

NOOKSACK REDUPLICATION

Brent Galloway

Richmond, B.C.

O. Introduction. This paper is based on field notes and tapes made by Paul Fetzer (notes only), Pamela Amoss, Barbara Efrat, Laurence Thompson, and myself with the last fluent speakers of Nooksack, George Swanaset and Sindick Jimmy, and the last partial speakers of Nooksack, Mrs. Louisa George and Mrs. Esther Fidele. My analysis from Feb. 1983 to Feb. 1984 was supported by a grant from the Social Sciences and Humanities Research Council of Canada. Further research towards a computerized dictionary of Upriver Halkomelem and a computerized dictionary of all extant Nooksack material will be supported by a three-year grant from the National Endowment for the Humanities.

In line with methods of phonological comparison and analysis of Nooksack described in Galloway 1983a, 1983b, 1984a and Galloway and Richardson 1983, forms are cited with linguists' and native speakers' initials. Comparisons of these with each other, with tapes, and with forms from neighboring languages and especially from Upriver Halkomelem (UHk), which has influenced Nooksack and its speakers for several centuries, will allow us to ascertain the phonological forms and the meanings of most of the Nooksack words and affixes. (BG shows my transcriptions from the tapes of other workers.)

The Nooksack phonemes are /p, t, (k), k^w, q, q^w, ʔ, p', t', k'^w, q', q'^w, c, č, (θ'), c', č', ʎ', (θ), s, š, (x^v), ʒ, x^w, x̄, x^w, h, m, n, y, l, w, i, ə, e, (a), o, ʻ, #/. /k/ is found in borrowing from Chinook Jargon, English, etc., but also in one word of possible Nooksack origin. /θ/ and /θ'/ in the speech of GS and sometimes EF (but not that of SJ and LG) replace /c/ and /c'/ through UHk influence. GS, also by UHk influence, sometimes has /č/ - /c/ and /č'/ - /c'/ where other speakers have /č/ and /č'/. GS also replaces

/č/ in many words with /x^v/ through UHk influence. /a/ appears in loans from or words influenced by UHk or Lushootseed (Ld). Nooksack unstressed /o/, /æ/ and /i/ usually correspond to UHk unstressed /e/, and they become Nooksack /e/ in some cases, through UHk influence. Conversely, /é/ sometimes replaces /ó/ at slower, careful speeds in Nooksack. Nooksack vowel allophones include, for /i/, [i, I, e], /æ/ [ɛ, æ], /e/ [ɛ, e, ʌ], /o/ [u, U, o, ɔ], (/a/ [a]). Nooksack ʔC and Rʔ (where C = consonant, R = resonant) correspond to UHk *C and *R, R', or R and are sometimes so-influenced in Nooksack.

The examples below are phonemicized (with phonemic differences between speakers retained). The affixes are shown in morphophonemic transcription, where C₁ = the first consonant of the root, V₂ = the second vowel of the root, and -Aé- means delete the preceding vowel and replace or ablaut it to /é/. Most types of reduplication in Nooksack are clearly inflectional; some may be old aspect inflections, as Suttles 1980 showed for Musqueam Halkomelem, but now border on derivation. Ablaut is much less common. Two question marks indicate possible but not proven affixes; single question mark indicates some uncertainty of form or meaning.

1. Ablaut and Reduplication Types with Examples.

//-Aá-// 'plural': BG:LG swáʔwelos and BE:SJ swáw'los 'young men' (BG:LG swíʔwelos 'young man'). This ablaut type, with only one example so far, seems likely to be borrowed from UHk, which has only swíweles 'young man', swáweles 'young men' with this plural; further evidence of this borrowing is the /a/ which appears only in borrowings or as a rare alternant for /æ/ or /e/ before /y/ usually. Final evidence is that due to the historical vowel shift of unstressed vowels to /e/ in Hk, Hk has developed extensive inflectional ablaut, which Nooksack seems to otherwise lack entirely.

??//-Aé-// '(derivational)': BE:SJ /spénænx^w/ 'camas' (poss. //s-pén-Aé-ænx^w// with pén- 'plant, bury' as in BG:SJ pén-élik^w 'planting (as an organized activity)').

??//-Aí-// or //-Aó-// '(derivational)': PA:GS p'íθ'-in

'squeeze (of boil or flesh)' and PA:GS p'óθ'-os (-os 'face') 'cradle basket' (sometimes cranial deformation boards were used in the cradle baskets, which might be seen as squeezing the face).

//-?V₁-// (after V₁) '?plural actors': PA:GS č'ě'əək' 'in a bunch playing'--PA:GS č'ěək' '(to) play'.

//C₁V₁-// '?plural': BE:SJ šqæqšætæn - šqæqšeten 'older cousins' (-tæn - -ten 'reciprocal')(cf. BE:SJ sqé 'older cousin (child of older sibling)' and PA:SJ sqé 'older person of ego's generation').

//-(?)C₁V₁-// (after V₁) 'diminutive': BG:SJ yóyomeč 'small spring salmon'--BG:SJ yómeč 'spring salmon', BG:SJ q'ěq'emey? 'young girl, small girl'--BG:SJ, BE:SJ, etc. q'ěmey? 'adolescent virgin girl', BE:SJ also has q'ě'q'ə'mey? and q'ěq'am'ey? 'young girl (2 to 7 yrs.)', BG:LG, PA:GS náenætox^W 'early in the morning' and PA:GS x^Wnænæt - BG:LG x^Wné'næt 'last night', BE:SJ x^Wné'nætoč 'getting dark last night'--BG:LG s-næt 'night', PA:SJ ?ě'əəxic 'lie down awhile [a little]' and PA:SJ ?ələ'əəxic 'lots of people lying down for awhile'--BG:LG ?əəxic 'lie down'.

//-C₁V₁-, -C₁V₁?-// '?resultative/dispositional' (often with ?əs-, ?es- 'stative' or s- 'nominalizer'): LT:LG pópone^W 'have seen it many times, always seeing s-th' (cf. LT:LG penpónex^W 'see s-o/s-th several times)--LT:LG pónex^W 'see s-o/s-th (once)', LT:LG ?əswá(?)weqec 'she's married (has a husband)', LT:LG ?əsšěšəm 'it's shallow', LT:LG and BE:LG sní'ničim '(long) story, news'--LT:LG and BE:LG sničim 'story', BE:LG ?ay ní'ničimtowəl? 'they're telling stories to one another', possibly BE:SJ x^Wá'x^Woc' ~ sx^Wó'x^Woc' 'crazy, wild' (cf. PA:SJ ?əsx^Wó'x^Wc' 'promiscuous'), LT:LG ?esqéqəm 'quiet water'.

//-C₁V₁-m ~ -C₁e-m// (after V₁) 'plural' only in one demonstrative pronoun: BG:GS tæ mæ-ł'ó-ł'e-m ~ tæ mæ-ł'ó-ł'e-m 'they, those people'--BG:GS, LT:LG, etc. tæ mæ-ł'ó 'he, that person'; but the suffix -m may be present in PF:GS ?əs-ł'óm 'few, a few' and thus segmentable.

//-C₁V₁-// (after V₁) '?affectionate/pet name': BE:SJ tətæn 'mom, mother'--BE:SJ téen 'mother'.

