

Formalizing the Assignment of Vowel Height
in Lushootseed

Ellen M. Kaisse
University of Washington

1. One of the goals of generative phonology has been to predict what sort of rules can be in a 'disjunctive' relationship, that is where the application of one rule prevents the application of the other, even if its structural description is present. The question is interesting because all cases of disjunction constitute counterexamples, hopefully principled ones, to the general hypothesis that rules apply in linear order, each to the output of the preceding one.

In particular, I should like to discuss the behavior of pairs of rules often called 'neighborhood' or 'mirror-image' rules. These are rules that state that a change takes place in some focus segment if it is next to, or 'in the neighborhood' of some conditioning segment (determinant). A familiar example is the description of English velar stops, which are fronted in the neighborhood of a front vowel, whether the vowel precedes ([lik^V]) or follows ([kil]). This observation can be implemented by a set of two rules, one effecting the progressive assimilation, the other the regressive. A notation has been proposed which

would then collapse these two rules into a single rule schema - informally:

$$k \rightarrow k^Y\% _i$$

The question now arises: if one of the rules abbreviated by this notation applies, can the other apply also? Anderson (1974), attempting to answer this question, proposed that:

The cases supporting differ systematically from those supporting conjunctive order in that the disjunctive cases all involve rules which alter the categorial value (+/-) of features, while the conjunctive sets all involve rules which specify the numeric detail value of a feature on an arbitrary, quasi-continuous scale, without thereby affecting the categorial value distinctively. [p.122; a footnote credits this observation to Allan Timberlake.]

The purpose of this paper is twofold. By investigating the mirror-image rule assigning vowel height in a Skagit dialect of Lushootseed, I hope to make clearer just what sorts of rules should apply conjunctively, without having to refer to the somewhat ill-defined notion of a numeric detail rule assigning a quasi-continuously scaled feature. Secondly, I wish to add to the known cases of conjunctively applied mirror-image rules an example which gives two kinds of evidence for repeated application within a single language. Anderson cites several examples of languages where conjunctive application can be inferred because the affected segment undergoes the rule to a greater phonetic degree when

The retracted vowels can occur independently in roots (e.g., iaçm to smash vs. iaçm to pet, stroke)², and certain roots (including those with retracted vowels) require them in suffixes. Accordingly, many suffixes have plain and retracted alternants, e.g., -us/-uș face, -xan/-xaṇ leg.

3.2 Immediately before uvular consonants the opposition plain vs. retracted vowel is neutralized. The actual timbres here are the retracted ones, but in phonemic notation we write "unmarked" a u as this allows simpler morphophonemic rules, cf. q̣^uuct fat with [u/o] vs. doubly reduplicated q̣^uəq̣^uúq̣^uct fatter with automatic [ɔ] (in cases of reduplication, glottalized plosives lose their glottalization in all but their last occurrence in a word). Roots beginning with a uvular never have phonemically retracted vowels.

A phoneme ǀ -- put between brackets in the chart -- is structurally present in certain forms with morphological glottalization, but in a^ǀ the vowel is automatically colored ǀ, and the phonetic result is [ǀ^ǀ], not distinct from *[ǀ^ǀ]; we write ǀ^ǀ.

3.3 Of the vowels, ʌ is found in a few words only, mostly as an alternative of a or ǀ. The vowel ə is not found in stressed syllables, while i and u are limited to the latter (unstressed [i/e] and [u/o] represent syllabic y and w, see 3.4); unstressed a is found only in the combinations a^ʔ and ʔa, and at the end of a word, where it is not opposed to ə.

In Shuswap words other than clitics, one syllable has the stress. The general rule is, that the vowel which a morpheme has under the stress is dropped or replaced by ə in unstressed occurrences of that morpheme. Thus we have piq^w to look but paq^wú^lǀx^w to look over the terrain (-ú^lǀx^w); the vowel of this suffix is dropped in the root-stressed word xí^w-lǀx^w-m to harrow (resonantal glottalization in suffixes shifts, where possible, to a resonant immediately following the stressed vowel).

