SOME PHONOLOGICAL DEVELOPMENTS IN STRAITS SALISH:

Laurence C. Thompson
N. Terry Thompson
University of Hawaii

Barbara S. Efrat
British Columbia Provincial Museum, Victoria

and

Pacific and Asian Linguistics Institute
University of Hawaii

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0. The linguistic expanse which Suttles (1951:6) has aptly called Straits Salish (St) has a superficial uniformity that might suggest little profit in the application of the comparative method. But careful study of the details shows that it is indeed profitable and that Proto-Straits Salish (PSt) emerges as quite different from any of its descendants.
For the purposes of exposition here we shall name speech norms in terms of several local groups: Clallam (Cl), aboriginally spoken by peoples along the north shore of the Olympic Peninsula from Clallam Bay to Port Discovery; Sooke (So), used by peoples across the Strait of Juan de Fuca on the facing southwest shore of Vancouver Island; Songish (Sg), whose speakers wintered around the area of modern Victoria but travelled across Haro Strait to the west shore of San Juan and Henry Islands for seasonal gathering; Saanich (San), the speech of peoples utilizing the shores of the Saanich Peninsula and neighboring Saltspring, Mayne, Stuart, and Sidney Islands; Lummi (Lm), covering both the speech of the Lummi proper, using roughly the northeastern half of the San Juan Islands and the mainland shore near Bellingham, and that of the Semiahmoo around Boundary Bay from Point Roberts to Birch Bay; and, just off the mainland to the south, Samish (Sam), whose speakers dominated a cluster of islands around Samish and Guemes Islands.

1. Systematic sound correspondences in Straits are for the most part simple and straightforward. In fact, most consonants correspond to their phonological sames throughout, after the pattern Cl p : Lm p : San p : Sg p : So p, etc. But comparison reveals a number of phonological (as well as some grammatical) features that separate Clallam from the rest of the complex; these remaining dialects will be referred to collectively as Northern Straits (NSt). This split assumes the proportions of a language boundary.

1.1. The two most obvious phonological innovations shared by Northern Straits are the development of Proto-Straits stressed *ü to a low back vowel, more or less rounded in different environments (examples 1, 2), merging with certain reflexes of PSt *á; and the fronting (and sometimes raising)
of PSt *á in other environments (examples 3, 4). PSt *u and *a are thus split in these dialects.

(1) Cl súl Lm So sól Sa Sg sái way
(2) Cl ʷ'úŋ Lm So ʰ'óŋ San Sg ʰ'án weep
(3) Cl ʰ'áioŋ NSt ʰ'éioŋ salt(y)
(4) Cl ʰ'á'ám NSt ʰ'é'ám rough, windy, stormy

1.2 A third innovation is shared by all the northern dialects except Samish: PSt *c reduced to a simple spirant (examples 5, 6), for the most part merging with reflexes of PSt *s, except following old stressed vowel in syllable codas, where the occlusion is still shown in Lummi, at least, by ? preceding the modern spirant (examples 7, 8). (The details of development in the Canadian dialects are not fully understood at this time.)

(5) Cl cən Sam cən Lm San Sg So sən I (1st sg. enclitic)
(6) Cl cəy(ə)s Sam cələs So səyəs Lm San Sg sələs hand
(7) Cl ?əŋəc Lm So ?əŋə's San ?əŋə's give it to me
(8) Cl sták'ə Lm sté'skə So sté'skə(ə) back

Samish, for which we unfortunately have only scanty data, apparently follows the northern dialects in the first two developments, showing the same vowels that are characteristic of neighboring Lummi; it has, however, retained the plain affricate c. Insufficient data make it impossible to see whether it may resemble Clallam in any other respects, but that appears unlikely. It seems most reasonable to assume that the *c > s development had spread through most of the northern dialects but had not yet reached Samish. (We shall not attempt further consideration of Samish in this study. Statements about Northern Straits are to be construed tentatively
to include Samish except for cases involving the development of PST *c.\)

1.3. A fourth innovation affects Clallam and also Sooke, the most southwesterly of the northern dialects: original *1 has been converted to y (9, 10), in certain positions further vocalized to i (11, 12).

