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An Analysis of Lushootseed Diminutive Reduplication
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0. Introduction. In this paper I will discuss a reduplication process in Northern Lushootseed, also called Puget Sound Salish. Lushootseed employs seven kinds of reduplication in its derivational morphology. One of the most productive of these reduplications is used to form diminutives from almost any lexical category. A preliminary glance at the data appears in (1).  

(1) Introductory data.

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss</th>
<th>Reduplicated Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.čálesai</td>
<td>hand</td>
<td>čálesai</td>
<td>little hand</td>
</tr>
<tr>
<td>b.suqwa?</td>
<td>younger sibling</td>
<td>suqwa?</td>
<td>little younger sibling</td>
</tr>
<tr>
<td>c.čča?</td>
<td>rock</td>
<td>čča?</td>
<td>little rock</td>
</tr>
<tr>
<td>d.belxw</td>
<td>pass by</td>
<td>belxw</td>
<td>pass by a little</td>
</tr>
<tr>
<td>e.telaw-il</td>
<td>run</td>
<td>telaw-il</td>
<td>jog</td>
</tr>
<tr>
<td>f.buus</td>
<td>four</td>
<td>buus</td>
<td>four small items</td>
</tr>
<tr>
<td>g.əexʷ-əxal-us</td>
<td>marked face</td>
<td>əexʷ-əxal-us</td>
<td>raccoon (lit. little marked face)</td>
</tr>
</tbody>
</table>

Ellen Broselow, in her (1983) discussion of reduplication in several Salish languages, notes that Lushootseed diminutive reduplication is prefixed and displays the four allomorphs in (2). A copy of the first consonant-vowel sequence of the base, a copy of the first C plus the vowel /i/, or either of these plus a glottal stop.

(2) Allomorphs of the diminutive prefix.

a. CV- (cf. 1.a,b)
b. Ci- (cf. 1.c,e)
c. CV?- (cf. 1.g)
d. Ci?- (cf. 1.d,f)

In general, each stem may only co-occur with one of these allomorphs; the item in (3) is ill-formed because čales 'hand' in (1.a) takes the CV-, rather than the Ci- allomorph of the prefix.

(3) *čičales 'little hand' (cf. 1.a)

Broselow, following Hess and Hilbert (1976), states that the choice of one of the allomorphs in (2) by a stem is not predictable from phonological or semantic properties of that stem,
and that each stem must be lexically marked for the particular allomorph it takes under diminutive reduplication. I will argue here that the distribution of the diminutive allomorphs is rule-governed. The argument has two parts. First, I will show that the appearance of the glottal stop in the allomorphs of (2.c) and (2.d) is due to a post-lexical rule irrelevant to the reduplication. Second, I will claim that the distribution of the remaining allomorphs in (2.a,b) can be predicted from phonological properties of the stems that select them, and I'll present an analysis which embodies this claim.

1. Evidence for a ?-insertion rule. More data which contain forms which occur with the (surface) glottal stops in (2.c, d) appear in (4), categorized according to which allomorph they select.

(4)

<table>
<thead>
<tr>
<th>form</th>
<th>gloss</th>
<th>reduplicated form</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Ci?-</td>
<td>log</td>
<td>qʷí(?qʷlay?</td>
<td>stick</td>
</tr>
<tr>
<td>qʷlay?</td>
<td></td>
<td>s-qʷí(?qʷebey</td>
<td>puppy</td>
</tr>
<tr>
<td>s-qʷebey?</td>
<td></td>
<td>kʷí?kʷesyu</td>
<td>young porpoise</td>
</tr>
<tr>
<td>kʷesyu</td>
<td>porpoise</td>
<td>xí(?xəc</td>
<td>a little afraid</td>
</tr>
<tr>
<td>xəc</td>
<td>fear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. CV?-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lil</td>
<td>far</td>
<td>lí?lil</td>
<td>a little ways steal unimportant items</td>
</tr>
<tr>
<td>qáda?</td>
<td>steal</td>
<td>qá?qada</td>
<td></td>
</tr>
<tr>
<td>tále</td>
<td>money</td>
<td>tá?tale</td>
<td>a little money</td>
</tr>
<tr>
<td>sáli?</td>
<td>two</td>
<td>sá?seli?</td>
<td>two small items</td>
</tr>
</tbody>
</table>