3.4 If a root ends in a resonant, then in unstressed position before a consonant or at the end of a word, this resonant becomes syllabic, cf. the reduplications tm-tumms he dreams of it, tn-tána

ears (plur. of tána, cons. in reduplication-syllable deglottalized, see above), x-k^wl-k^wal lukewarm, ky-kayt chickenhawk [ke-kéyt], kaw-kw sagebrush [kǀkw^o] (second velar automatically labialized), t^sw-tu^sw^t hard [tɔ:ǀǀ:ɔ:] (cf. t^sw^{um} to make hard [ǀ^sw^{om}]).

3.5 Whereas syllabic y w γ ʃ ʃ^w and their glottalized counterparts ǀ^y ǀ^w, etc., are phonetically vowels [e^ʔ o^ʔ], etc., syllabic m n ǀ l ǀ^l have variants [əR əǀ] and [R̥ R̥^ʔ] (where R = resonant and ə stands for [ɛ ɛ^ʌ ɔ u ə], depending on surrounding and speech-style). The variants [R̥ R̥^ʔ] occur when the resonants are preceded by a consonant of their own series (labial or dental-lateral). Thus we have t^upm̥ [ǀ^lóp̥m̥] to twist ([p] with velic release) but t^upns̥ [ǀ^lóp̥n̥s̥] he twists it; s^utns̥ [šóǀn̥s̥] he sucks it but p^uns̥ [póš̥n̥s̥] he rubs it. The vowelless pronunciation [m̥ n̥ ǀ^l], then, is characteristic of the second members in the sequences pm̥ p̥m̥ mm̥ tn̥ t̥n̥ ǀn̥ ln̥ nn̥ tl̥ t̥l̥ ǀl̥ nl̥ and also p̥m̥, etc. (mm̥ nn̥ ǀl̥ are pronounced as long [m̥: n̥: ǀ^l:]). Note that this phonetic feature places t̥ t̥ ǀ^l n̥ ǀ^l ǀ^l in a different class than c̥ ǀ^l s̥ y̥ (tn̥ [t̥n̥] versus cn̥ [č̥n̥], etc.).

4. The Shuswap consonant system is identical with the Proto-Interior-Salish one, except that *t̥ and *ǀ^l are merged in Sh t̥. (Also, in roots containing two glottalized obstruents, Sh deglottalizes the first one). The full vowels a ǀ i u ǀ likewise reflect the old system, except that certain instances of a and u (the latter before labialized cons.) may reflect an older stressed ə, cf. Sh swat Cb swat Ka suwét (e < *a) who, Sh sapn Cb sápn Cr sápṇ (i < *a) daughter-in-law versus Sh qalt Cb qalt Cr qel fresh, Sh səsáp blueberry Cb səsəpt̥ huckleberry; and for Sh u cf. Sh nuǀ^wnuǀ^w woman Cb nuǀ^wnuǀ^w Cr noǀnoǀ spouse, Sh suk^w- to get blown away Cb suk^w- Cr suk^w- to drift downstream versus Sh s-c-muǀ^w snow Cb smóǀ^wǀ^w snow falling Cr máǀ^w cover with snow, Sh səsúǀ^w Cb səsóǀ^w blue grouse. In addition, we find wSh a where a retracted ǀ would be expected; for instance, the suffix -ilx body has the form -alx with roots requiring retracted suffixes (cf. 3.1, end). ESh has in fact a re-

tracted *ɨ* in these cases (see 7).

5.1 In the ESh dialect of Enderby Reserve the consonant system is the same as that of WSh, but the syllabic resonants *m̥ n̥ ɲ̥* show certain -- clearly innovative -- deviations as compared to the WSh dialects. These deviations are covered by the following rules:

A. Syllabic *m̥ n̥*

(A1) remain unchanged after *p̥ ɸ̥ m̥ n̥* (series 1);

(A2) become *w̥ ɰ̥* [o· oʔ] after labialized cons. (incl. *w̥ ɰ̥*; series 7, 8);

(A3) become *aʔ* in all other cases.

B. Syllabic *n̥ ɲ̥*

(B1) remain unchanged after *t̥ ɬ̥ ɳ̥ l̥ ɭ̥* (series 2);

(B2) become *ɣ̥ ʝ̥* [e· eʔ] after *c̥ ɟ̥ s̥ ʃ̥* (series 3);

(B3) become *aʔ* in all other cases.

