce^{ʔ}t
4a.	le^{ʔ}š	put away (tr.)	b. hə́l̓əš
5a.	hə́səm	sneeze	b. hə́^{ʔ}səm̓
6a.	^{ʔ}á^{ʔ}t̓ət	stretch (tr.)	b. ^{ʔ}á^{ʔ}t̓ət

II. Nonreduplicating Imperfectives.

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[1] I am indebted to Ruby Peter and to other members of the Cowichan Band for the data. Any errors are, I am sure, my own.

[2] The term *imperfective* may be peculiar to me. Read *actual* if you wish.

IIA. Vowel Insertion: CC-stems.

7a.	p̓k^{w}ət	let float (tr.)	b. p̓ək^{w}t
8a.	pq^{w}at	break (tr.)	b. paq^{w}t

IIB. Vowel Tensing: CəCC stems.[3]

9a.	c̓ək^{w}x̌t	fry (tr.)	b. c̓ek^{w}x̌t
10a.	cəq̓^{w}t	grind (tr.)	b. caq̓^{w}t

Taking these in reverse order, triconsonantal CəCC bases show tensing of the root vowel; CC-initials take a vowel between the initial consonants and elsewhere bases undergo CV-reduplication.

This distribution is not based exactly on surface form. For example, the agent-oriented suffix /-els/ 'activity' triggers root vowel elision, but the vowel is recoverable for imperfective formation, indicating that vowel elision is ordered after imperfective formation.

11a.	ɬíc̓ət	slice (tr.)	b. ɬíɬəc̓ət
12a.	ɬc̓els	slice (intr.)	b. ɬíɬəc̓əl̓s

In other cases--forms containing lexical suffixes--the elided vowel is not available, as discussed in more detail below.

13a. ɬc̓alst cut (round obj: ɬic̓-alst-t)
b. ɬə́c̓əl̓st

The last example illustrates the phonological nature of imperfective allomorphy. It is not the case that we are dealing with lexical government (but see section 6).

The problem then is the fact that the form of the imperfective seems to be predictable from phonological criteria, yet the class II forms show no obvious evidence of reduplication. Further there apparently is no independently needed phonological rule which would render them opaque if they first underwent CV-reduplication. Our options seem to be

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[3] An interesting problem with Class IIB forms is that they open up with the sonorant suffixes /-(i)l/ 'inchoative' and /-m/ 'middle'.

a.	c̓ək^{w}x̌	fry	b. c̓ek^{w}x̌ Imp
a.	c̓ə́k^{w}əx̌əm	spatter	b. c̓ə́k^{w}x̌əm̓ Imp

either to set up independent lexical rules which are phonologically conditioned (i.e., a morphological solution) or to posit phonological processes which exist solely to account for the derivation of opaque forms after CV-reduplication (i.e., a phonological solution).

2. Lexical Rules. Can a theory of word formation resolve the issue? I do not think so. We might ask whether the grammar should contain more than one lexical rule for one single grammatical function (i.e., introducing the category [+ Imperfective]). And, if so, could these rules make use of phonological information? Further, are string-sensitive rules such as reduplication and infixation of the same type as those which introduce affixes? If we find, for example, that there should be a one-to-one correspondence between a certain class of lexical rules and morphological categories and that string-sensitive rules should belong to this rule class, then we would expect all imperfectives to be derived by one rule, presumably CV-reduplication. General theoretical considerations do not, as it turns out, constrain the analysis in this way, as discussed below.

Separate but grammatically equivalent lexical rules are not particularly uncommon in inflectional morphology, so we need not expect a one-to-one correspondence between rules and morphemes. For example, Bresnan (1981) formulates two English past participle rules (e.g., knitted versus seen). Further, past participles, regardless of their source, may by additional rules function as perfect participles (with have) or, under appropriate conditions, as passive participles (e.g., with be or get). Presumably the latter rules would operate not only over forms such as knitted and seen, but ones either listed in the lexicon or derived by yet other rules (e.g., sung). There is no reason then to expect a one-to-one correspondence between morphological categories and rules.