(9) Cl ?á?yəŋ So ?é?yəŋ Lm San Sg ?é?1əŋ house
(10) Cl So ye?kʷx Lm ləkʷx San Sg ləkʷəx rib
(11) Cl či?áqí So či?éqí Lm čəl?éqí San Sg čəléqí yesterday
(12) Cl kʷən(e)ti So kʷintí Lm San Sg kʷintəl fight

1.4. A change of more recent date separates Saanich from the other dialects: Saanich has converted earlier *č to ē.

(13) San sέám? Cl scúm? Lm So sčóm? Sg sčám? bone
(14) San pέəs Cl púčs Lm So póčes Sg pácəs cradle basket
(15) San sččiə? Cl scúčia? Lm scčiə? So (s)ččiə? leaf
(16) San nέə? Cl nču? Lm Sg So nčə? one

There are also a number of forms in which Saanich unglottalized θ corresponds to Clallam and Samish c and to s in the other dialects (17-19), but the correspondence is sporadic, and there are cases where forms with θ are in competition with forms having s (e.g., 20, and see also later 28), still others where only s is found (5, 6, 8, 21-24).

(17) San əý?əqʷt Cl cęý?əqʷt Lm sőyəqʷt So Sg sáy?əqʷt dig
(18) San əán Cl cůŋ Lm So són Sg sân go up away from water
 Apparently the change č > ė occurred under the stimulus of Cowichan (Cw) Halkomelem, where Proto-Salish (PS) *č > ė. But it was a thoroughgoing change, affecting all cases of PST *č, whatever their origin—i.e., whether they were from PS *č or from PS *k. This is shown by forms in which Saanich has ė where Halkomelem (H1) dialects have rather č from PS *k (e.g., leaf (15) and one (16), cited above; cf. Cw sčāieʔ and nēčaʔ). The situation with θ is more complex. It appears that it may have begun under the stimulus of the ė development, but at a time when PST *c was also developing to s in pre-Saanich, since there are the forms where only s is found, and the forms with competing θ and s. On the other hand it must have preceded the merger with reflexes of PS *s and *x, because none of those cases were affected. Note that there are four origins for s in Saanich, as in Northern Straits generally (except Samish). Table 1 summarizes these developments from Proto-Salish for the different languages.
Table 1.

Presumably PSt *c was first fronted to an affricate of the t\(^\theta\) type, subsequently losing the stop component, parallel to *c > s in other dialects—and, probably, in competing fashion within Saanich. \(\emptyset\) is still, in both Halkomelem and Saanich, usually an affricate. (A new plain affricate t\(^\emptyset\) in both languages seems to have developed from a sequence *t\(\emptyset\) parallel to c in Lummi, Songish and Sooke from *ts.)

To summarize, it seems likely that this acquisition of slit spirants by Saanich is a rather recent development reflecting the complex social relations between the Saanich and their neighbors, the Cowichan. The Saanich-speaking community has long been integrated with a number of Cowichan-speaking families in an especially close relationship and there are very few Saanich speakers who do not also know Cowichan, while the converse is not true. Saanich forms with interdentals, then, probably reflect the spread of the interdental changes from neighboring Halkomelem into Saanich. This affected all cases of PSt *c, converting them to San \(\emptyset\). At this time, however, Saanich had perhaps developed a free alternant s in forms containing PSt *c—i.e., there would have been many forms with s and c in free variation. Speakers who were adopting the *c > \(\emptyset\) change, and influenced in parallel fashion by the *c > \(\emptyset\) change which was presumably under way at the same period in neighboring Halkomelem, may reasonably have substituted \(\emptyset\) for c in this alternation
pattern, yielding 6 ~ s. The competition has then been resolved in favor of the 6-forms in some cases, in favor of the s-forms in others. If this history is correct, it would seem to lend support to Wang's (1969) notion of a change spreading gradually through a lexicon and leaving an irregular shift pattern when meeting a competing change.

For those Saanich speakers who use Cowichan extensively there is doubtless reinforcement of the related 6-forms in Cowichan; in similar fashion s-forms in Saanich would probably be reinforced by parallel c-forms in Cowichan. However, there are a number of Saanich words which are in conflict with these apparent Halkomelem influences; e.g.,

(18) San Òaŋ, cf. Cw cām go up away from water; (19) San Ñíʔəı̑ ~ síʔəı̑, cf. Cw cīcae high; on the other hand (21) San sʔásəs, cf. Cw sʔáəes face; (24) San sēčs, cf. Cw cépə uncle, aunt.