It will be seen that rules (A1-3) and (B1-3) parallel each other. Rules (A3) and (B3) can be collapsed into a single rule to the effect that *m̥ n̥ ɲ̥* change to *aʔ* unless special conditions (rules A1, 2 and B1, 2) hold. Rules (A1) and (B1) can be collapsed into a single rule to the effect that *m̥ n̥ ɲ̥* remain unchanged if preceded by a cons. of their own series. Rules (A2) and (B2) cannot be combined as simply, but if we associate the "grave" labial series with the "flat" labialized ones into one class, and the "acute" dental-lateral series with the "sharp" palatal one into another class, then we can say that the grave resp. acute nasal resonants shift to the glides of their own class after a flat resp. sharp consonant.

5.2 Examples (we give the WSh and Enderby forms separated by a slant, except for (A1) and (B1), where they are identical):

(A1) *t̥upm̥ to twist, ʔap̥m̥ to wipe, Enderby Sh m̥m̥x̥aɪp̥ large basket carried on the back* (WSh has suffixless *m̥iɬ̥x̥*), Enderby Sh *m̥m̥l̥t̥aɪp̥* [m̥:^{m̥}ɛl̥t̥aɪp̥] *poplar* (WSh has the total reduplication *m̥l̥m̥l̥t̥aɪp̥*).

(B1) *s̥q̥l̥aɪt̥n̥ salmon, m̥aɪn̥s̥ he mixes it, ɪn̥t̥aɪs̥ he stabs him, t̥k̥i̥ḁn̥s̥ he uncovers it, s̥uɪn̥s̥ he freezes it.*

(A2) *tsunk̥^{m̥}/tsunk̥^{w̥} island, k̥^{m̥}t̥us̥/k̥^{w̥}t̥us̥ always, pux̥^{m̥}/*

pux̥^{w̥} to blow, yawm̥/yaww̥ [yɛwo·] to fish with a dipnet, q̥^{w̥}amq̥^{mt̥}/q̥^{w̥}amq̥^{wt̥} good-looking, ɟ̥^{m̥}pap̥/ɟ̥^{w̥}pap̥ to be exhausted, all gone, ptiɬ̥^{m̥}/ptiɬ̥^{w̥} to spit, ɟ̥liɬ̥^{m̥}/kliɬ̥^{w̥} (sic) to scratch, cxiuq̥^{m̥}/cxiuq̥^{w̥} to dip water.

(B2) *ɟ̥ntas̥/cytas̥ he hits him, spaɟ̥n̥/spaɟ̥y̥ string, s̥ək̥^{w̥}us̥n̥t̥/s̥ək̥^{w̥}us̥y̥t̥ star, sx̥^{w̥}uynt̥/sx̥^{w̥}uyyt̥ [ʃ̥x̥^{w̥}o ye·t̥] ice.*

(A3) *s̥t̥m̥k̥aɪt̥/s̥t̥ḁk̥aɪt̥ daughter, s̥k̥m̥x̥is̥/skaʔx̥is̥ grizzly bear, s̥ɟ̥m̥q̥in̥/s̥ɟ̥ḁq̥in̥ brain, q̥i̥q̥ɟ̥m̥t̥/q̥i̥q̥ɟ̥aʔt̥ to twitch, s̥i̥w̥aɪm̥t̥/s̥i̥w̥aɪl̥at̥ ~~a~~ widow(er) ~~sm̥~~ sm̥ʔaʔm̥/saʔáʔa wife, c̥q̥aɪn̥m̥/c̥q̥aɪn̥a to shoot.*

(B3) *p̥n̥han̥/pah̥an̥ at some time, ever, s̥k̥ap̥q̥n̥/s̥k̥ḁ́p̥q̥a head, s̥t̥m̥-t̥um̥m̥/stat̥u̥ma dream, q̥^{w̥}aq̥^{n̥t̥}/q̥^{w̥}ḁ́q̥^{aʔt̥} poor, t̥up̥ns̥/t̥up̥as̥ he twists it, ʔəst̥p̥n̥i̥ḁx̥^{w̥}/ʔəst̥p̥aʔi̥ḁx̥^{w̥} to go out, exit, s̥ix̥^{w̥}ns̥/s̥ix̥^{w̥}as̥ he spills it, s̥x̥n̥x̥ḁn̥x̥/sx̥ax̥ḁ́x̥ax̥ pebbles (double reduplication of *sx̥an̥x̥ stone*).*