Whether or not simple affixation rules should be sensitive to the phonological string is an interesting question and, off hand, I am not sure. But reduplication and infixation rules are sensitive to phonological information by their very nature. Like phonological rules, they can be formulated in such a way that their structural descriptions determine their applicability. Unless there is some independent constraint on grammars, there is no reason to believe that a string-sensitive rule could not have phonologically defined restrictions on its applicability, as would be the case if Halkomelem CV imperfective reduplication applied only on stems which have a vowel as the second segment, for example. Again, general considerations do not seem to eliminate an analysis.

Are string-sensitive rules such as reduplication and infixation of the same type as simple affixation rules? This is an interesting question, since if they are not, then any conclusions concerning string-sensitive rules may not generalize to other rules. Leiber (1981) concludes that string-sensitive rules are not of the same type as affixation. The latter are configurational in her model: stems and affixes are inserted in the lexicon into unlabelled tree structures which receive categorial labelling by general conventions (from the category of the stem or the affix). String-sensitive rules are not configurational and apply later. Further, the latter do not introduce morphological categories but are triggered by them. A similar position is taken by Aronoff (1976), who concludes that some string-sensitive rules must occur at points in the phonological derivation.

I will not consider Lieber's hypothesis about string-sensitive rules in detail here, but at least two points are worthy of brief discussion. First, are string-sensitive rules nonconfigurational? If they are, then the grammar still must have some means of determining whether or not a form is a reduplication, since string-sensitive rules may be sensitive to this. For example, the imperfectives of two CVC-reduplicated stems (frozen forms) are apparently formed by vowel-lengthening.

14a. si?si?	be afraid	b. sii?si?
15a. qa?qa?	drink	b. qaa?qa?

The CVC-reduplicated stems should meet the structural description of CV imperfective reduplication but it is not obvious they undergo the rule. Further, CVC plural reduplication may apply to apparent nonreduplicating imperfectives, but not to CV-reduplications (with interesting counterexamples discussed below).

16a. sq̓et	split (tr.)	b. seq̓t	Imp.
c. səq̓sə́q̓ət	Plural	d. səq̓sə́q̓t	Imp. Plural

Apparently stems which show CV imperfective reduplication generally have no plurals (although it is not obvious why l-infixation, the alternate plural form, could not apply). In summary, if reduplication does not introduce bracketing (structure) then some other means of detecting reduplicated forms must be available.

As to whether string-sensitive rules introduce morphological categories or are just triggered by them, Leiber considers German umlaut and Tagalog reduplication. I will

confine my remarks to the latter. Apparently reduplication in Tagalog is triggered by other morphemes (cf, Carrier, 1979) and the same reduplication rule may be triggered by a number of affixes. This is analogous to sonorant glottalization in Halkomelem, which is triggered by various categories, including the imperfective and diminutives. (See below.) However no reduplication or infixation rule in Halkomelem is triggered by an affix. If Halkomelem string-sensitive rules are triggered by morphology, such as a category feature, this is purely a result of the analysis. I can see in principle conditions under which we might wish to claim that this is the case, namely if it turns out that string-sensitive rules must apply late in the derivation after certain phonological rules (as in cases discussed by Aronoff). I leave that issue open at present and I will assume otherwise, that the imperfective aspect is introduced by a string-sensitive rule or rules.

In summary, general considerations do not lead us to chose one analysis over the other. It is conceivable that all imperfectives are derived by CV-reduplication which may be rendered opaque by additional rules or that CV-reduplication and vowel-infixation may form imperfectives independently. While a phonological solution is far more plausible if the rules project beyond the problem to other data, it is not clear that we can reject an analysis out of hand even if the rules do not exonerate themselves in this fashion. If an abstract phonological solution is not ultimately confirmed by internal or comparative evidence then, in the case at hand, perhaps a morphological solution is more plausible. I will save the discussion of internal evidence (or nonevidence) until the specific analyses have been proposed, since that discussion will be clearer in the context of more specific rules.