//-C₁V₁C₂-// 'plural (many, usu. collective)': BG:GS ménmənæs 'their children', BG:SJ ?ímimæc 'grandchildren (a whole bunch)'--BG:SJ ?ímæc 'grandchild', BE:SJ stí'ʔti'ix^W 'tribe'--BE:SJ stí'ix^W 'person, Indian', BG:LG yóx^Wyox^Wen? 'arrows'--BG:LG yóx^Wen 'arrow', LT:LG swí'wi'qa? 'men'--LT:LG swí'qa? 'man', LT:GS + LT:LG ?əsq'əpq'əp ~ ?əsq'əpq'əp 'lots of groups, bunches, bunched together', BE:LG sóq^Wsoq^Way(?) 'younger siblings'--BE:LG sóq^Way(?) 'younger sibling'.

//-C₁V₁C₂(C₃)// 'dispositional aspect (now derivational)': BG:LG x^W-?óč'əč 'to stammer, stutter', BE:LG sél'sel'ten 'hand-spinner', BG:GS síy'isy? 'be afraid', LT:GS k^Wómk^Wom 'strong', LT:LG wícwic 'snipe (variety)' (cf. UHK wóweθ ~ wíθ-iyə 'snipe', named for its cry), BG:LG k^Wəy'k^Wəy? and PA:GS k^Wəyk^Wəy and k^Wəy? 'bluejay', PA:GS st'əlt'əel 'singer', BG:LG ?esyém'yem? 'pregnant', LT:LG q'əxq'əxəl? 'tin (metal)' and PA:GS q'əxq'əxəl 'tin can'.

//-C₁eC₂(C₃)// 'dispositional aspect (now derivational)': BE:SJ qíxqəx 'slippery' (cf. UHK qíx-əm 'to slip, skid').

//-C₂V₁-// (after V₁) or //-V₁C₂-// (after C₂) '(derivational)': BG:SJ, BE:SJ, etc. (?ay) níčičim 'talking, be talking'--LT:LG níčim 'speak, talk', BE:LG ?ay níčičimtowəl? 'telling stories [to each other]' (?əy(?) ~ ?ey(?) ~ ?ay 'continuative aspect' preposed), LT:LG sníčičim 'language'.

//C₁eC₂(C₃)-// 'dispositional/completive (derivational)': BE:SJ, BG:LG, LT:LG k^Wək^Wk^Wik^W 'red'--BE:SJ s-k^Wik^W-il 'kind of/partly red, pink', BG:LG x^Wək^Wx^Wik^W 'grey', LT:LG, PF:GS q'əxq'ix 'black'--BG:SJ q'ix-il 'kinda black [to get black]', LT:GS p'əq^Wp'ifq^W 'yellow', LT:LG ?əl'əlyə 'dreaming', BE:SJ q^Wəcq^Wic 'drowned'--BE:SJ q^Wic 'drift downstream', PA:GS, BG:LG q^Wəl'q^Wəl' 'overcooked', BG:LG qəl'qəl?-il? '[get] dirty', LT:LG k^Wəl'k^Wəl-iws 'murderer' (cf. UHK k^Wəl 'to hide', -iws 'body').

//C₁eC₂(C₃)-// 'derivational (dispositional)': LT:LG qén'qən and BE:SJ qén'qən? 'thief'--BE:SJ qén? 'steal', BE:SJ k^Wəx^Wk^Wəx^W 'oyster'--BE:SJ k^Wəx^W 'hard' (or this could be -C₁V₁C₂(C₃)).

//C₁æ-// 'diminutive': BG:GS nænəč'ó 'one young one', BG:GS mæmók^w 'all (of a subgroup)', BG:LG čæčítmex^w (e Halkomelemized for i of other speakers) 'little owl' and BG:LG čælæčítmex^w 'little owls'--BG:LG čítmix^w 'owl'.

//C₁e-// 'diminutive': PA:GS ləló'θin and BG:LG ləló'cin 'little plate'--BG:LG ló'cin 'plate', LT:LG sx^wex^wčæm 'awfully hungry'--LT:LG x^wč(?) 'starving' (literally, to death), BE:LG č'eč'f'əł' 'short', PA:GS pəpə'əθóž 'young bear'.

//-C₁e- ~ -?C₁(e)-// (after V₁) 'diminutive': BE:SJ sčálen'əy? 'little girl (about 3 yrs.)'--BG:SJ sčáney? 'woman', BE:LG cécəqet 'young tree', LT:LG ščə'šč 'trail'--LT:LG ščč 'road, [larger] trail', BE:SJ stó'tel'əwə? 'creek'--BE:SJ stól'əwə? 'river'.

//-C₁(e)-// (after V₁) '(derivational)': PF:GS čič' ~ čiq' ~ čeq' 'always; usually', PA:GS čičč 'up, up above'.

//C₁e- ~ C₁i-// + stress shift to last vowel 'durative aspect' (cf. Suttles 1980 for Musqueam Halkomelem): PA:GS x^yex^yk^wóm ~ x^yix^yk^wóm and BG:LG šičk^wóm? 'swim for pleasure'--BG:LG šók^wóm? 'bathe', PA:GS t'et'ečim 'swim around'--PA:GS t'ičim 'to swim'.

//C₁eC₂-// 'plural (many [of subj., obj., actions, nomin-als])': BG:SJ sčənčáney? 'women', BG:GS, LT:GS p'eč'p'ič't 'lots of charcoal'--BG:GS p'ič't 'charcoal', BG:GS kəmčəmič 'cabbages'--BG:GS kəmič 'cabbage', BG:SJ 'əy teptóponə? 'being hit [repeatedly]', LT:GS penpónex^w 'see them' and LT:LG penpónex^w 'seen it a lot of times, seen them (lots of people)', LT:GS c'əx^wc'əx^wtən 'several people being baptized (for high-born)([LT:LG] at naming ceremony)', BE:SJ niynəyem? 'people laughing'--BE:SJ nəyem? 'one person laughing', BE:SJ 'əm?fmeš 'they (group of people) walking', BG:LG sq'elq'ól'p'iq^w 'person having curly hair' (q'el- 'tangle', -p' 'on itself', -iq^w 'hair, top of head'), PA:GS t'elt'əlaw? 'both arms', BE:SJ 'əm?fmeč 'grandchildren' (see also less frequent variant under -C₁V₁C₂-), BE:SJ soq^wsóq^wəy 'all the cousins from the younger sibling'.

//C₁e'ə-// 'comparative': BG:SJ le'əloł' 'older'--BG:SJ lół' 'old, old person', BG:SJ č'e'č'č'ič' 'shorter' ~ 'short'--BE:SJ č'č'č'ič' 'short', LT:LG k^we'č'q^ws (?) and BE:LG k^we'č'q^ws and PA:GS k^wč'q^ws 'narrow' (prob. [k^we'č'q^wIs] /k^we'č'q^wis/ --cf. UHk 'ə'q^wis 'narrow'), LT:GS p'e'č'p'ic'(t) and LT:LG p'e'č'p'ič't 'small piece of charcoal', LT:LG s(ə)'ásiq^w 'younger' (cf. UHk s'ásəq^wt 'younger (sibling)'), LT:LG x^we'č'q^we? and PA:GS x^we'č'q^wə 'light(weight)' (cf. UHk x^wč'q^wə 'light(weight)'), BE:SJ mə'č'əm'in 'little; small piece' and PA:SJ mə'č'əmin? 'small'--BE:SJ mín' 'little, something small'.

//C₁f-, C₁f'?-// 'diminutive': BG:SJ sq'f'q^wemey? 'little dog'--BG:SJ sq'wemáy? ~ sq'wemáy? 'dog', BG:SJ c'ic'q'wáy? 'trout'--BG:SJ s-c'óq'wəy? 'salmon', BG:LG cíceqet 'a little tree'--BG:LG cqčət 'tree (or post, anything that sticks up)' (cf. BE:LG cécəqet 'young tree' alternative under -C₁e- above), BG:SJ mf'mən? s'f'ix^wəč 'baby [lit. "very small child"]', BG:LG 'əy λ'f'əlexem 'a little crackling'--BG:LG 'əy λ'əlexem tə hón 'the fire crackles', BG:LG šif'šiwə? 'to urinate (a little)(of female)'--BG:LG šifwə? 'to urinate (of female)', LT:SJ t'it'ičim 'to swim around' [or poss. 'to swim a little'], LT:SJ t'it'ox^w 'white fir' (cf. UHk t'áx^w and Ld t'úx^wac both 'white fir').