1.5. The fundamental language split is further characterized by a less obvious development: the northern dialects simplify original consonant clusters more drastically than Clallam. Many of the clusters observable in all the modern dialects have resulted from the loss of earlier unstressed vowels. Time has not yet permitted a full study of the treatment of original clusters, and more extensive material will be necessary before this is possible. However, a few examples can be cited:

(25) Cl ʔečítáyn(ə)xʷ Lm San Sg ?ečétəłəxʷ So ?ečétə̀xʷ person, Indian
(26) Cl n(ə)čəxʷkʷós Lm čəxʷkʷós San əəxʷkʷós Sg čəxʷkʷós ~ čəxʷkʷós So čəxʷkʷós twenty
(27) Cl ʔəəscənʔ Lm Sg ʔəəsən San ʔəəsən? So ʔəəsən(?) louse
(28) Cl scəqíʔ Lm So səqíʔ(?). San ʔəqíʔ ~ səqíʔ Sg səqíʔ sockeye salmon
A related matter is the tendency for glottal stop to disappear in syllable codas. This is an exceedingly complex matter, which again needs further study. For the moment we may exemplify straightforward cases where ? is lost or optionally lost in codas. Note 27, 28, and the following examples:

(31) Cl sča?múlə n animal's backbone Lm scəmələ backbone
San sčəmáə Sg sčəmáə So sčəmələ fish backbone
(32) Cl sčəʔčiʔáyʔi Lm sčəčiʔéíʔi (no San Sg So forms elicitable) child, youngster
(33) Cl haʔhúʔi Lm həhóʔi So həhóʔi? San Sg həháʔi? alone
(34) Cl So kʷəxʷiʔənə Lm San Sg kʷəxʷəlnəxʷ ashes
(35) Cl sínəʔčúʔí Lm sínəččáši So sínəččáləl
(36) Cl iaʔtúqʷən Lm So iʔtəqʷən Sg iʔtəqʷən boiling
(37) Cl iʔcəʔáčən saw Lm Sg iʔcələčən cross-cut saw San iʔcələčən saw used to cut bottom of tree So iʔcəʔéčən cross-cut saw
(38) Cl pqʷəčən? Lm San Sg So pqʷəčən sand
(39) Cl qʷiʔúʔi? Lm qʷiʔóʔəl(?) San qʷiʔáʔəl(?) Sg qʷiʔáʔəl? So qʷiʔóʔi? camas
(40) Cl sqʷúʔiʔi Sg sqʷúʔiʔi head
(41) Cl saʔčúʔiʔi Lm sočólʔi So sočálʔi non-adult younger sibling

Some Northern Straits speakers tend to drop all coda glottal stops, even in stressed syllables. In most cases the preceding vowel is at least weakly laryngealized, although this is very
difficult to perceive in allegro speech. This sounds similar to the situation in upriver Halkomelem dialects. In our material women informants retained far more glottal stops than men, but there is not always material from both men and women in the same dialect and in any case the number of informants is too small to provide conclusive evidence that this constitutes a difference between men's and women's speech. It may well be that this innovation began in the northeastern part of the dialect complex, near river Halkomelem, and is in the process of spreading.

2. The vowels, of course, show the most complex interrelationships. The regular development of stressed vowels is as shown in Table 2; for examples see earlier cited forms as indicated.

<table>
<thead>
<tr>
<th>PST</th>
<th>Cl</th>
<th>Lm</th>
<th>So</th>
<th>San</th>
<th>Sg</th>
<th>Example Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>*i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>12, 19</td>
</tr>
<tr>
<td>*u</td>
<td>u</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>a</td>
<td>1, 2, 13-15, 18, 20, 31, 33, 35, 36, 39-41</td>
</tr>
<tr>
<td>*a</td>
<td>a</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>3, 4, 6, 9, 11, 22, 24, 25, 32, 37</td>
</tr>
<tr>
<td>*o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>10, 16, 17, 26-28, 34, 38</td>
</tr>
</tbody>
</table>

Table 2. Regular Development of Stressed Vowels.