Notice first that many of the forms in (4) have parentheses around the glottal stop. This is how these forms are recorded in Hess (1976). The parentheses indicate optionality of the glottal stop: that is, sometimes the forms appear with the glottal stop, and sometimes it is missing. Immediately this seems to contradict the discussion of (3) above, where the point was that there is no optionality in the choice of allomorph. But (3) points to a true generalization; no optionality is ever found, for example, between the CV- allomorph and the Ci- allomorph. The variability only comes into play between one of the forms in (2.a,b) and that same form with a glottal stop added. If (2) really contained four separate allomorphs, we would not expect this kind of one-sided variability.
I claim that the allomorphs of (2.c,d) are derived from the more basic forms in (2.a,b), respectively, by a glottal stop insertion rule, specifically a post-lexical rule which operates to close an open syllable when that syllable bears the main stress of an utterance. I will return to the stress issue. First, I want to point out that there is never a glottal stop transcribed in the reduplicated syllable of a stem which begins with a glottalized consonant. (Glottalization is indicated here by an apostrophe.)

Now if a stem like the one schematized in (5.a) were to select a diminutive prefix ending with a glottal stop, the resulting form would contain a glottal stop followed by a glottalized consonant. This configuration is not found in the diminutive reduplication data, as indicated in (5.b).

(5)

a. C'VC
b. *CV>C'VC, *Ci>C'VC

One might argue that some sort of degemination of the glottal closure feature might account for the distributional gap. However, as Broselow points out, no general rule of degemination applies in reduplicated forms; for example, when the stem /lil/ 'far, remove to a distance' undergoes a CVC- reduplication which indicates the distribution of items, the form ?u-lillil-teb, 'they were separated' results, and no degemination of the /ll/ sequence occurs. So this distributional gap remains unexplained in any analysis which treats (2.a,b) on a par with (2.c,d). A post-lexical glottal stop insertion rule, in contrast, might well be expected to be effected by low-level phonetic constraints against prolonged sequences of glottal closures.

The "distributional" reduplication mentioned above can provide another argument for the non-underlying nature of the glottal stop in these forms. As Broselow shows, Lushootseed allows further reduplication of an already reduplicated form. She argues convincingly that a later reduplication has as its input the output of an earlier reduplication. An example appears in (6).

(6)

a. s=qʷəbá'y? 'dog'
b. s=qʷí(?qʷəbəy? 'puppy'
c. s=qʷí(?qʷi?qʷəbəy? 'puppies'
d. *s- qʷí(?qʷí(?qʷəbəy? 'puppies'

(6.b) is derived from (6.a) by diminutive reduplication. Now, (6.b) is one of those forms recorded as taking an optional
glottal stop. (6.c) shows the result of prefixing the CVC-
"distributional" template onto (6.b). We expect to find the
glottal stop in the first syllable of (6.c), because the CVC-
reduplication would include it. It is unexpected, however, that a
glottal stop, even an optional one, never appears in the syllable
closest to the root in a form like (6.d); that is, the original
diminutive reduplication syllable cannot contain the glottal stop
that was picked up in the CVC- reduplication. This argues against
an analysis which specifies s- qʷəbəʔ 'dog' for the Ciʔ- prefix in
the lexicon. Notice, however, that the stress falls on the
diminutive reduplication syllable in (6.b), but on the
distributive reduplication syllable in (6.c). The possibility of
the glottal stop in the reduplicated syllable disappears when
stress moves off of that syllable.

It is beyond the scope of this paper to formulate rules of
word stress or sentence stress in Lushootseed, but data from full
Lushootseed sentences can provide more evidence that the presence
of the glottal stop is conditioned by prosodic factors. Consider
the data in (7).

(7)a.
\[ \text{xʷiʔ gʷəsqʷəʔtxʷ-} \text{s tiʔiʔ təʔyíqaʔ} \text{ súʔsəqʷəʔ-} \text{s.} \]
NEG accompany-INFL DET little younger brother-POSSESSIVE 'Təʔyíqaʔ, his little younger brother, was not with him.'

(7)b.
\[ \text{b.əʔúucəb} \text{ʔə tsiʔə? súʔsəqʷəʔ-} \text{s,} \text{ʔə tsiʔə? káʔkaʔ.} \]
see-PASS PREP DET(fem) little younger sister-POSSESS PREP DET(fem) crow 'He was seen by his little younger sister, by Crow.'