//-C₁(?)-// 'person classifier (with numeral one)': BG:LG, BG:SJ nen'č'ó? and PA:GS, BE:SJ nenč'ó? 'one person'--BG:SJ, LT:LG, etc. nč'ó? 'one'.

//C₁e-// 'person classifier (with numeral two)': BG:SJ sesəli? 'two people' and BG:LG nux^w-sesəli? 'two people in canoe, car or on horseback'--LT:LG, BG:SJ, etc. sčli? 'two'.

For examples of 'plural' //C₁f-//, //C₁V₁C₂-//, and //C₁æ- ~ C₁e-// see discussion below under PF:GS materials.

2. Discussion. The examples above ^{and below} show three varieties of ablaut and 24 varieties of reduplication. One ablaut, -Aá-, as noted above, is clearly a borrowing from UHk. The other two are derivational, the change signifying a shift in meaning but not apparently adding consistent meaning. More types and more examples will surely be found. Not

much more can be said at present without further examples.

In tabulating the forms and meanings of reduplication types above, some patterns emerge. In trying to determine whether one type is $-V_1C_2-$ (infix after C_2) or $-C_2V_1-$ (infix after V_1), it turns out that all other reduplication types begin with a consonant and that all infix reduplication is infix after V_1 of the root. Thus it is more likely that we have $-C_2V_1-$ infix after V_1 than the vowel-initial alternative infix after a consonant.

To summarize the types then:

? $-?V_1-$? 'pl. actors'	$C_1æ-$	'dim.'
C_1V_1-	? 'pl.'	$C_1æ-/C_1e-$	'pl.' (exx. below)
$-C_1V_1-$	'dim.'	C_1e-	'dim.'
$-C_1V_1-$, $-C_1V_1?$? 'resultative/ dispositional'	$-C_1e-$	$-?C_1(e)-$ 'dim.'
$-C_1V_1-m$	$-C_1e-m$ 'pl.'	? $-C_1e-$	'(deriv.)'
$-C_1V_1-$? 'affectionate/pet name'	C_1e-	$-C_1i-$ + stress shift to last V 'durative'
$C_1V_1C_2-$	'pl.' (see exx. below)	C_1eC_2-	'pl.'
$-C_1V_1C_2-$	'pl.'	$C_1e?æ-$	'comparative'
$-C_1V_1C_2(C_3)$	'dispositional'	C_1i- , $C_1i?-$	'dim.'
$-C_2V_1-$	'(deriv.)'	$-C_1i-$	'pl.' (exx. below)
$C_1eC_2(C_3)-$	'dispositional/ completive'	$-C_1(?)-$	'person classif.'
$C_1eC_2(C_3)-$	'dispositional'	C_1e-	'person classif.'

Twelve of these are prefixed, ten are infix, and only two are suffixed. All duplicate root material only, never material from prefixes or suffixes. Ten involve exact duplication of V_1 , while 14 add a new vowel; five involve adding /?/ at some place in the reduplication (sometimes sporadic due to UHk influence--UHk usually replaces /?/ adjacent to consonant with /./). Three dispositional affixes copy C_1 and C_2 and (if present in the root) C_3 , if either C_2 or C_3 are /?/. Six types of reduplication copy both C_1 and C_2 , 16 types copy C_1 but not C_2 ; only one type copies C_2 without C_1 , and only one type does not copy any consonant (it adds /?/ instead).

Some types can be grouped together by similarity of form and function. For example, C_1e- ~ C_1i- both involve

stress shift to the last vowel and both have a durative meaning. Further since all are reduplicative in form, all those with identical function can be grouped together as allomorphs, predictable from root forms and/or root meanings. Thus $-?V_1-$, C_1V_1- , $-C_1V_1-m$ (~ $-C_1e-m$), $C_1V_1C_2-$, $-C_1V_1C_2-$, $C_1æ-/C_1e-$, C_1eC_2- , and $-C_1i-$ are all allomorphs of a 'plural' reduplicating morpheme, say ($-R_1$) (shown here on the morphological level with a suffix hyphen to show it is an affix though it has prefixed, infix, and suffixed allomorphs. Sample allomorphic rules follow (all infix reduplication follows V_1 of the root):

{ $-R_1$ } 'plural (many)' → // $-?V_1-$ // 'plural actors' with
 ʒ'æʌ 'play' and perhaps other roots
 → // $-C_1V_1-m$ ~ (UHk-influenced $-C_1e-m$)// with
 tæ mæ-ʌ'ð 'him, that one' only
 → // C_1V_1- // with sqé 'older cousin' + -tæn/-ten
 'reciprocal', k'wót'æp 'flea', q'ix-éelos 'iris
 (black of eye)', others
 → // $-C_1i-$ //, // $C_1æ-$ or C_1e- //, // $C_1V_1C_2-$ // in
 PF:GS material only so far (see below)
 → // $-C_1V_1C_2-$ // 'plural (many, usu. collective)
 elsewhere in free variation with // C_1eC_2- //
 'plural (many [of subj./obj./actions--with verbs],
 many [with nominals])'

The last two allomorphs are both attested with at least two of the same roots, ?ímæc 'grandchild' and sóq'wæy? (æ ~ ə) 'child of younger sibling of parent; younger sibling'; SJ uses both with ?ímæc with no distinction in meaning; BE:LG reports the infix in sóq'wsoq'wæy(?) 'younger siblings' and BE:SJ reports the prefix in soq'wsoq'wæy 'all the cousins from the [parent's] younger sibling'. So it seems the latter allomorphs of $-R_1$ are in free variation in the language, with speakers settling at times for their own favorites. The slight variations of meaning are alloemes predictable semantically or in free variation.

{ $-R_2$ } 'diminutive' → // $-C_1V_1-$ // 'affectionate/pet name'
 with tæn 'mother'

- //-(?)C₁V₁-// 'diminutive' with yómeč 'spring salmon', q'émey? 'adolescent virgin girl', ?éxič 'lie down', nést-ox^w (bound) 'be night-past', x^w-nést (bound) 'completive-night', poss. others
- //C₁æ-// with nóč'o? 'one', mók^w 'all', čítmix^w 'owl', poss. others
- //C₁e-// with ló?cin 'plate, pan', pé?æc-oč 'bear-offspring', s-x^wé?-æm 'nominal-starving-strength (or middle voice)', č'f(ʔə)k' (bound) 'short', and others
- //-C₁e- - -?C₁(e)-// the latter with šéš 'road, large trail', poss. others, the former with stánay? 'woman', stól'æw? 'river', c(ə)qéč 'tree' (yielding 'young tree'), miq'-tén (bound?) 'sink-device', poss. others
- //C₁f- - C₁f?-// the latter with mín? - (bound) mén? 'little, s-th small', šifwæ? 'urinate (of female)', poss. others, the former with sq^weméy? 'dog', c'óq^wey? 'salmon' (yielding 'trout'), c(ə)qéč 'tree' (yielding 'little tree'), s-?ix^w-oč (bound) 'nominal-person-offspring', k'éləxæm 'crackle', t'fčim 'swim' (yielding 'swim around'), t'óx^w (bound?) 'white fir', and others

With verbs, the 'diminutive' semantic component can apply to the action (do it a little), the subject (a little person does it), or the object (do it to little things, do it resulting in little things); most examples so far, however, apply it to the action. Where there are both alternants with and without /ʔ/ added, the alternant without may be so-influenced by UHk. Notice that both -C₁e- and C₁f- are attested as diminutives with c(ə)qéč 'tree' with a slight differentiation of meaning, 'young tree' vs. 'little tree'. Since this meaning distinction is not maintained elsewhere with the suffixes, I suspect both meanings are allowed for both suffixes where the appropriate semantic context is present.