3. A Morphological Solution. Jones (1974) gives a morphological solution to the allomorphy problem, positing separate lexical rules for each class, based on phonological criteria built into the structural descriptions of the rules. The analysis sketched out below follows his in spirit with minor revisions and extensions in light of new data.

CV-initial bases (excepting class IIB) undergo CV prefixal reduplication. The rule can be stated as follows.

Rule (1): CV-reduplication

[CVX] --> [12[123]]
 123 +Imperfective

Normally the reduplicative syllable is stressed and unstressed vowels are reduced to shwa (cf, #1b). This stress rule apparently applies only if the vowel is tense (cf, #2b). Further, strong-syllable roots (V?, Vh, VV, V#) are stressed and the vowel of the reduplicative syllable is reduced (cf, #3b). Possibly the stress rules applicable to (3) and (1) are, respectively, the following. (Rule numbering reflects their ordering, so far as ordering can be determined.)

Rule (6): Strong Syllable Stress

V --> [+ stress] / [C___([-consonantal]X)]

That is, the first vowel of the root is stressed if it is followed in the root by a nonconsonantal segment (a vowel, glottal stop or h) or nothing. Otherwise, the first tense vowel is stressed by the following rule.[4]

Rule (7): Main Stress

V --> [+stress] /[C([-tense]C)* ___
 [+tense]

Let us assume for the moment that any unstressed vowel is automatically reduced to shwa. The following, then, are the derivations for (1) and (3) (including R(5), Glottalization, discussed below).

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[4] The facts of stress placement are less than transparent. Some forms suggest that a penultimate stress rule is or was operative:

a. s-tə́kən sock
b. təkə́n-əm put one's socks on

If we assume the underlying form here is /teken/ then the stressed (and tense) vowel is the penultimate. In other cases the reason for stress shift is less obvious:

a. ʔíx̌əm lend (money)
b. ʔəx̌ímθ lend me money (trans. 1sg obj.)

Possibly a shwa between /m/ and transitive /t/ has been deleted and penultimate stressing applies before. In any event the stress rules in text are highly provisional.

Base forms	c-cex^{w}əm (1b)	ce?t (3b)
R(1) Redup	c-cecex^{w}əm	cece?t
R(5) Glott	c-cecex^{w}əm̓	.....
R(6) SSS	.....	cecé?t
R(7) Stress	c-cécex^{w}əm̓	.....
Reduction	c-cécəx^{w}əm̓	cəcé?t

I will not consider here stress placement in forms like (2), with no tense vowel. As a further caveat, the stress rules above should be taken as initial approximations.

Base forms with an initial voiced sonorant have /h/ instead in the reduplicative prefix just in case the reduplicative vowel ends up as shwa (cf, #4). See Hukari (1977) where I show that such forms must result from reduplication in certain clear cases and I suggest this is a voicing dissimilation rule, with /h/ as the voiceless counterpart to voiced sonorants (i.e., resonants).

Base forms with an initial glottal stop or h seem to lose the base vowel, rather than reducing it to shwa and the base-initial segment is realized as glottal stop. While I will not give details of the analysis here, it seems plausible then to assume that (5) and (6) are also derived by CV reduplication.

In addition, all imperfectives (both class I and class II) show glottalization of virtually all voiced sonorants (resonants), as in the following examples.

17a.	lém̓ət	look (tr.)	b. lél̓əm̓ət
18a.	c̓tem	crawl	b. c̓ətəm̓
19a.	səwq̓θél̓əm	look for me	b. sél̓wq̓θèl̓əm̓

I say virtually all sonorants, since the initial sonorant of the imperfective stem is never glottalized nor is, I believe, a sonorant following an obstruant. I leave open whether these should be exempted in a glottalization rule or subsequently deglottalized. Assuming the latter, sonorant glottalization can be stated as follows, where the category [+Imperfective] triggers the rule.