Informally, Lushootseed sentence stress tends to fall on the
last word. Notice that the reduplicated form for 'younger sibling'
appears with a glottal stop in (7.a), where it carries the main
stress of the sentence. In contrast, the glottal stop is absent
in (7.b), where another constituent carries the main stress of the
sentence. More research needs to be done in this area of sentence
stress in Lushootseed, but these data lend credence to the idea of
a /ʔ/-insertion analysis.

These are some of the reasons I think the glottal stop in
(2.c,d) is inserted, but the most compelling reason is that a
clear generalization about the distribution of the diminutive can
be made if we exclude the glottal stops from consideration. Forms
with the stop pattern exactly like those without it, with respect
to the generalization to be put forward in the next section. I
will return to a discussion of the glottal stop in the conclusion of this paper.

2. Toward a generalization. The generalization that I am alluding to is stated most simply in terms of the particular analysis I will propose here. My analysis encorporates some insights of Broselow's, so I will briefly review Broselow's treatment, and follow with my analysis and the generalization which motivates it.

Broselow adopts the framework of Marantz (1982) in which reduplication involves the affixation of a reduplicative morpheme which is a CV-skeleton, the copying of the phonemic melody of the stem, and the association of the copied melody with the skeletal affix. Familiar universal principles govern the association, which proceeds from left to right in prefixal reduplications. A derivation following Broselow's analysis appears in (8).

(8)

\[
\begin{array}{c}
\text{dim} \\
\text{stem} \\
\text{CV} & \text{CVCCVC} \\
\text{CV} & \text{CVCCVC} \\
\end{array}
\]

\[
\begin{array}{c}
\text{past}\text{ed} \\
past\text{ed} \\
past\text{ed} \\
\end{array}
\]

Recall that since she has no glottal stop insertion rule, Broselow must mark each stem for which diminutive affix it selects, CV-, Ci-, CV?-, or Ci?-. For the Ci- reduplications, the i comes preassociated to the affix, so only the first consonant of the stem may be associated to the affix. The glottal stop also comes preassociated.

Broselow's account allows an insightful treatment of stem with intial consonant clusters like qyllay? 'log', as shown in the derivation in (9).

(9) Broselow, p. 323.

\[
\begin{array}{c}
\text{dim} \\
\text{i} \\
\text{CV} \\
\text{CV} \\
\text{CV} \\
\text{CV} \\
\end{array}
\]

\[
\begin{array}{c}
\text{CVCC} \\
\text{CVCC} \\
\text{CVCC} \\
\text{CVCC} \\
\end{array}
\]

\[
\begin{array}{c}
\text{qyllay? qyllay?} \\
\text{qyllay?} \\
\text{stick'}
\end{array}
\]
Only the first C is associated to the affix — any further association would violate universal conditions on multiple association — and the correct form, qwik'wa'y?, is generated.

Given Broselow’s analysis, however, it is an accident that all stems beginning in consonant clusters select the C-allomorph. If the choice of the diminutive allomorph were purely a matter of lexical marking, it would be expected, for example, that some forms with initial consonant clusters would be specified for the CV- affix. A derivation like the one in (10) would obtain.

(10)

\[
\begin{array}{l|l}
\text{dim} & \text{stem} \\
CV & \text{CCVC} \\
\end{array}
\]

\[
\begin{array}{l}
\text{ča?} \\
\text{čka?} \\
\text{ččka?} \\
\text{stone}
\end{array}
\]

The first C of the stem would associate to the affix in the familiar way, but the next consonant would be prohibited from associating to a V- slot. Unassociated elements would delete by general convention, and the illformed *ččka? would be generated as the diminutive of čka? 'rock'. In fact, no cluster initial stem co-occurs with the CV- allomorph under diminutive reduplication; this goes unexplained in Broselow’s analysis.

An aside is in order here, on the scope of Broselow’s proposals in the article under discussion. It was her intention in that work to discuss the interaction of several different kinds of reduplication, so it was to her advantage to have a simple analysis of each kind; even if that included a lot of lexical marking. Indeed, this paper in no way weakens her central claims in that paper; my goal here is simply to show that much more can be predicted about diminutive reduplication than has ever been discussed in the literature. To this end, the next section will present more data and motivate my analysis.

3. Data and analysis. The data in (11) show that CV- is a clear candidate for the underlying representation of the diminutive morpheme.