5.3 Though these shifts are few and regular, they considerably complicate Enderby Sh morphophonemics. Instances:

5.3.1 The interrogative enclitic *n* and the evidential enclitic *nka* have the alternative forms *n*, *ɣ*, *a* and *nka*, *yka*, *aka* depending on the consonant they follow, cf. *s̥^{w̥}uyt̥-n-k̥ are you tired?*, *st̥ət̥s̥^{w̥}ú̥s̥-n-k̥/st̥ət̥s̥^{w̥}ú̥s̥-ɣ-k̥ are you blind?*, *s̥əx̥^{w̥}ḁ́p̥m̥x̥-n-k̥/s̥əx̥^{w̥}ḁ́p̥m̥x̥-a-k̥ are you Shuswap?* In the same way, the suffix *-m̥x̥* *people, person* retains its *m̥* only after labials (cf. the last example) but has the form *-w̥x̥* after a labialized consonant, e.g., *c̥x̥k̥^{w̥}ḁ́t̥k̥^{w̥}x̥ Chase people* (the name contains the suffix *-at̥k̥^{w̥}a water, river*), and the form *-ax̥* in the remaining cases, e.g., *s̥plac̥in̥ax̥ people of Enderby Reserve* (*s̥plac̥in̥*, in WSh *s̥p̥əɪm̥c̥in̥*). The 2 pl. possessive suffix, in WSh *-m̥p̥*, likewise has the three forms *-m̥p̥*, *-w̥p̥*, *-ap̥*. The 1 sg. possessive prefix, in WSh *n-*, has the form *a-* after the absolute article *ɣ-* but is *n-* after the relative article *t̥-*, cf. *ɣ-a-c̥it̥x̥^{w̥}, t̥-n-c̥it̥x̥^{w̥} my house*, cf. also *n-n-c̥it̥x̥^{w̥} on (n-) my house*.

5.3.2 Whereas in WSh the unstressed form of the suffixes *-m̥in* (*-m̥i̥n̥*) *implement*, *-tan̥ means*, *-cin̥ (-c̥i̥n̥) mouth*, etc., *-q̥in̥ (-q̥i̥n̥) head, top*, *-x̥an̥ (-x̥ḁn̥) leg, foot* is simply derived from the stressed one by dropping the vowel, in Enderby Sh the resonant takes the form required by the preceding consonant, and we have *-m̥aʔ(?)*, *-tn̥*, *-cy (-c̥y̥)*, *-qaʔ(?)*, *-xaʔ(?)* respectively.

5.3.3 For any root C_1VC_2 with a nasal C_2 the regular reduplication pattern is cut across by the phonetic rule, unless C_1 is of the same series as the nasal (as, e.g., in $\dot{t}ána$ ear, pl. $\dot{t}ána$), cf. $sxanx$ stone, $sxaxnx/sxáxax$ small stone, pebble, $sxnaxnx/sxaxánx$ stones, $sxnaxnx/sxaxáxax$ pebbles; further cases like x^wmx^wamt/x^wx^wamt lonesome, $stntumn/statuma$ dream, q^wamq^wmt/q^wamq^wmt good-looking, $mman/mamán$ shadow, sk^wnk^winm/sk^wak^wina Indian potato, $knkint/kakint$ slow/gentle.

5.3.4 Especially verb-morphology is on the surface more complex in Enderby Sh than in the WSh dialects. For example, in the latter we have with root-stressed verbs the suffix -m for the intransitive form, matched by -n-s for the 3rd pers. transitive form, e.g., $siqm$ to break, $siqns$ he breaks it. In Enderby Sh there are five different possibilities according to whether the rules 1, 2 or 3 of sect. 5.1 apply to either of these forms:

| Meaning | WSh | Enderby Sh | Rules |
|-----------------|------------------------------|------------------------------|-------|
| <u>twist</u> | $\dot{t}upm$: $\dot{t}upns$ | $\dot{t}upm$: $\dot{t}upas$ | 1 : 3 |
| <u>blow</u> | pux^wm : pux^wns | pux^w : pux^was | 2 : 3 |
| <u>rub fire</u> | x^wulm : x^wulns | x^wula : x^wulns | 3 : 1 |
| <u>stroke</u> | $iacm$: $iacns$ | $iacá$: $iacys$ | 3 : 2 |
| <u>break</u> | $siqm$: $siqns$ | $siqa$: $siqas$ | 3 : 3 |