{-R₃} ?'resultative/dispositional' → //-C₁V₁?-// with s-ničim 'story', ničim-towæl? 'tell stories to one another', ?æs-wéq-ec 'stative (have)-male-spouse',

- poss. x^wóc' (bound)(yielding 'crazy'), poss. others.
- //-C₁V₁-// with pónex^w 'see s-th/s-o', ?æs-šém (bound?) 'stative-shallow', ?æs-qém (bound?) 'stative-calm (of water)', poss. others

As Suttles 1980 notes, when coining the term "dispositional aspect" for Musqueam, a dialect of Downriver Halkomelem:

"The form can indicate that there is an inclination or propensity for the action or quality expressed by the root or that the action occurs repeatedly. (In some of its usages this form might be called 'potential', while in others 'habitual' or even 'iterative'; I offer 'dispositional' hoping to convey something of this range of meaning.)"

The Nooksack -R₄ forms are cognate in function and sometimes also in form with Suttles Musqueam dispositional forms. The Nooksack -R₃ forms are not cognate in form with the Musqueam dispositional forms Suttles cites, but they are similar in semantic function in a number of cases. This dispositional aspect, as described by Suttles, is also found in UHk.-R₂, cognate in form and function (Galloway 1977: 105-107), though I called it 'inherent continuative' then, less appropriate than 'dispositional'.

- {-R₄} 'dispositional aspect' (prob. petrified and now derivational) → //-C₁V₁C₂(C₃)// with a number of bound roots not independently attested: x^w-?éč, síy?, k^wóm?, wíc (imitative of snipe cry), also with bound roots attested elsewhere: sél?-ten 'spin-device', s-t'fíl-Aé 'nominal-sing-deriv.', q'éx-əl? 'rattle-get/inceptive' (> 'tin, tin can'), and one root rarely free, k^wéy? '[cry of a] bluejay', and others
- //-C₁eC₂-// with qíx (bound) 'slip, slide', others
- //C₁eC₂(C₃)-// 'dispositional/completive' with some bound color term roots: k^wfá? 'red', x^wfá^w 'grey', q'fíx 'black', p'fíq^w 'yellow' (but not others, like k^wéq? 'white'), with ?élyæ (bound) 'to dream, have a vision', q^wfc 'drift downstream, drown', q^wéł? 'cooked', qel?-fíl (bound) 'dirt/bad-get/become', k^wéł?-iws (bound) 'to hide-body', others

→ //C₁šC₂(C₃)-// with qéén? 'steal', λ'šx^w 'hard'
(> 'oyster'), others

{-R₅} 'durative aspect' → //C₁e- f C₁i-// + stress shift
to last vowel: with šók^w-om? 'bathe', t'fš-im
'swim', and others

The first example of -R₅ is cognate with an example of
Musqueam 'durative' in Suttles 1980. The formal similarity
extends to the stress shift pattern as well.

{-R₆} 'comparative' → //C₁eʔš-// everywhere. It is found
with adjectival verbs such as lóλ' 'old', šik'
(bound) 'short', k^wis (bound) 'narrow', mín? 'lit-
tle, s-th small', x^wš(?) (related to x^wš? 'starving'?,
> 'lightweight'), síq^w (not attested elsewhere, poss.
'young'), and perhaps with nominal p'fš't 'charcoal'
(> 'small piece of charcoal', i.e. 'diminutive' allo-
some)

The element /eʔš/ is probably closely related (but not iden-
tical) to lexical suffix -eʔš 'like, similar' in tx^w-teʔš
'than; towards', c-eʔš 'this (female)' (vs. c-iyæ 'that
one (female)', ?isteʔš 'like, similar'. (UHK has cognates
with some of these and adds x^wi-x^w(e)-eʔš-qel 'mimic, talk
alike', lit. 'dim.-become-like-in voice/language', and others).

{-R₇} 'person classifier' → //-C₁(?)-// with nšč'o? 'one'
→ //C₁e-// with sšeli? 'two'

The suffix -šeli 'person classifier, people' is used with
the remaining numerals.

{-R₈} '(derivational)' → //-C₂v₁-// with ničim 'speak,
talk', ničim-towæl? (bound) 'speak/talk-to each
other' (> 'tell stories [to each other]'), s-ničim
'nominal-talk'

{-R₉} '(derivational)' → //-C₁(e)-// with šiq' 'always,
usually', šifš (bound) 'upper, above, high'

So far it seems that none of the allomorphs of redupli-
cation are predictable purely from phonological features and
few from semantic classes; most are lexically-determined.

Co-occurrence of more than one type of reduplication
is not common but does occur. An alternate plural formation

to -R₁ exists, namely the -æl- - -el- infix, inserted after
C₁ of the root or reduplicative prefix. This infix is used
frequently instead of -R₁ and is preferred to -R₁ when -R₂
'diminutive' is present. In a table I compiled from file
slips of PA, 21 out of 27 words for flora, fauna and body
parts (i.e., animate items) had -R₁ rather than -æl-/-el-
plurals. But 20 of the 21 replaced -R₁ with -el-/-æl- as
plural when inflected also with -R₂ 'diminutive'. The dim-
inutive reduplication is prefixed first; then the -el-/-æl-
is infixed after C₁ in the diminutive prefix (but not after
C₁ of lexical prefixes, such as x^w-, nox^w-, tx^w-, i-, nor
after s- nominalizer). Only one of the 21 examples from PA
did not shift to -el-/-æl- in diminutive plural, and it
shifted reduplication allomorphs (from C₁eC₂- 'plural' to
C₁æ- 'plural'): PA:GS mīt 'blue grouse', met'mīt 'blue
grouses', memīt 'little blue grouse', mæmemīt 'little
blue grouses'. Inanimate nominals and verbs in this list
also took originally, or shifted to, -el-/-æl- plurals in
combination with diminutives. No clear preference for -R₁
or -el-/-æl- plurals was apparent for non-diminutive verbs
and inanimates in the list.

Paul Fetzter gathered several thousand examples of plurals,
about 100 diminutives, and about 100 diminutive plurals from
GS. So it seems these inflections are very productive, though
perhaps not as productive as Fetzter thought. He may have
been leading GS a little further through using Sapir's article
on Comox reduplication to elicit. In Fetzter's file slips
(2.1157-2.1160, my numbering) there is a detailed note on
George Swanaset's attitude toward diminutives:

"Note: DIMINUTIVES. G.S. did not like to give these
forms. Whether this dislike was 'associational' in
character or was due to general boredom with 'vocabulary
collecting', I cannot say. However, he flatly refused
to give dim. for non-living items (*VIZ. the exceptions
which were brought out in story-telling), and he argued
rather petulantly about 'creating' dim. for botanical
items. His comment usually was: 'Well, this is not
"legal," i.e., would never be used in speech, but if it
were it would go like the following (a form would then
be "created").' And thruout, even when discussing fauna
items, he would prefer to suffix -oš, 'baby', to a

particular morpheme or word. In addition, any attempts to make *dim.* by asking for 'little bear' or 'baby cougar' were singularly futile. In these cases he would resort to normal affixational devices to produce the desired form: prefixing [preposing] *əmíʔmIn* 'little' or suffixing *-oɬ* 'baby'. He would only produce *dim.* when I asked for the 'offspring' of an item. It is to be observed that this linkage in G.S.'s mind renders the obtaining of *dim.* for non-living items extremely difficult. If they exist, they can be elicited only thru text-transcription and the chance uncovering of them."