Rule (5) Sonorant Glottalization

$$\begin{bmatrix}+\text{sonorant}\\-\text{syllabic}\end{bmatrix} \text{ --> [+ glottal] / [X}\_\_\text{Y]}_{+\text{Imperfective}}$$

As noted above, the rule is triggered by a number of other categories, including the diminutive, but I leave a final statement of the rule open. Some account must be taken of the fact that prefixes never glottalize but all suffixes do

(including person markers containing sonorants).

In addition, sonorants are deglottalized when followed over unstressed shwa by a glottalized segment, as in the following examples.

20a.	x̌él̓əm	write	b. x̌əx̌él̓əm̓
21a.	qélək̓	spin	b. qéqələk̓

Note that both glottalized obstruents and glottalized sonorants are triggering environments. The reader should be aware that this is a late rule and that some glottalized sonorants will undergo rules which protect them from deglottalization (such as segmentation, where the glottal component is realized as a preceding glottal stop). No formal statement of the rule will be given here, but see Hukari (1981).

Base forms beginning in a consonant cluster (Class IIA) show an infixed vowel in the imperfective aspect. The quality of the vowel is phonologically predictable (up to the point of variation in some cases) and this will be discussed later. The following rule derives these forms.

Rule (2): Vowel Infixation

$$[\text{CC<C> --> [1}\begin{bmatrix}\text{V}\\+\text{stress}\\<+\text{tense}>\end{bmatrix}\text{2<3>}]_{+\text{Imperfective}}$$
12 3

Stress is incorporated into the rule, since otherwise there would be no explanation for why a lax infixed vowel receives stress in favor of a tense lexical suffix vowel, as in the following examples.[5]

22a.	k̓^{w}šél̓əw̓cəst	count fingers	b. k̓^{w}éšələw̓cəst (/k̓^{w}š/)
23a.	x̌əl̓él̓əw̓cəst	paint fingers	b. x̌əx̌əl̓él̓əw̓cəst (/x̌əl̓/)

An underlying lax-vowel root is unstressed in this context (23a), as is its imperfective reduplication (23b), while the infixed imperfective vowel is stressed (22b).

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[5] I will assume that if the domain of a stress rule contains a stressed vowel, then the rule does not apply. Hence Class II forms, which always show initial syllable stress, will not undergo the stress rules, since stress is introduced by the infixation (or truncation) rule.

Rule (2) can be extended to class IIB forms if we assume that the vowel of the aspectually unmarked form is epenthetic and that the form entering the imperfective rule has no vowel (i.e., CCC). That is, a vowel is inserted between the initial consonants.

We have not yet handled the problem of vowel quality, though. As it turns out, a tense vowel is either /e/ or /a/, the latter in the environment of a round back-velar consonant. This is stated in rule (4) (first approximation), using the neighborhood convention. Either a preceding consonant or a following one (C3 in type IIB forms) forms the context.

Rule (4) Assimilation (First Approximation)

$$\begin{bmatrix} V \\ +tense \\ uback \end{bmatrix} \text{ --> [+back]/ } \left(\begin{bmatrix} -syllabic \\ -high \end{bmatrix} \right) \quad \begin{matrix} C \\ +back \\ +round \end{matrix}$$

I refer to this as an assimilation rule, since presumably that is its historical source. Halkomelem /a/ derives from *u and /e/ from *a, so this reflects a rounding assimilation rule. I will assume that a nonback tense vowel otherwise unmarked is specified as /e/ by a redundancy rule.

While Rule (4) handles the bulk of the cases, backing occurs optionally for some speakers in class IIA if the second consonant is nonback and round (i.e., a labiovelar) and in class IIB if C3 is and C2 is not high (not /y/).

24a. ƛ̓x^{w}at cover (tr.) b. ƛ̓ex^{w}t~ƛ̓ax^{w}t
25a. məlx^{w}t anoint (tr.) b. meɬ̓x^{w}t~maɬ̓x^{w}t

Rule (4) can be revised to accomodate these facts at the expense of some complexity.