A further complication consists in the fact that in the intrans. form the underlying m will reappear when a suffix or clitic beginning with a vowel is added, making the m nonsyllabic. This is the case, e.g., with the 3rd pers. suffix -əs and idem clitic $ək^wa$. Thus, besides $siqa$, pux^w we have $siqməs$, $pux^wməs$ and $siqm-ək^wa$, $pux^w-ək^wa$ in Enderby as well as in WSh.

6. The "Kinbasket" Shuswap dialect of Athalmer, B.C.³ -- the easternmost of all Sh dialects -- likewise shifts the syllabic nasals to w \dot{w} y \dot{y} a \dot{a} under certain conditions, but with the following two differences as compared to Enderby Sh. In the first place, n \dot{n} shift to y \dot{y} exclusively (and never to a \dot{a} ?), so that, e.g., WSh $pnmins$ he finds it is here $pymins$ (Enderby Sh $pamins$). In the second place, the resonants are preserved in their origin-

al form not only after a consonant of their own series, but m is also retained before p, and n before t (both are probably retained before all consonants of their own series, but our material contains neither examples nor counter-examples). In this way, we have WSh and Athalmer Sh $mlxntas$ he kicks him (n preserved before t) versus Enderby Sh $mlxatás$; WSh and Athalmer Sh \dot{q}^wmpap to be exhausted, all gone (m preserved before p) versus Enderby Sh \dot{q}^wmpap ; WSh and Athalmer Sh $sək^wúsnt$ star (\dot{n} preserved before t) versus Enderby Sh $sək^wúsyt$. The 2nd pl. possessive suffix, in WSh -mp, always has this same form in Athalmer Sh (m preserved before p), versus Enderby Sh -mp, -wp, -ap (see 5.3.1).

To sum up, in cases like $\dot{t}upm$ to twist, $\dot{?}iin$ to eat all three types of Sh have the same forms. In cases like $mlxntas$, \dot{q}^wmpap , $sək^wúsnt$ (see above) WSh and Athalmer Sh go together versus Enderby Sh $mlxatás$, \dot{q}^wmpap , $sək^wúsyt$. In cases like q^wamq^wmt handsome, $pusns$ he rubs it, $sk^wixís$ grizzly bear, WSh stands alone versus Enderby and Athalmer Sh q^wamq^wmt , $pusys$, $ska^?ixís$. Finally, each type has a different form in cases like WSh $pnmins$ Enderby Sh $pamins$ Athalmer Sh $pymins$ he finds it.⁴

7.1 The Enderby Sh vowel system adds to that of WSh the retracted vowel \dot{i} , phonetically [I/ɛ]. It differs from \dot{a} \dot{u} not only in timbre but also in that it lacks a peculiar strangled or "rasping" quality that is often heard in \dot{a} \dot{u} in this dialect. This characteristic of \dot{a} \dot{u} is lacking in WSh. The peculiar pronunciation of these Enderby Sh vowels may explain the impression this dialect made on Teit (p. 456): "The Shuswap Lake division differs the most, these people having a "heavy", labored mode of utterance, and their speech sounds jerky and guttural in comparison with that of other Shuswap." The "guttural" pronunciation of \dot{a} \dot{u} reflects the fact that these vowels originally represent syllabic \dot{s} \dot{s}^w (cf. WSh $noyns$ or $ni\dot{s}^wns$ he bends it, a case of inversion where the vowels/resonants o/ \dot{s}^w and i/y change place; Enderby Sh has $muys$, with a different initial and nonretracted u). The status of \dot{i} in terms of antiquity is less clear than that of \dot{a} \dot{u} , which certainly go back to Proto-Salish. Because of their etymological importance, all record-

ed cases with *ɨ* are summed up here, with their WSh counterparts. Comments follow.