In PF's section of 84 file slips after a divider labeled, "diminutives", indeed only one is inanimate, <ɣáɣačó> 'little lake'--<ɣələ́ɣačó> 'pl. [+ dim.]'; several are animate though perhaps non-living to non-Indians: <stɛɛ·tɛ·čos> /stɛʔɛtɛčos/ 'little cadaver'--pl. [+ dim.] <stɛlí·tɛléčó·s> /stɛlɪtɛʔɛčó·s/ [over-reduplicated] and <šwUnéʔnem> /šxʷ-níʔnəm/ 'little medicine man's power' or? 'medicine man's little power'--<šwUnéʔneʔəm> /šxʷnɪʔnəʔəm/ pl. [+ dim.] Fetzer obtained few, if any, diminutives of verbs.

Pamela Amoss's work with GS produced non-animate diminutives more easily, as did work with SJ and LG (by PA, BE, LT, BG). It is hard to tell for certain whether GS's initial animate-only diminutives reflected an original Nook-sack restriction or was more idiolectal. Other Central Salish languages, however, seem more tolerant of diminutives in non-animates and verbs than PF's work with GS implies.

One feature of the diminutive plurals PF obtained is a higher percentage of probably erroneous, over-reduplicated and over-pluralized forms, such as 'little cadavers' above, <spɛlí·pInpéɛnuxʷ> 'little black onions' (vs. BG: SJ *spéɛnɛxʷ* 'camas') and PF:GS <selí·se·lsɛ́·wUθʷ> 'little herrings' (vs. PF:GS <ɛ́·wUθʷ> 'herring'). There are 16 such forms showing irregular combinations of plural reduplication with plural *-əl/-əɛl-* infix, or double diminutives with two diminutive reduplications, etc. These seem clearly errors, perhaps from a variety of causes: lack of a real *dim.* or *dim. pl.* for these forms, problems with memory, difficult or seldom-used forms, over-insistent elicitation, etc.

Regarding plurals, the huge number of PF:GS examples

reflects patterns much more productive than those for diminutive and found with verbs of all types as well as with nominals. For example, PF:GS has the following (phonemization mine): *spíwʔ* 'ice'--pl. *spo[w]píwʔ* (//s-pew-píwʔ//), *skʷéyil* 'day'--*skʷi[y]kʷéyil* (//s-kʷey-kʷey-il//), *qʷémeɣʔ* 'adolescent virgin girl'--pl. *qʷélæmeɣʔ* ~ *qʷemqʷémeɣ*, *hæɬéwɛs qʷémeɣ* 'nicely-built young woman'--pl. *hæihæɬéwɛs qʷemqʷémeɣ*, *qʷétʷæm* 'sweet'--pl. *qʷetʷqʷétʷæm*, *kʷés* *tɛ* *hón* 'the fire is hot'--pl. *kʷæskʷés* *tɛ* *hənhón*, *póyon* 'to bend [s-th]'--pl. *pipóyon* (//peɣ-póy-on// < //C₁eC₂-póy-V₁n//), *ɬ(e)ómen* 'to spear (s-th)'--pl. *ɬəlómen*, *təʔíɬ* 'certain (one)'--pl. *təʔtəʔíɬ*, *qéys* 'at present'--pl. *qəyqéys*, *txʷtəʔé* 'which way?' (also 'toward, than')--pl. *txʷtélæʔé*, *móqʷənés* *tə* *čélɪxʷs* 'he clenches his fist'--pl. *móqʷmóqʷənés* *tə* *čəlčélɪxʷs*, *həwʔkʷæ* '[to be/to have] none'--pl. *heyhəwʔkʷæ* (?) (e may be æ throughout this word), *kʷwétæts* 'someone' (//kʷe-wét-æs// 'demonstrative-who?-subjunctive 3rd person')--pl. *wetwétæts* (at times the demonstrative element appears prefixed and at times preposed in the cognate UHk words as well), *kʷéq* 'white'--pl. *kʷákʷeq* (/a/ probably /æ/ here).

The above examples show plural reduplication on everything from animate and inanimate nominals to adjectival verbs, adverbial verbs, negative verbs, indefinite nominals (with demonstrative prefixes and interrogative verb roots), and some color terms (adjectival verbs). Unfortunately, with verbs PF seldom indicates what is pluralized: the subject, the object, or the action. But there is evidence for all three types from a few sentence examples and from verbs whose action can only be performed once by the same speaker. Undoubtedly semantic context almost always disambiguates (as in the sentence examples and texts we have).

Just as the context disambiguates what is pluralized semantically, so a plural context often allows plural (and diminutive) inflection to be dropped. Thus, as in Halkomelem and other Salish languages, plural inflection is usually optional, seldom obligatory. Verbs with plural inflection

are attested simultaneously with all Nooksack transitivizers, reflexives, statives, inceptives, passives, somatic suffixes, middle voice, prefixes, etc. Continuative $\text{ʔæy}(\text{ʔ})$ - ʔey can also precede such verbs, and in PF:GS it is sometimes used in place of plural inflection to imply plural. It is not really being used as a plural, of course, as can be seen from sets with and without both $\text{ʔæy}(\text{ʔ})$ and plural inflection. In one place (2.544, [box 2, card 544]) PF glosses ʔæy - eləp alone as 'continuative plural (people working together on something, steadily, without cessation of activity)'; - eləp 'second person plural possessive' here provides the 'plural' feature.

In the PF:GS material there are several additional allomorphs of $-\text{R}_1$ 'plural': $-\text{C}_1\text{f}$ -, $\text{C}_1\text{V}_1\text{C}_2$ -, and $\text{C}_1\text{æ}$ - ~ C_1e -. Another plural affix, i -, is also found prefixed to a few roots beginning in $/\text{y}/$ or $/\text{w}/$ and preceded by the s - (~ š -) nominalizer, just as in UHk. Some examples follow.

$/\text{i}/$: $\text{swi}^{\text{ʔ}}\text{qæ}$ 'man'--pl. qóx $\text{siw}^{\text{ʔ}}\text{qæ}$ 'lots of men', šyówen 'guardian-spirit complex, power song'--pl. šiyíwen (both ó and f here probably represent $//\text{š}/$), $\text{šyó}^{\text{ʔ}}\text{wæ}$ 'old woman who gets astral messages'--pl. $\text{šiyí}^{\text{ʔ}}\text{wæ}$, $\text{šyic}^{\text{ʔ}}\text{æm}$ 'sand bar'--pl. $\text{siyic}^{\text{ʔ}}\text{æm}$ (note that all GS material quoted with $/\text{c}^{\text{ʔ}}/$, as here, would be pronounced by other speakers with $/\text{č}^{\text{ʔ}}/$ --the $/\text{c}^{\text{ʔ}}/$ is Halkomelemized by GS, as are $/\text{c}/$, θ , $\text{θ}^{\text{ʔ}}/$ and $/\text{x}^{\text{ʔ}}/$, respectively $/\text{č}/$, c , $\text{c}^{\text{ʔ}}/$, $\text{š}/$ for other Nooksack speakers), $\text{šyix}^{\text{ʔ}}\text{ot}$ 'Fraser River canoe type'--pl. $\text{šyix}^{\text{ʔ}}\text{ot}$ ($-\text{ot}$ here may be $-\text{ow}(\text{e})\text{t}$ 'canoe'). Other y - and w -initial roots have other plurals. $/\text{i}/$ is not reduplicative but is mentioned in passing here. It is also confirmed in BE:SJ.