Rule (4): Assimilation (Revised)

$$\begin{bmatrix} V \\ +tense \\ uback \end{bmatrix} \text{ --> [+back] } \left\{ \begin{matrix} \begin{bmatrix} C \\ +back \\ +round \end{bmatrix} \text{ ---} \\ \text{--- } \left(\begin{bmatrix} -syllabic \\ -high \end{bmatrix} \right) \begin{bmatrix} C \\ +back \\ +round \end{bmatrix} \\ \text{--- } \left(\begin{bmatrix} -syllabic \\ -high \end{bmatrix} \right) \begin{bmatrix} C \\ -back \\ +round \end{bmatrix} \end{matrix} \right\} \text{ optional}$$

An open question is whether Rule (4) is a general rule (possibly a redundancy rule) or must be incorporated with Rule (2). I leave the matter open, but see the next section.

In summary, a morphological solution makes use of the input phonological string in determining whether a given form may undergo the rule. We were able to simplify the analysis somewhat, having one single rule for all type II (nonreduplicating) forms by assuming that type IIB forms (triconsonantals) have no underlying vowel. Bases beginning in a consonant cluster undergo Rule (2), CV-initials undergoing Rule (1).

4. Thematic Vowels An additional complication in Class IIA forms is the presence or absence of a thematic vowel at the end of the root when it combines with a /-t/ transitive suffix and optionally with certain other suffixes. Its absence in most imperfective forms (and in CVC plurals) follows from no known phonological principle in the language. Possibly a special truncation rule applies whenever a vowel appears elsewhere in the root (in which case the tensing part of rule (2) would have to apply after truncation). Possibly a rule inserts a thematic vowel in these stems just in case they contain no vowel (i.e., in the aspectually unmarked forms). In either case lexical conditioning is involved. (26b) is ideosyncratic in not losing the thematic vowel.

26a. cset tell to (tr.) b. cə́sət

Elsewhere, there is no predicting which roots take shwa (cf, (7) and (26)) and which take a tense vowel, implying lexical conditioning if the thematic vowel is not underlying. I leave the matter open, but perhaps it is worthwhile to note that bare roots do not take the thematic vowel. They have shwa between the consonants and undergo reduplication in the imperfective. Compare the following to (7).

27a. p̓ək^{w} float b. p̓əp̓ək^{w}

A tense vowel is always /a/ when immediately preceded by a round consonant (velar or back velar) and /e/ elsewhere. Compare (24a) and (24b), for example, where the thematic vowel is obligatorily /a/ in (24a) but the imperfective vowel is optionally /a/ in (24b). Clearly rules accounting for vowel quality in imperfective and thematic vowels must be distinct.

5. A Phonological Solution. Suppose we assume instead that all imperfectives undergo CV-reduplication, but that class II imperfectives are rendered opaque by subsequent phonological processes. Rule (1) could be revised so that it applies in all cases, copying the initial consonant and vowel, if any.

Rule (1) Reduplication (Extended Version)

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[C<V>X] --> [1 V  [1<2>3]]
   aF          <aF>
 1 2 3       + Imperfective
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That is, the first consonant is copied as is the first vowel, if any. If there is no vowel, an unmarked vowel (i.e., shwa) is inserted. (Alternatively, perhaps the reduplicative prefix is just a consonant in the latter case.)

Under what conditions will reduplication be rendered opaque? If this is a phonological rule, possibly the initial consonant of the root is deleted if followed by a consonant, as in the following derivations where the unformulated rule is called truncation.

Base	č̓k^{w}x̌t (9)
Reduplication	č̓vč̓k^{w}x̌t
Truncation	č̓vk^{w}x̌t

This can be stated as in rule (3).

Rule (3): Truncation

$$[CV[CC<C>X] \rightarrow 1\begin{bmatrix} 2 \\ +\text{stress} \\ <+\text{tense}> \end{bmatrix} O4<5>6$$
$$12\ 34\ 5\ 6$$

As in the previous analysis, I assume Rule (4) applies or a tense vowel unmarked for height and backing will be /e/ and a lax vowel, shwa. See the appendix for example derivations.