The reflexes of PST *u are basically rounded in Lummi and Sooke, unrounded before y; but they are basically unrounded in Saanich and Songish, rounded in the neighborhood of rounded consonants. (It should be noted that the vowel written a in Clallam is rather different from those written a in Songish and Saanich: it is generally a frontish central vowel, with frequent front variants following palatals. Between rounded postvelars backer variants appear, sometimes with rounding. Less frequent rounded realizations occur occasionally following rounded front velars, but not preceding.
2.1. Clallam has a minor deviation from this general pattern in having developed a lowered high front vowel (here written é) before ? in stressed syllables. (This é is much higher than and bears no relation to the low front vowels written é in the northern dialects. If it were not for some cases where earlier *? has been lost and other cases where forms have come into the language with í before ?, this would simply be an automatic alternant of Clallam í. A similarly lowered vowel occurs sporadically representing u before ?, but nothing has occurred to phonologize this variant.)

(42) in all dialects ñien eat; Cl ?é?ien NSt ?í?ien

(43) Cl ičé?qʷ Lm Sg So ičí?qʷ San ičí?qʷ cut on the head

2.2. However, there are numerous etymologies where we find different correspondences of stressed vowels. Corresponding to Clallam á the northern dialects sometimes show the low back vowel rather than the low front vowel, and in some stems we find morphophonemic alternation of the two. These sets must also involve Proto-Straits *á, but special conditions have prevented the normal development to a low front vowel.

2.2.1. In some cases comparative evidence and internal reconstruction reveal that a kind of umlaut is involved. Here Proto-Straits *á was rounded before a following rounded vowel, which Clallam displays in a number of forms. In the northern dialects the corresponding vowel often appears in related words, where it has been preserved under stress. In the following examples note the consistent u in Clallam; (46) and (48) are diminutives of (47) and (49) respectively. (50) and (51) are resultive and causative forms from the same root. Here we observe evidence, too, of shifting stress patterns.
(44) Cl náču? Lm So nócę? Sg nácę? San náđę? one
person
(45) Cl sə́ẃyu? Lm sə́ẃole? San Sg sə́ẃále? So sə́ẃóyę?
reef net
(46) Cl spə́páču? Lm (J) So spəpóčę? San spəpáčę?
Sg (M) spəpáčę small basket
cf. (47) Cl spćų? Lm So spćö? San Sg spćā? water-tight
basket
(48) Cl skə́kə́tų? Lm skə́kə́tóę? San Sg skə́kə́tóę? So
skə́(ə)kə́tóę? crow
cf. (49) Cl skə́tų? Lm skə́(ə)tóę? So skə́tóę? San Sg skə́tóę?
raven
(50) Cl ?a-ʔaʔmę́t (Cl has a reduplicative prefix) Lm So
ʔóʔmę́t San Sg ?áʔmę́t seated; San ?əʔáʔmę́t little
child sitting down
cf. (51) Cl ?əmə́ttxʷ Lm So ?ənóttxʷ San Sg ?əmə́ttxʷ seat
him

In other cases we recognize in umlauted forms the unstressed
variants of suffixes which appear elsewhere under stress with
the rounded vowel. Broader comparative evidence can also fur­
nish confirmation. Item (21) is repeated here for convenience:

(21) Cl sʔács Lm sʔósso So sʔós(o)s San Sg sʔásə́s face.
This probably involves the suffix -(e)s face, which
appears in its stressed alternant in (52); cf. also
Pg Sq Nk sʔács.
(52) Cl nə́xʷcs-ús-təŋ Lm So nə́xʷcs-ós-təŋ Sg nə́xʷcs-ás-təŋ
San nə́xʷcs-ás-təŋ get hit in face
(53) Cl -áyə́s Lm -ólı́s San Sg -álı́s So -óyə́s [again the
suffix -(ə)s face] (cf. also Pg -alus) eyes, appear-
ance, color
The details of conditioning for umlaut vary with the dialect. Lummi seems to show the most extensive effects of rounding. In the other northern dialects the umlaut seems to be blocked if more than a single consonant intervenes between the *á and the following *u. In the following examples we recognize the reflexive suffix, which commonly lends a notion become, get to be ...; it appears in stressed form as Cl -cut, Lm So -sót, San Sg -sát.