$//-\text{C}_1\text{f}/$: PF:GS $\text{q}^{\text{w}}\text{émtæn}$ 'blanket (mt. goat hair but used for cover)'--pl. $\text{q}^{\text{w}}\text{éq}^{\text{w}}\text{ímtæn}$, $\text{k}^{\text{w}}\text{émelox}^{\text{w}}$ 'root'--pl. $\text{k}^{\text{w}}\text{é}^{\text{w}}\text{k}^{\text{w}}\text{ímelox}^{\text{w}}$, $\text{k}^{\text{w}}\text{óx}^{\text{w}}\text{tæn}$ 'ring in dip-net'--pl. $\text{k}^{\text{w}}\text{é}^{\text{w}}\text{k}^{\text{w}}\text{íx}^{\text{w}}\text{tæn}$, lówex 'rib'--pl. lælíwex , móqsen 'nose'--pl. $\text{mæmí}^{\text{ʔ}}\text{qsaen}$, $\text{swóq}^{\text{w}}\text{æt}$ 'blanket of mt. goat and dog hair [ornate, ceremonial measure of wealth]'--pl. $\text{s}[\text{w}]\text{owíq}^{\text{w}}\text{æt}$, $\text{séx}^{\text{w}}\text{ætæn}$ 'bladder (man/animal)'--pl. $\text{sésíx}^{\text{w}}\text{ætæn}$, $\text{smóé}^{\text{ʔ}}\text{qin}$ 'brain'--pl. $\text{s}[\text{m}]\text{lemí}^{\text{ʔ}}\text{qin}$, $\text{šq}^{\text{w}}\text{ólten}$ 'language'--pl. $\text{šq}^{\text{w}}\text{aq}^{\text{w}}\text{íltən}$,

$\text{šx}^{\text{w}}\text{é}^{\text{ʔ}}\text{fníni}^{\text{ʔ}}\text{títi}\theta$ 'jugular vein'--pl. $\text{šx}^{\text{w}}\text{é}^{\text{ʔ}}\text{fníni}^{\text{ʔ}}\text{títi}\theta$, šwówæ 'cougar'--pl. šwowiwæ ($/\text{æ}/$ here may be $/\text{e}/$ in both), $\text{θ}^{\text{ʔ}}\text{ówæx}$ 'basket made of bark strips'--pl. $\text{θ}^{\text{ʔ}}\text{é}^{\text{ʔ}}\text{íwæx}$. This reduplication often seem to also have Aæ or Ae preceding it and changing V_1 of the root to $/\text{æ}/$ or $/\text{e}/$. The roots each have a bilabial or labialized consonant as C_1 or C_2 , but this may just be accidental. Most roots with a labial or labialized C_1 or C_2 lack this allomorph of 'plural' $-\text{R}_1$. This reduplication is also found, rarely, in file cards of PA:GS, for example, PA:GS $\text{k}^{\text{w}}\text{ók}^{\text{w}}\text{æ}^{\text{w}}\text{læ}$ 'hemlock'--pl. $\text{k}^{\text{w}}\text{ók}^{\text{w}}\text{íx}^{\text{w}}\text{æ}^{\text{w}}\text{læ}$, and móqsen 'nose'--pl. $\text{mæmí}^{\text{ʔ}}\text{qsen}$.

$//\text{C}_1\text{V}_1\text{C}_2-$: PF:GS hælf 'the living (person alive)'--pl. hælhælf , $\text{hæihæi}^{\text{ʔ}}\text{éwes}$ $\text{q}^{\text{ʔ}}\text{æm}^{\text{ʔ}}\text{éme}^{\text{ʔ}}$ 'nicely-built young women' (seen above), $\text{k}^{\text{w}}\text{æsk}^{\text{w}}\text{æ}^{\text{w}}\text{s}$ tə hənhón 'the fires are hot' (seen above), nætæi $\text{s}^{\text{ʔ}}\text{íten}$ 'morning meal'--pl. nætnætæi $\text{s}^{\text{ʔ}}\text{íten}$ (note, as in pl. of 'jugular vein', that the adjectival is pluralized but not the nominal; both are pluralized in 'nicely-built young women' and some other NP's), $\text{pæ}^{\text{ʔ}}\text{æk}^{\text{w}}\text{éli}$ 'pipe stem'--pl. $\text{pæk}^{\text{w}}\text{pæ}^{\text{ʔ}}\text{æk}^{\text{w}}\text{éli}$, $\text{sqó}^{\text{ʔ}}\text{ox}^{\text{w}}$ '(young) shoot'--pl. $\text{sqoxqó}^{\text{ʔ}}\text{ox}^{\text{w}}$ (x prob. sic for x^{w}), $\text{x}^{\text{ʔ}}\text{íc}$ 'sliver'--pl. $\text{x}^{\text{ʔ}}\text{ic}^{\text{ʔ}}\text{x}^{\text{ʔ}}\text{íc}$ (other speakers would use šifč as the root), $\text{ʔéy}^{\text{ʔ}}\text{x}$ 'crab'--pl. $\text{ʔæy}^{\text{ʔ}}\text{éy}^{\text{ʔ}}\text{x}$, $\text{ʔóx}^{\text{w}}\text{nitem}$ 'to go after (seek)' ['be sought' prob. more accurate]-- $\text{ʔox}^{\text{w}}\text{ʔóx}^{\text{w}}\text{nitem}$, $\text{q}^{\text{ʔ}}\text{æt}^{\text{ʔ}}\text{exem}$ 'a racket (of pots rattling, etc.)'--pl. $\text{q}^{\text{ʔ}}\text{æt}^{\text{ʔ}}\text{q}^{\text{ʔ}}\text{æt}^{\text{ʔ}}\text{exem}$ ($/\text{t}^{\text{ʔ}}/$ prob. error for $/\text{t}/$, cf. UHk $\text{q}^{\text{ʔ}}\text{étxem}$ with same meaning), PA:GS $\text{ʔéiqæy}^{\text{ʔ}}$ 'snake'--pl. $\text{ʔæi}^{\text{ʔ}}\text{éiqæy}^{\text{ʔ}}$. These may result in part from replacement of $/\text{e}/$ by $/\text{æ}/$ in slow, careful speech (thus $\text{C}_1\text{æC}_2-$ may really be C_1eC_2-); the two forms with C_1eC_2- would have to be errors, and the one form with C_1ic_2- an error or UHk influence: PF has $[\text{x}^{\text{ʔ}}\text{ic}^{\text{ʔ}}\text{x}^{\text{ʔ}}\text{f}^{\text{ʔ}}\text{c}^{\text{ʔ}}]$. There are some cases in PF:GS of $/\text{e}/$ realized as $[\text{I}]$ in environments where UHk would require $/\text{e}/ \rightarrow [\text{I}]$ (between $/\text{x}^{\text{ʔ}}/$ and $/\text{c}^{\text{ʔ}}/$ for example). In Nooksack $[\text{I}]$, however, is an unstressed allophone of $/\text{i}/$ and not of $/\text{e}/$.