6. Internal Evidence. Internal evidence offers no obvious reasons for preferring a separate infixation rule over truncation or vice versa. If reduplication introduces boundaries (perhaps bracketing) and vowel infixation does not, we might expect type II forms to show properties which reduplicating imperfectives do not, given the infixation analysis. As it turns out, type II forms are opaque in a sense. They apparently may undergo plural reduplication while reduplicating imperfectives do not seem to. The clearest case showing that type IIA imperfective plurals must be derived by imperfective formation followed by plural formation is the following, where the imperfective form undergoes merger of /t/ plus glottal stop, a glottalization rule reminiscent of Wakashan languages and of very limited application in Halkomelem.

28a. x̌tə? do
b. x̌ə̓ə Imp.
c. x̌ət̓x̌ə̓ə Imp. Plural

A somewhat less clear case can be made for claiming that type IIB imperfective bases undergo CVC plural reduplication (rather, say, than applying the rules in reverse order). The aspectually unmarked stem for "run" undergoes l-infixation for the plural, but the imperfective shows CVC reduplication.

29a. x̌^{w}čénəm	run	b. x̌^{w}án̓čənəm̓	Imp.
c. x̌^{w}ələnčénəm	Plural	b. x̌^{w}ən̓x̌^{w}án̓čənəm	Imp. Plural

These facts would follow if we assumed that plural formation follows imperfective formation, and that somehow the presence or absence of the category [+Imperfective] determines selection of the plural form. The conditions under which CVC reduplication or l-infixation apply remain a mystery however.[6]

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[6] The whole issue of plural formation in Halkomelem is an interesting one which is beyond the scope of this paper. I should note however that some forms may have portmanteau imperfective plurals (unless these are duratives or the like).

a. wénšəm	throw, pass.	b. wéw̓ən̓šəm̓	Imp
c. wənwénšəm	Plural	d. wən̓wən̓šəm̓	Imp Plural?

The data do not strike me as particularly regular. Contrast the above with the following.

a. k^{w}íntəl	fight	b. k^{w}ík^{w}ən̓təl̓	Imp
c. k^{w}ənk^{w}íntəl	Plural	d. k^{w}ín̓k^{w}ən̓təl̓	Imp Plural?

CV-reduplicating stems apparently cannot undergo plural formation in most cases. (It should be noted that plurality is not an obligatory category in the language.) But striking exceptions are h-imperfectives, forms which have undergone sonorant devoicing. Despite the fact that there is clear evidence they must reduplicate for the imperfective (Hukari, 1977), they undergo plural reduplication as well.

30a. ləkʷáṯ break (tr.) b. hə́ƛ̓kʷəṯ Imp.
c. ləkʷlə́kʷəṯ Plural b. həƛ̓ə́ƛ̓kʷəṯ Imp. Plural

It appears then that CV-reduplicated imperfectives cannot undergo CVC plural reduplication just in case they are transparently reduplicated forms, begging the question as to the status of type II imperfectives.

Evidence from irregular forms is not all that insightful. Consider the following.

31a. ƛ̓xʷaaɬ dig clams b. ƛ̓əƛ̓xʷáʔəɬ
32a. *x̓ʷəṯ win (tr.) b. *x̓eʔxʷṯ

(29b) shows reduplication for reasons which are quite unclear. If we follow the truncation analysis, conceivably this form is a lexical exception. In the other analysis, we could postulate an underlying shwa and assume it deletes in the aspectually unmarked form, thereby making the underlying form fit the structural description for reduplication. (On reflection, I must admit the latter seems ad hoc, but I am not sure it is ruled out in principle if the context for deletion is statable.) The second example does not obviously lead anywhere either. In the infixation analysis perhaps we could assume the original infixation rule inserted glottal stop, triggering various changes and that this particular stem preserves glottal stop. In either analysis there might be an underlying glottal stop which is deleted in the aspectually unmarked form (i.e., underlying /*x̓ʷṯ/).