<table>
<thead>
<tr>
<th>(54)</th>
<th>(55)</th>
<th>(56)</th>
<th>(57)(cf.4)</th>
<th>(58)(cf.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dark</td>
<td>get dark</td>
<td>getting dark</td>
<td>get stormy</td>
<td>get salty</td>
</tr>
<tr>
<td>Cl iáč</td>
<td>iáčct</td>
<td>iáčct</td>
<td>xálcct</td>
<td>liáncct</td>
</tr>
<tr>
<td>Lm iéč</td>
<td>ióčst</td>
<td>ióčst</td>
<td>xóāst</td>
<td>liónsct</td>
</tr>
<tr>
<td>Sg iéč</td>
<td>iéčst</td>
<td>iéčst</td>
<td>xélsct</td>
<td>liénosct</td>
</tr>
<tr>
<td>So iéč</td>
<td>iéčst</td>
<td>iéčst</td>
<td>xélsst</td>
<td>liénosst</td>
</tr>
<tr>
<td>San iéč</td>
<td>iéčst</td>
<td>iéčst</td>
<td>xélsst</td>
<td>liénosst</td>
</tr>
<tr>
<td>PST *iáč</td>
<td>*iáčcut</td>
<td>*iáiačcut</td>
<td>*xálcut</td>
<td>*liáncut</td>
</tr>
</tbody>
</table>

The stem salt(y) also appears in a word with a suffix which should be reconstructed *-aicu water, liquid, which recurs, for example, in Cl ĕčwaic spit, and presumably is related to the element -ič in Sq ĕčwőič spit, ĕčwaic marshy land (cf. Kuipers 1967:326-7):

(59) Cl ĕiáic Lm ĕósis So ĕéis San Sg ĕéisə salt water

The actual aspect infix -?- seems not, however, to create a cluster that blocks umlaut in these dialects. Thus seated (50) shows the expected umlaut, despite the following -?m-cluster, and there is no form to which this could be analogical. (The laryngeals in actual forms are troublesome phonologically. In forms of this shape the northern dialects show variation between ? followed by a resonant, and glottalized or laryngealized
resonants. For this and other reasons glottalized/laryngealized resonants may need to be recognized as separate entities in Straits speech. 2) 2

2.22. There remain a number of etymologies where some or all Northern Straits languages show low back vowels corresponding to Clallam á, and yet there seems to be no clear evidence that umlaut is involved. Rounded velars are present in the environment, and it would be natural to assume that these elements are responsible. The problem is that there are conflicting examples where we find the regular é despite rounded velars in the environment.

One fact seems clear: é does not appear preceding rounded postvelars in any form. On the other hand, there are a number of etymologies in which low back vowels correspond to Clallam á before a rounded postvelar. (Several cases involve resultive forms which we know must have contained *á*. Such forms usually show NSt é, but before rounded postvelars we find rather á or ò. Even where Clallam cognates are lacking these furnish further evidence of the pattern. In some cases the root is well attested in Clallam, and the resultive form probably exists, but simply has not been elicited.)

(60) Cl čáqʷə l M So čóqʷə San Sg čáqʷə afire, burning (61) Cl čáqʷəŋ, čáʔqʷəŋ Lm čóqʷəŋ, čóʔqʷəŋ San čáqʷəŋ, čáʔqʷəŋ sweat, sweating (62) Cl čáxʷəŋ, čáʔxʷəŋ Lm So čóxʷəŋ, čóʔxʷəŋ San Sg čáxʷəŋ, čáʔxʷəŋ melt, melting (63) Cl sáqʷəŋ Lm So sóqʷəŋ Sg sáqʷəŋ San čáqʷəŋ sweet (64) Lm So nóqʷə l San Sg náqʷə l (no Cl cognate) asleep (65) Lm tóqʷə l Sg tákʷə l tight; So ṭəstóqʷə l San stákʷə l tightened (no Cl cognate) (cf. Cl tqʷ-íkʷəŋ pack up, San So tqʷət tighten, Sg tákʷəŋ they are tightening it)
In position following rounded postvelars PST *a is rare. Of the etymologies in the material, three (66-68) show northern é, and one (69) shows é except for a variant with ó in Lummi. Only one (70) shows predominantly the northern low back vowel, and in this case, too, Lummi has a variant with é.