$//\text{C}_1\text{æ}$ - ~ $\text{C}_1\text{é}$ - ~ $\text{C}_1\text{e}/$: PF:GS š-wóttæc 'owner (of power or physical property)'--pl. šwæwóttæc (š - and wótt - are usually prefixes, see Galloway 1983b, 1984a), $\text{k}^{\text{w}}\text{íx}$ 'a person

who runs around with everyone (very loose)' (prob. 'to sleep around, be promiscuous' is more accurate gloss)--pl. $k^w\acute{e}k^w\acute{f}\acute{x}$ ($k^w\acute{e}xk^w\acute{f}\acute{x}$, however, appears as 'repeatedly loose (immoral)' in phrases for 'man who commits adultery' and 'woman who commits adultery'), $\acute{t}\text{-}s\acute{e}q\ \acute{t}q\acute{e}lc$ 'half moon' --pl. $\acute{t}\text{-}s\acute{e}sq\ \acute{t}q\acute{e}lc$, $\text{?}\acute{e}s\text{-}l\acute{e}\text{?}\acute{e}m$ 'resident, co-resident' --pl. $\text{?}\acute{e}sl\acute{e}l\acute{e}\text{?}\acute{e}m$ ~ $\text{?}\acute{e}sl\acute{e}l\acute{e}\text{?}\acute{e}m$ (vs. PF:GS,PA:GS $l\acute{e}l\acute{e}l\acute{e}m\text{?}$ 'houses, winter houses', which can be interpreted as $l\acute{e}l\text{-}l\acute{e}l\acute{e}m\text{?}$ with $C_1\acute{e}C_2\text{-}$ from root PA:GS,PF:GS $l\acute{e}l\acute{e}m\text{?}$ 'house, winter house'), possibly $h\acute{e}(y)h\acute{e}wk^w\acute{e}$ (or $h\acute{e}(y)h\acute{e}wk^w\acute{e}$ 'none (plural)' (see above, /y/ would have to be an error), possibly $k^w\acute{a}k^w\acute{e}q$ 'white (plural)' if PF <a> here is /æ/, as it often is. These are the only examples so far, and most have phonological or morphological oddities, making the reduplication type uncertain as 'plural'.

Phonologically a number of observations about Nooksack reduplication can be added at this point. Addition of reduplication often helps clarify the form of the root. For example, C_1 and C_2 of the root stand out in PF:GS $\acute{a}\text{'}\acute{e}l\acute{a}\text{'}\acute{e}y\text{?}$ 'shovel-nose canoes' and PF:GS $seq\text{'}seq\text{'}\acute{e}yt$ 'messengers'; with singular $\acute{a}\text{'}\acute{e}y\text{?}$ there could be doubt about the presence of the /l/ phonetically; with singular $sq\text{'}\acute{e}yt$ the /s/ seems more like {s-} nominalizer than a root consonant, but if it were the nominalizer the plural would be $*sq\text{'}\acute{e}yq\text{'}\acute{e}yt$ or $*sq\text{'}\acute{e}l\acute{e}yt$.

Stressed suffixes with unstressed root retain stress even with stressed reduplication (multiple primary stress is allowed). Some examples can be seen above. Also illustrated above is the fact that //ew// and //ey// formed from reduplication often sound like [o(w)] and [i(y)], respectively. They are often transcribed as [o] and [i] by PF and others. This is a feature in common with UHk as well.

/ʔ/ between identical vowels doesn't count as C_2 for $-R_1$. For example (all PF:GS): $p\acute{a}k^w\acute{p}\acute{e}\text{?}\acute{a}k^w\acute{e}li$ 'pipe stems' and $p\text{'}\acute{e}k^w\text{'}\acute{p}\text{'}\acute{e}\text{'}\acute{a}k^w$ pl. of $p\text{'}\acute{e}\text{'}\acute{a}\text{'}\acute{e}k^w$ 'pipe, smoke, stove' (in all three words /p/ and /k/ are likely, cf. UHk $p\text{'}\acute{e}k^w\text{-}et$ 'to smoke it (meat, fish, hides)', $p\acute{a}\text{?}\acute{e}\theta\acute{t}$ 'bear cub--

pl. $p\acute{a}p\acute{e}\text{?}\acute{e}\theta\acute{t}$, $s\acute{e}\text{?}\acute{e}q\acute{e}lin$ 'fern [bracken branches or ends]' --pl. $seqs\acute{e}\text{?}\acute{e}q\acute{e}lin$, $sq\acute{d}\text{?}\acute{o}x^w$ '(young) shoot'--pl. $sq\acute{o}x\acute{q}\acute{d}\text{?}\acute{o}x^w$, $sp\acute{e}\text{?}\acute{e}\theta$ 'bear'--pl. $sp\acute{a}p\acute{e}\text{?}\acute{e}\theta$, $sw\acute{e}\text{?}\acute{e}lt$ 'forest'--pl. $sw\acute{e}lw\acute{e}\text{?}\acute{e}lt$, $s\text{?}\acute{e}\text{?}\acute{e}w\acute{o}t$ 'younger generation'--pl. $s\text{?}\acute{o}[w]\text{?}\acute{e}\text{?}\acute{e}w\acute{o}t$.

Verbs are attested with similar variety of reduplication types as nominals, for example, $C_1\acute{e}C_2\text{-}$, $-C_1V_1C_2$, $C_1V_1C_2\text{-}$, $C_1\acute{e}\text{-}$ ~ $C_1\acute{e}\text{-}$, (also $-el\text{-}/-ael\text{-}$) for 'plural' $-R_1$, etc. Different types or allomorphs of $-R_1$ are even attested with the same roots in some cases. For example (all PF:GS): $x\acute{e}t\text{-}\acute{e}n\acute{f}s$ 'tooth ache'--pl. $x\acute{e}t\text{-}\acute{e}n\acute{f}s$ vs. $x\acute{e}t\text{-}\acute{e}liq\acute{e}n$ 'head-ache'--pl. $x\acute{e}l\text{-}\acute{e}liq\acute{e}n$, $\text{?}\acute{f}y\text{-}\acute{o}m\acute{a}x^y$ 'pretty (of a girl)'--pl. $\text{?}\acute{e}y\text{?}\acute{f}y\acute{o}m\acute{a}x^y$ vs. $\text{?}\acute{f}y\text{-}\acute{e}t\text{-}\acute{d}m\acute{i}x^y$ 'pretty (for anyone)'--pl. $\text{?}\acute{e}l\acute{i}y\acute{e}t\acute{d}m\acute{i}x^y$ and $\text{?}\acute{f}y\text{-}\acute{e}m$ 'strong (of physique or power)'--pl. $\text{?}\acute{e}l(i)y\acute{e}m$ vs. $\text{?}\acute{f}y\text{-}\acute{o}\theta$ (prob. $\text{?}\acute{f}y\acute{o}\theta$) 'sharp' ("good edge")--pl. $\text{?}\acute{a}y\text{?}\acute{f}y\acute{o}\theta$, $q^w\acute{a}\theta\text{-}\acute{f}l\text{-}\acute{e}m$ 'to go downstream'--pl. $q^w\acute{a}q^w\acute{a}\theta\acute{f}l\acute{e}m$ ~ $q^w\acute{a}l\theta\acute{f}l\acute{e}m$ vs. $q^w\acute{f}i\theta\text{-}\acute{a}x\acute{e}n$ 'below (the house, level of, etc.)'--pl. $q^w\acute{e}\theta q^w\acute{f}i\theta\acute{a}x\acute{e}n$, and, as above, $q\text{'}\acute{e}l\acute{e}m\acute{e}y\text{?}$ ~ $q\text{'}\acute{e}m\acute{q}\text{'}\acute{e}m\acute{e}y$ 'young (adolescent virgin) girls'.