In roots CVC the vowel *ɨ* occurs in:

*ɨ*l-t to overflow, WSh *ɨ*al-t, *ɨ*Al-t.

*ɨ*i payment for a cure, WSh *ɨ*ai- to pay for a cure.

cl-*ɨ*l grove, clump of trees, cf. WSh *ɨ*l- to stand (up), a root not requiring retracted vowels in suffixes.

s-*ɨ*l-sa Oregon grape, WSh s-*ɨ*als. In Enderby Sh the word contains the suffix *berry*.

sɨl-t to fall off (of leaves), WSh sal- to come off, come apart.

c-kɨl board, WSh c-kal, c-kAl id., cf. also c-kal strip of skin.

In longer units not containing productive suffixes *ɨ* occurs in:

petetɨt to boil, WSh petetát.

mɨn-ɨp balsam tree, WSh mlanɨp.

s-k^wɨlɨm messed up, WSh c-k^wɨlɨm rough, branchy, with a plain vowel, cf. also, however, WSh c-k^wɨɨc crooked, a possible inversion with a retracted vowel.

k^wlɨk^wlɨ grass, WSh k^wlák^wla.

s-wlɨla iron, WSh s-wl-wlalm (in Kuipers 1974:264 incorrectly given with *i* instead of *e*).

Retracted *ɨ* in suffixes:

mɨ-ɨlx to lie flat on the stomach, pl. besides c-mat lying flat, WSh c-mat id., mɨ-alx to roost.

mɨm-ɨla to have one's child baptized, WSh c-mɨm to get baptized, to get married. Derivative not recorded for WSh.

?s-tm-ɨlx to appear briefly, allow a glimpse to be caught of one, WSh ?stomál (Kuipers 1974:148), possibly related to WSh x-tmaɨča, a reduplication of *x-təm-aiča? easily hurt or moved to tears, and perhaps ultimately to WSh stam easy.

ck^wl-ɨlx to pull away, WSh ck^wlalx (Kuipers 1974:171).

x-ɨl-cɨn having a "raw" mouth (after eating certain berries), WSh ɨal-t bitter, sour, salty. Derivative not recorded for WSh.

xl-ɨlx to spawn, WSh xl-aix-m.

t-x^wl-p-ɨws to burst open (as a barrel), spring a large leak (vs. t-pətk^w-p-ɨws id. small leak), WSh x^wal-m to open a ditch, divert water, x^wl-əp there is a break in the ditch.

yl-p-ɨlx to turn around, WSh yl-p-alx to change direction, turn back.

7.2 In the large majority of cases we find the regular correspondence ESh *ɨ* - WSh *a* < **ɨ*. Where this is not the case, ESh sometimes has a retracted vs. WSh a plain *i*-form (cl-*ɨ*l, s-k^wɨɨc-ɨm), a variation well-known in Interior Salish, and which sometimes results from the replacement of retracted by plain vowels, sometimes reflects an older symbolic alternation (Kuipers 1979: 11). In the case of c-kɨl WSh has both retracted and plain *a*-forms, but historically these are both retracted (*a* < **ɨ* and *a* < **ɨ*, see sect 4). As is pointed out in Kuipers 1973, sect. 11, there is a class of originally suffix-stressed verbs which have secondary root-stressed derivatives with *i* *ɨ*, expressing meanings which involve a demolishing, breakage or loss.⁵ These root-stressed forms account for ESh *ɨ*l-t overflow, sɨl-t fall off (of leaves), c-kɨl board, orig. something cut up. The WSh cases with *a* reflect the original *ə*-form of the root, which appears in monosyllabic forms, and also in languages which retract the stress, cf. Cb *ɨ*rməntc spread (of water) Sq *ɨ*ɨiám overflow, Cb *ɨ*rən to peel, Cb *ɨ*rən cut thin material. The original suffix-stressed nature of these verbs is clear from simplices like WSh kl-əm cut strips of skin, from derivatives like ESh t-sɨl-p-ɨča? skin peels off, bark is shed and from the Coast Salish cognate Sq. *ɨ*ɨiám = *ɨ*y-ɨy-ám (with *y* < *1). In this way, the WSh correlates of ESh words with *ɨ* can be fully accounted for, except for the case ESh *ɨ*ɨlsa WSh *ɨ*ɨals Oregon grape, where the above explanation does not apply. If the word is connected with Sh *ɨ*l-səm to oil Sq *ɨ*ɨls to be shiny, the WSh *a* is regular, and ESh has remodeled the word so as to contain the suffix -u/ɨsa? berry, but the vowel remains unexplained. One can compare Cb *ɨ*ɨrs currants, also with *i*, and Cb *i* corresponds to WSh *a* also in WSh *ɨ*ɨs Cb