Superficial type IIA forms are created when a "strong" vowel-initial lexical suffix is attached to a CVC root. Such forms show considerable variation in the imperfective. Generally, speakers accept at least two types of imperfectives.[7]

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[7] This does not exhaust the possible responses when imperfectives are requested. Occasionally a speaker gives a CV-reduplication with the underlying root vowel, but I believe these are not fully acceptable. Also, occasionally the form shows Ci?-reduplication plus a tense lexical suffix vowel.

a. ɬc̓ə́məƛ̓$^{\theta}$t cut across grain b. ɬə́c̓əməƛ̓$^{\theta}$t Imp
c. ɬi?ɬc̓ə́?məƛ̓$^{\theta}$t keep cutting across the grain

I believe such forms are duratives (i.e., 'keep on').

33a. ɬc̓alst cut round object (cf, (13))
b. ɬə́c̓əl̓st Imp.
c. ɬəɬc̓ál̓st Imp.

(B) follows the predicted pattern if the CCV shape is input to imperfective formation and (c) resembles (29b) above. The variation may well reflect the fact that complex forms with lexical suffixes are not in frequent use these days and speakers are somewhat unsure of them. But, for the sake of argument, let us say these derived CCV forms are input to imperfective formation and at least optionally differ from underlying CCV bases in terms of rule government. Suppose some rule is obligatory by lexical government for underlying CCV bases but optional for derived CCV bases. If so, the phonological solution may be preferred. Truncation would be lexically governed and optional for derived cc-initials. The morphological solution is not consistent with the data, since it predicts that only bases beginning in CV can reduplicate. The alternative would be to revise reduplication in the morphological analysis so that it could apply to cc-initials and to make infixation lexically governed. An alternative solution is to assume that root vowel reduction in forms with stressed lexical suffixes takes place in two stages: first the vowel is reduced to shwa and it is subsequently deleted. If so, possibly imperfective formation (or truncation) optionally precedes or follows deletion. While the ordering of such rules raises an number of complex issues, it is not clear that the morphological or the phonological solution would be clearly preferred. Speakers' judgements in this whole domain however make a decision for or against an analysis a somewhat questionable exercise.

In summary, internal evidence does not seem to point to one solution. It is of course possible that I have overlooked facts which are decisive. I hope that readers working on neighboring languages may have some insights to offer--either concerning the data discussed here or from related facts in their research languages.

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APPENDIX

Morphological Solution

unmarked form	p̓k̓ʷət (7)	cset (26)	c̓əṯq̓ʷt (10)
imp. base	p̓k̓ʷt	cset	c̓ṯq̓ʷt
R(1) RDP	.....	.....	.....
R(2) Infix.	pV̓k̓ʷt	cV̓set	cV̓ṯq̓ʷt
R(4) Assim.	.....	.....	c̓aṯq̓ʷt
e~ə	p̓ék̓ʷt	cə̓set	.....
R(5) Glott.	.....	.....	.....
R(6) SS Stress	.....	.....	.....
R(7) M.Stress	.....	.....	.....
reduction	.....	cə̓sət	.....

Phonological Solution

unmarked form	p̓k̓ʷət (7)	cset (26)	c̓əṯq̓ʷt (10)
imp. base	p̓k̓ʷt	cset	c̓ṯq̓ʷt
R(1) RDP	p̓vp̓k̓ʷt	cvcset	c̓vc̓ṯq̓ʷt
R(3) Truncat.	pV̓k̓ʷt	cV̓set	cV̓ṯq̓ʷt
R(4) Assim.	.....	.....	c̓aṯq̓ʷt
e~ə	p̓ék̓ʷt	cə̓set	.....
R(5) Glott.	.....	.....	.....
R(6) SS Stress	.....	.....	.....
R(7) M.Stress	.....	.....	.....
reduction	.....	cə̓sət	.....