(11)

\[
\begin{array}{lll}
\text{form} & \text{gloss} & \text{reduplicated form} & \text{gloss} \\
\text{kwíd} & \text{how many} & \text{kwík’wéd} & \text{a little bit} \\
\text{čáx’-ed} & \text{club it} & \text{čáx’-ed} & \text{club it lightly} \\
\text{sáx’-ab} & \text{run, jump} & \text{sá?sx’-ab} & \text{run a few steps}
\end{array}
\]
In work in progress (Bates, forthcoming) I have a complete analysis of these Lushootseed facts written within the 'transfer' theory of reduplication presented in Clements (1985). To present the (rather complex) formalism of that theory here would detract from the purpose of this paper, which is to show that the choice of the diminutive allomorph is rule-governed. So, for this presentation, I will give derivations which have the same form as those of Broselow's analysis. One of these abridged derivations appears in (12).

(12)

\[
\begin{array}{ll}
dim & \text{stem} \\
CV & CVC VC \\
\text{suq'a?} & \text{suq'a?} & \rightarrow & CV & CVC & VC \\
\text{su suq'a?}
\end{array}
\]

The derivation in (12) is exactly comparable to the one in (8) given in Broselow's framework; there is a consonant in the stem to associate to the consonant in the affix, and there is a vowel in the stem which associates to the vowel of the affix. The affix is prefixed onto the stem to produce the correct susuq'a? for 'little younger sibling'.

Several examples of stems with initial consonant clusters are given in (13) below.

(13)

\[
\begin{array}{lll}
d^i\text{lix} & \text{creek} & d^i\text{id}^i\text{lix} & \text{tiny creek} \\
\text{csay} & \text{spear} & \text{ci\text{c}say} & \text{toy spear} \\
\text{dчу} & \text{one} & \text{did\text{c}u} & \text{one small article} \\
\text{beda} & \text{offspring} & \text{bilit\text{a}} & \text{young offspring} \\
\text{ceg\text{as}} & \text{wife} & \text{ci\text{c}eg\text{as}} & \text{dear wife}
\end{array}
\]

If we make the minimal hypothesis that CV-, which was motivated by (11) to be an underlying representation for the
diminutive morpheme, is the only underlying representation we need, a derivation like the one in (14) holds for each of the forms in (13).

(14)

\[
\begin{array}{l}
dim \quad \text{stem} \\
cV \quad \text{CCVC} \\
\mid \mid \mid \mid \\
d\ddu? \quad d\ddu? \rightarrow \text{CVCCVC} \\
\mid \mid \mid \mid \\
d \quad d\ddu?
\end{array}
\]

The initial consonant of the stem can associate to the affix with no trouble, but the V of the affix remains unassociated to any phonemic melody, since, as in Broselow's analysis, any such association would violate universal principles. For this structure, I propose the epentheses rule in (15), which will be employed for all forms with take the surface allomorph Ci-.

(15) i-Epenthesis.

\[\emptyset \rightarrow i / y' \text{ where } V' \text{ is an unassociated V-slot.}\]

Many rules have been proposed in the literature on nonlinear phonology which have the same form as (15). The rule in (15) applies whenever general principles conspire to create a form which satisfies its structural description. The output in (14) satisfies the structural description of (15); the derivation is completed as in (16).

(16)

\[
\begin{array}{lll}
\text{CVCCVC} & \text{CVCCVC} & \text{CVCCVC} \\
\mid \mid \mid \mid & \rightarrow \text{by (15)} & \mid \mid \mid \mid \rightarrow \text{by universal convention} & \mid \mid \mid \mid \mid \\
d \ddu? & \ddu? & \ddu?
\end{array}
\]

First i-Epenthesis applies, and then universal mapping conventions associate the V-slot of the affix with the /i/.

Now that the basic machinery of my analysis has been introduced, it is possible to state, albeit informally, the generalization governing the distribution of the allomorphs of the diminutive morpheme. This informal generalization is given in (17).

(17) Informal generalization.

a. If the stem begins with a consonant cluster, the prefix is Ci-.
b. If the first vowel of the root is schwa, the prefix is Ci-.
c. If the first vowel of the root is long, the prefix is Ci-.
d. Otherwise, the prefix is CV-.
The situations described in (17.a) and (17.d) were discussed above; it merely remains to discuss (17.b) and (17.d). I will discuss (17.b) first. The relevant data appear in (18).