čorís kingfisher (for which I recorded Enderby Sh člaš, with plain a); here Cr has čálus, which suggests a remodeling of the same Proto-Salish root *čəls shiny, but the palatal vowels in ESh sčíl-sa and in Cb sčirs, čerís remain to be explained.

In pətətít to boil (Ka *pat, with retracted vowel) we have, in the same way as in the 'verbs of demolishing', a morphological formation requiring a palatal vowel, cf. WSh mlxəxix to kick about besides mlx-am to kick. In almost all cases, then, we find ɨ in formations where a palatal vowel is dictated by morphology, so that ɨ is paralleled by i when the root as such lacks the retraction feature. ESh gives no evidence for an older *ɨ as an independent part of a morpheme. The ɨ in ESh kʷlɨkʷlɨ grass is probably identical with the y in Cb kʷrayq yellow and the i in Cb qʷɨli? gall. In čɨi payment for a cure we have an additional case with ɨ belonging to the root *či/al- (Kuipers 1979, no. 41), and hence an additional retracted-nonretracted doublet (*ibid.*, sect. 2).

8. In the few available examples, Enderby Sh a < m, n in a suffix appears as retracted ɔ in combination with roots requiring retracted vowels, cf. mlmɔçut to cure oneself < *mlm-n-çut (WSh mlə-mns he blesses him, mləmn medicine); wlxmɔçut to consider oneself too good, keep aloof (WSh wlxmçut); sxlxəlɔx Salmon River people < *s-xl-xəl-mx (cf. xl-xəl-t steep).

9. As was mentioned in sect. 3.3, WSh can have unstressed a at the end of a word; examples are qáʔca father, píxa skirt. This a is not opposed to ə. When the 3rd pers. possessive suffix -s is added to such a word, the resulting unstressed sequence -as does not differ from, e.g., the 3rd pers. subject suffix -əs, or from the final part of the unanalyzable suffix -alos chest. In Kuipers 1974, a difference in transcription (es vs. əs) is maintained to express a morphophonemic difference (see sect. 3.4). In Enderby Sh there is a phonemic difference between ə and a < *n, e.g., in 3rd pers. transitive verb-forms such as tɨpas < *tɨpns he twists it with [ɨʔš] vs. qáʔcos his father with [ɨš, əš]. I am not sure whether a difference is maintained word-finally, say, in sqáə dog (WSh sqáə) vs. píxa to hunt (WSh píxm).⁶

10. A change of syllabic nasal resonants to open vowels is known from Greek and Indo-Iranian. It also occurs sporadically (and for n only) in other Salish languages, cf. Th sáwas WSh sawns he asks him, Th sáwatp WSh sáwntp you pl. ask him (in Th this shift takes place in verb endings before s and t only, cf. Th sawnxʷ WSh sawnx is preserved). An interchange of -- consonantal or syllabic -- n with y or i is found even more sporadically in other Salish languages, cf. Sq nikʷ- to swing, rock Se yikʷ- to shake; WSh pn- Ka pi:- Th pi?- in words with temporal reference, but these cases must be studied against the background of the merger of n and l (Halkomelem) and the shift of l > y (Thompson, Clallam, Comox, part of Squamish).⁷ The regular shifts of both syllabic m and n are typical of ESh only.

The tendency of m to shift to w, and of n to shift to y lends support to Jakobson's identification of the opposition labial vs. dental consonant with the opposition back vs. front vowel. However, the term "vowel" refers here to the phonetic realization of syllabic resonants.