Since PF's material is so rich in plurals, it also fortunately includes at least 44 examples of R_3 , R_4 , R_5 , and R_9 with plural R_1 reduplication or with $-el\text{-}/-ael\text{-}$ plural infix. I've already discussed the interaction of R_1 and R_2 , where R_1 shifts to the $-el\text{-}/-ael\text{-}$ infix rather than permit two reduplications. This is true of three or four examples with R_3 , eight with R_4 , and four with R_5 . The other plurals actually show multiple reduplication of R_1 with R_3 , R_4 , R_5 , and R_9 . Thus:

$-R_3 + -el\text{-}$: $q^w\acute{a}q^w\acute{a}y$ 'fish pole'--pl. $q^w\acute{e}l\acute{a}q^w\acute{a}y$, $\theta\text{'}\acute{e}\theta\text{'}\acute{e}x^w\acute{e}m$ 'blue'--pl. $\theta\text{'}\acute{e}l\acute{e}x^w\theta\text{'}\acute{e}x^w\acute{e}m$, $l\acute{e}l\acute{e}m$ 'winter house'--pl. $l\acute{e}l\acute{e}l\acute{e}m$ (but cf. PA:GS $l\acute{e}l\acute{e}m\text{?}$ 'house'--pl. $l\acute{e}l\acute{e}l\acute{e}m\text{?}$); $-R_3 + C_1V_1\text{-}$: $q\acute{f}\text{?}q\acute{e}$ 'tender or soft (of meat, leather, etc.)'--pl. $q\acute{e}q\acute{f}\text{?}q\acute{e}$; $-R_3 + C_1V_1C_2\text{-}$: $\text{?}\acute{e}sw\acute{e}\text{?}\acute{w}\acute{a}e\acute{q}\theta$ 'woman living with a man (in old days man and wife)'--pl. $\text{?}\acute{e}sw\acute{a}q\acute{w}\acute{e}\text{?}\acute{w}\acute{a}e\acute{q}\theta$; and some dubious, over-pluralized examples: $-R_3 + C_1V_1\text{-} + -ael\text{-}$: $q\text{'}\acute{e}q\text{'}\acute{a}w$ 'skate (fish)'--pl. $q\text{'}\acute{e}l\acute{e}q\text{'}\acute{e}q\text{'}\acute{a}w$, $c\acute{d}\acute{e}\acute{c}\acute{e}l\text{-}k^w\acute{o}m$ 'how soon (will it be)?'--pl. $c\acute{d}\acute{e}l\acute{e}c\acute{e}l\acute{e}l\text{-}k^w\acute{o}m$, and $\acute{e}x^y\acute{e}x^y\acute{e}m$ 'shallow'--pl. $\acute{e}x^y\acute{e}l\acute{e}x^y\acute{e}x^y\acute{e}m$; $-R_3 + C_1\acute{e}C_2\text{-} + -C_2V_2\text{-}(?)$:

yúyúmæc 'butterfly'--pl. yemyúm?æmæc. -R₃ is '?resultative/dispositional'.

-R₄ 'dispositional' + -el-/-æl-: k^wæ^wk^wí^w 'red'--pl. k^wæ^wlæ^wk^wí^w, q^wæ^wxq^wí^w 'black'--pl. q^wæ^wlæ^wxq^wí^w, q^wæ^wxq^wí^w šwæ^wθiten 'thunderhead'--pl. q^wæ^wlæ^wxq^wí^w šwæ^wθiten (the second word is 'cloud' and may be šx^w?æ^wθiten, cf. UHk šx^w?é^wθetsl), p^wæk^wp^wæk^wtæn 'swimming log, cork on gill-nets'--pl. p^wæ^wlæ^wp^wæk^wtæn, sáy^w?sey^w? 'afraid'--pl. seláy^w?sey^w? (é ~ í here), šx^wí^wx^wí^wit 'a covetous person'--pl. šx^wæ^wlít^wí^wit, sk^wó^wé^wk^wó^wé^w '[ruffed] grouse'--pl. sk^wæ^wlíf^wé^wk^wó^wé^w (í prob. error for ó); -R₄ + -i-?: <séc?se?c> (these brackets, normally for graphemic transcriptions, here mean PF's original phonetic spellings)(prob. s'íc?'ic') 'lazy person (wouldn't work)' (cf. UHk ?í'c'-el 'temporarily lazy')--pl. <sayicic> (poss. siy(?)í'c?'ic', prob. an erroneous form); -R₄ + C₁eC₂-: q^wó^wm^wq^wæ^wm 'strong (of body)'--pl. q^wæ^wm^wq^wó^w[m]q^wæ^wm (UHk has /k^w/ not /q^w/ in its cognate), s^wx^wáy^wx^woy 'wood hoods of cedar and the custom involved [dance and ceremony]'--pl. s^wx^wey^wx^wáy^wx^woy, ?én?æn 'maggie'--pl. ?en?æn?æn, and k^wé^wq^wk^wí^wq^w 'sticky'--pl. k^wé^wq^wk^wí^wq^w (singular prob. k^wí^wq^wk^wí^w instead); -R₄ + -C₁f-: sq^wé^wí^wq^wí^w 'muskrat'--pl. sq^wé^wí^wq^wí^wí^w, é^wé^wx^wí^w 'nettle'--pl. é^wé^wí^wx^wí^w, é^wé^wx^wé^wæ^wx^w 'buzzard [osprey?]'--pl. é^wé^wí^wx^wé^wæ^wx^w, x^wém^wx^wem 'hawk'--pl. x^wé^wx^wím^wx^wem (cf. UHk x^wém^wx^wím^wels 'large hawk, red-tailed hawk' [root x^wím- 'grab'] vs. UHk x^wém^wx^wem 'giant horsetail reed, common horsetail reed'); -R₄ + C₁V₁C₂-: mít'met' 'limber'--pl. mít'mít'met', and x^wó^wí^wx^wway (?) '(senile) feeble shaking (one person shaking all the time)'--pl. ?ey^w? x^wó^wí^wx^wway (/a/ prob. /e/); -R₄ + C₁e-: q^wé^wsq^wí^wsicæn 'spider'--pl. q^wé^wí^wsq^wésæcæn, and ?æsx^wé^wém^wx^wem 'low tide'--pl. ?æsx^w[é^wlx^wé^wém^wx^wem (/é/ Halkomelemized to [í]); erroneous form: k^wæ^wlk^wé^wlæ^wlk^wway 'bluejays'--k^wé^wí^wyk^wæ^wy? 'bluejay'.

-R₅ 'durative' + -el-/-æl-: k^wak^w'wís 'narrow'--pl. k^wæ^wlæk^w'wís (/a/ prob. /e/, /k^w/ prob. /q^w/, cf. UHk q^wé^wq^w'wís 'narrow'), s^wxaxáy 'person always crying (also baby)'--pl. s^wxalaxáy (all /a/ here prob. /e/ or /æ/), x^wé^wí^wlíc 'cater-

pillar'--pl. x^wé^wlíc ["painted on the back"], sq^wó^wq^wé^wl 'speech'--pl. ?ey q^wó^wlæ^wq^wé^wl; -R₅ + C₁eC₂-: šmamók^w[os 'target for arrow'--pl. šmém?mamók^w[os.

-R₉ '(derivational)' + C₁e-: ííq^w 'often'--pl. íéííq^w.

It is interesting to note a pair of words above with the same root and different reduplications: šx^wé^wx^wæ^wm 'shallow' and ?æs-x^wé^wém^wx^wem 'low tide'. The former is over-pluralized with C₁V₁- + -æl- in the plural; the latter is pluralized with C₁e- or C₁V₁-. Several others in the sets above are also over-pluralized, usually with reduplication plus -el-/-æl- infix. These are probably erroneous forms. Further research may turn up additional types of Nooksack reduplication, but new types must now be fairly rare.