(18)

\[
\begin{array}{llll}
\text{kwéi} & \text{spill} & \text{kwíkweí} & \text{trickle} \\
\text{s-cékw} & \text{worm, bug} & \text{s-cíckw} & \text{small worm, bug} \\
\text{šeqw} & \text{road} & \text{šíseqw} & \text{trail} \\
\text{s-ćákwe-áb} & \text{log} & \text{s-tíckweab} & \text{stick} \\
\text{díq} & \text{wet} & \text{dííqw} & \text{damp} \\
\text{ted-íl} & \text{go to bed} & \text{títedíl} & \text{lie down a while} \\
\text{qéq} & \text{drift} & \text{pípqw} & \text{small object drifts} \\
\text{gwed-íl} & \text{sit down} & \text{saxw-gwíqwedíl} & \text{little chair} \\
\text{χéi} & \text{sick} & \text{σ-χíq} & \text{little illness} \\
\text{χék} & \text{bite} & \text{χíq-k-dup} & \text{snack}
\end{array}
\]

To account for the behavior of the forms in (18), it is necessary to introduce a hypothesis from ongoing research (Bates (forthcoming) and elsewhere) that surface schwas in Lushootseed are all predictable from one of the rules in (19).

(19)

a. \( a \rightarrow \varepsilon / \) (independently motivated)
   -stress

b. \( \emptyset \rightarrow \varepsilon / [C\_CX] \) (lexical rule)
   stem condition - X contains no V.

c. \( \emptyset \rightarrow \varepsilon \) to prevent violations of the sonority hierarchy.

To properly motivate all the rules in (19) would take me too far afield for the purpose of this paper, but let me point out that the rule in (19.b) is the only true innovation in Lushootseed research. Hess and Hilbert (1976) and Broselow (1983) each assume some version of (19.a) and (19.c). The motivation for (19.b) as a principle of Lushootseed grammar will have to wait for another presentation (cf. Bates, forthcoming); the conclusion of this admittedly sketchy presentation is that there are no underlying schwas in Lushootseed. This means that the stems in (18) are underlingly of the form CC. This proposal is not novel in descriptions of Lushootseed stems; see Hoard (1978). When a CC stem in (18) undergoes diminutive reduplication, a derivation like the one in (20) obtains.
The first vowel of the stem associates to the affix in the usual way, but there is no vowel in the stem to associate to the affixal V-slot. The unassociated vowel slot triggers i-Epenthesis; universal association applies to produce the desired \( \text{cickw} \) for the diminutive of /\( \text{ckw} \)/ 'worm, bug'. As can be seen in (20), the analysis I am proposing here requires no additional machinery to generate the correct diminutives for /CC/ stems. The remaining clause of the generalization in (17) is (17.c); I will now discuss the behavior of stems with long vowels under diminutive reduplication. (21) presents the relevant data:

(21)

\[
\begin{array}{llll}
\text{s-paac} & \text{bear} & \text{s-pîpaac} & \text{bear cub} \\
\text{s-duuwx} & \text{knife} & \text{s-dîduuwx} & \text{small knife} \\
\text{pûutad} & \text{shirt} & \text{pûputad} & \text{thin shirt, favorite shirt} \\
\text{làax} & \text{plate, platter} & \text{lî?làax} & \text{small plate} \\
\text{luu?} & \text{hole} & ?\text{ês-lî?luu?} & \text{little hole in ground} \\
\text{haac} & \text{horse clam} & \text{hi?haac} & \text{eastern clam, looks like a small horse clam}
\end{array}
\]

In the derivation of diminutives of the forms in (21), a constraint motivated by Clements is in effect. The constraint is repeated in (22).

(22)


Condition: If \( \text{VV} \) is a syllabic nucleus, its image under association is a syllabic nucleus.

The translation of (22) into the abridged format I'm adopting here would be: 'A branching nucleus must reduplicate as a branching nucleus'. Given the now standard representation of long vowels as branching nuclei, notice that if condition (22) is not recognized as operational for the stems in (21), the incorrect derivation in (23) results.
(23)  
\[
\begin{array}{c|c|c|c|c|c|c|c|c|c|c|c|c}
\text{dim} & \text{stem} & \text{CV} & \text{CVVC} & \text{CV} & \text{CVVC} \\
\hline
\text{bus} & \text{bus} & I & I & I & I & I & I & I & I & I & I & I \\
\end{array}
\]

\( \rightarrow \)

\[
\begin{array}{c|c|c|c|c|c|c|c|c|c|c|c|c}
\text{bus} & \text{bus} & I & I & I & I & I & I & I & I & I & I & I \\
\end{array}
\]

(violates condition (22))

If (23) were the correct derivation of the diminutive of \text{buus} 'four', we would expect \text{*bubuus} as the output, but it is illformed.