There is a certain lack of elegance in the necessity of indicating the place of the stress in such Enderby Sh words as sxáxax pebble, while such an indication is superfluous not only in the WSh and Athalmer Sh equivalents sxaxnx/sxaxyx but also in parallel Enderby Sh cases like qʷamqʷwt good-looking (WSh qʷamqʷmt), sxʷuyyt ice (WSh sxʷuynt). If unstressed a < m, n is regarded as "syllabic h", then resonants shift to resonants and all cases will be of the same type (Enderby Sh sxaxhx). In Kuipers 1974:30 (sect. 3.4) another parallel between unstressed aʔ and syllabic resonants in WSh is pointed out. The etymological identity and phonemic near-identity (i.e., near-predictability of consonantal and vocalic occurrences) of the consonants w y h and the vowels u i a is characteristic of a number of Salish and Wakashan languages, cf. Nater 1979, Kuipers 1967:58 (sect. 76), Lincoln and Rath 1980 (introduction).

R e f e r e n c e s

- Carlson, B.F.
1972 A Grammar of Spokane, Ph.D. thesis (U. of Hawaii).
- Gibson, J.A.
1973 Shuswap Grammatical Structure, Ph.D. thesis (U. of Hawaii).
- Kuipers, A.H.
1967 The Squamish Language (The Hague, Mouton).
1973 "About Evidence for Proto-Salish *r", Dutch Contributions to the 8th ICSL held at Eugene, Oregon (Leiden).
1974 The Shuswap Language (The Hague, Mouton).
1979 "On Reconstructing the Proto-Salish Sound System" (MS, to appear in IJAL 1981/2).
- Lincoln, N.J. and Rath, J.C.
1980 North Wakashan Comparative Root List (Ottawa, National Museum of Man, Mercury Series; in press).
- Nater, H.F.
1979 "Bella Coola Phonology", Lingua 49:169-187.
- Teit, J.A.
1909 The Shuswap (Leiden, Brill).
- Thompson, L.C.
1977 "Salishan and the Northwest" (MS).
- Vogt, H.
1940 The Kalispel Language (Oslo, Academy of Sciences).

F o o t n o t e s

- 1) Data on the Shuswap dialect of Enderby were collected in the summer of 1979, on that of Athalmer during a few days' visit in 1974. Thanks are due to Mrs. Cindy Belknap and Mrs. Suzan David (Enderby) and to Mr. Gus Pascal (Athalmer) for their cooperation. For Western Shuswap see Kuipers 1974; I use a different transcrip-

tion for some of the vowels, the 1974 symbols e a o being replaced by a ą ɥ respectively. The following abbreviations of language names are used: Cb Columbian, Cr Coeur d'Alene, Ka Kalispel, Sh Shuswap, ESh Eastern Sh, WSh Western Sh, Sq Squamish, Th Thompson.

- 2) The two roots are etymologically related, providing another example of the symbolic alternation of retracted and nonretracted forms (Kuipers 1979, sect. 2).
- 3) The name derives from that of Chief Knpasqt, lit. "Thunder-Day". The ancestors of the Kinbasket Band "belonged mostly to the Upper North Thompson Band. It seems, however, that some of them belonged to the Lower North Thompson Band, and a few to the Adams Lake and Shuswap Lake Bands" (Teit 460).
- 4) The dialect of Chase (Gibson 1973) does not differ in its phonology from that of Enderby. The resonant-rule given l.c. 18, to the effect that 'm, n > i after front obstruents' is inexact, cf. such examples as q^wičə wash, sičə blanket, x^wú?ce again (e, ə for our a) < q^wičm, sičm, x^wu?cm.
- 5) As Thompson (1977:29) mentions, the semantic character of this formation is not defined in Kuipers 1974:52; this was done, however, in Kuipers 1973 (sect. 11), where also a parallel formation in Proto-Slavic is pointed out (ibid. fn. 3). The semantics of the Th cases (Thompson, l.c.) differs from that in Sh, making it probable that we are dealing with language-specific innovations here.
- 6) This also goes for parallel cases extended with possessive -s. Gibson's transcription does not settle this detail for the Chase dialect, either, cf. the examples with final -e and -ə in fn. 4 above.
- 7) A direct shift of n to i occurs in the 1st pers. sing. prefix (čn > či) in some Southern Interior Salish languages, cf. Vogt 18, 21, Carlson 16.