If we recognize the independently motivated (22) as constraining our derivations, however, the correct derivation of 'four small items' would obtain, as shown in (24).

(24)  
\[
\begin{array}{c|c|c|c|c|c|c|c|c|c|c|c|c}
\text{dim} & \text{stem} & \text{CV} & \text{CVVC} & \text{CV} & \text{CVVC} & \text{CVVCVC} & \text{CVVCVC} \\
\hline
\text{bus} & \text{bus} & b & \text{bus} & \text{bus} & \text{bus} & \text{bus} & \text{bus} \\
\end{array}
\]

The first C of the stem associates to the affix in the familiar way, but the association of the stem vowel to the affix is blocked by (22), since there is not enough "room" in the skeleton of the affix for a branching nucleus. The V-slot of the affix is left unassociated and triggers i-Epenthesis. The derivation is completed in the familiar way, and \text{bibuus}, the desired diminutive form for \text{buus}, is predicted.

All the subclauses of (17) have now been discussed, and it is possible to state the formal generalization in (25).

(25)  

Formal generalization. Forms take Ci- if CV- prefixation is prevented by independent principles.

4. Conclusion. I have attempted to show that the distribution of the allomorphs of the diminutive prefix in Lushootseed is rule-governed. I proposed factoring out the appearance of a glottal stop in the forms (2.c,d) from consideration as part of the UR of the prefix. It is now possible to see that forms with the glottal stop behave just like their plain counterparts with respect to the choice of surface allomorph they appear with; notice that all the data in (4.a) that take the Ci?- prefix have stems which satisfy (17a,b, or c), while the forms in (4.b) would all be predicted in this analysis to select the CV- prefix.
FOOTNOTES

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1. Only stems are involved in the reduplication; throughout this paper I will separate affixes from their stems with hyphens. For example, in (1.g), the stem is /šal/, a verb meaning 'to mark'. The prefix is inflectional, and the suffix /-us/ means 'face'. The stem vowel may weaken or delete in a reduplicated structure; I will not discuss this process here.

2. Hess (1976) is the source of most of the data which appear in this paper and Broselow (1983).

3. If one compares the transcriptions of Snyder (1968) to those of Hess (1976), other glottal stops appear where Hess has them, but these glottal stops in diminutive reduplicated syllables are systematically missing.

4. In Clements' framework, association actually proceeds through the CV-tier of the stem; this enables Clements to capture generalizations about how the prosodic properties of the stem effect reduplication. This is essential in my treatment of long vowels later in the paper; but an extensive discussion of the relative merits of Clements' theory versus that of Marantz will have to await future research (cf. Bates, forthcoming).

5. Often, a schwa appears between the first two consonants in the forms of (13), but as Broselow notes, this schwa is clearly epenthetic.

6. As in Broselow's analysis, the second C of the stem is prohibited from associating to the V by universal principles, but there is a technical problem in an analysis based on Clements (1985) with regard to the derivation in (14), specifically that association of the stem vowel /a/ to the affix would not violate universal principles as they are presented in Clements; this would result in *čača? being predicted as the diminutive of ča? 'rock', not the desired čiča?. See Bates (forthcoming) for a solution to this problem.

7. Sometimes haac 'long' is transcribed by Hess ha?c. This same variation between CVVC and CV?C is found in other forms in (21) also. If this glottal stop transcription is a more realistic statements of the facts, my analysis still holds under the plausible assumption that glottal stops in this position actually
form part of the nucleus of the syllable, instead of being part of the coda with the closing C. The branching nucleus would trigger i- Epenthesis the same way that long vowels do.

8. Such a translation into the abridged notation employed here may be misleading; Clements (1985) argues that the condition in (22) cannot be stated in a theory of reduplication based on Marantz (1982).

References

Bates, Dawn. forthcoming. 'Lushootseed Reduplication and Two Theories of Nonlinear Morphology.' To be presented at the 1986 Milwaukee Morphology Meeting.


Hoard, James. 1978. 'Syllabication in Northwest Coast Indian Languages.' in A. Bell and J. Hooper, (Eds.), Syllables and Segments. Amsterdam: North Holland.