### Dialect

(66) Cl (Elwhə) qʷəʔən (S) NST qʷèʔən ~ qʷèʔən mosquito
(67) Cl s̱xʷəsəm NST s̱xʷəsəm soapberry
(68) Cl qʷáy Lm San Sg qʷé1 So qʷéy talk (and note that actual aspect of the same stem, placing *á between rounded postvelars, yields Lm qʷóqʷé1 So qʷó(?qʷi(?)
San qʷáqʷé1 talking)
(69) Cl ?ənqʷáy Lm nəqʷéy ~ nəqʷoy San Sg So nəqʷéy yellow, pale
(70) San s̱qʷálo?i Sg ?əsqʷálo?i So ?əsqʷéy?əl Lm ?əsqʷálo?i ~ ?əsqʷélo?i It’s cooked (cf. Cl qʷáyən barbecue Lm San qʷálo?n barbecue Sg s̱qʷálo?n barbecue on a stick So qʷéy cooked San qʷé1 barbecued)

Circumstances are likewise rare which place *á between two rounded front velars. Three cases show northern é between rounded front velars, but all have Lummi variants with ó.

(71) San So kʷékwi Sg kʷékwi? Lm kʷékwi ~ kʷókwi (no Cl cognate available) hungry

One further case (74) shows Lummi ó without variation, but é in the other northern dialects. Finally, one etymology
(75) shows a low back vowel in all dialects. (Again exact cognates are not always available in Clallam, but general patterning shows that *a is to be expected.)

(74) Cl ?əsxʷáʔxʷ'kʷ' drunk, ?əsxʷəxʷ'ákʷi crazy; Lm ?əsxʷəxʷ'okʷ'ʔən drunk, ?əsxʷəʔxʷ'kʷ' silly, foolish, ?əsxʷəxʷ'oxʷ'kʷ' simple-minded, silly; Sg ?əsxʷ'əxʷ'?xʷ'okʷ' crazy, silly, ?əsxʷəxʷ'əxʷ'?kʷ'ʔən drunk; San sx'əxʷ'əkʷ'ʔən he's drunk, sx'əʔxʷ'okʷ' misbehaving (xʷ'əketən gone crazy); So ?əsxʷ'əxʷ'əʔ(?)kʷ'ʔən drunk, ?əsxʷ'əʔxʷ'kʷ' crazy.

(75) Lm ?əsxʷ'əkʷ'ʔəi San sx'əækʷ'ʔəi Sg ?əsxʷ'əkʷ'ʔəi So ?əsxʷ'əkʷ' (all) pulled (up already) (cf. Cl xʷ'kʷ'ət drag NSt xʷ'kʷ'ət pull)

Forms in Northern Straits with e either following or preceding a rounded front velar or w are quite common. We may cite a few examples here.

(76) Cl k'w'əčən NSt k'w'čən yell
(77) Cl sk'w'əqən Lm Sg So sk'w'eqən flower
(78) Cl čəkʷ'ʔət Lm So čəkʷ'ʔət San čəkʷ'ət Sg čəkʷ'ət wash
(79) Cl kw'ətən? rat Lm kw'ətən rat, mouse Sg So kw'ətən rat San kw'ətən mouse
(80) Cl ɬək'w'xən Lm So ɬək'w'xən San Sg ɬək'w'(ə)xən (tame) goose
(81) Cl ɬəx'w'as Lm So Sg ɬəx'w'as earth oven cooking San ɬəx'w'as oven of rocks, etc. (to cook clams in)
(82) Cl xʷ'əč Lm Sg So xʷ'əč San xʷ'əčən (with suffix -ən leg, foot, which is common in expressions pertaining to the weather) stop raining
(83) Cl cáx'w'cx' Lm San Sg séx'w'səx' So séx'w'sx' lazy by nature, Cl cá?x'w'ən NSt sé?x'w'ən being lazy (temporarily)
(84) Cl wá? Lm wé? accompany; San wáʔθon sing along
with someone, Sg wáʔson help, accompany a singer,
So wóʔθen id. (low back vowel from umlaut; suffix *-ucin
mouth)

(85) Cl ?awkʷ NSN ?éwkw̓ belongings

(86) Cl ǰáʔwi? Lm San Sg ǰéʔwi? So ǰéʔwi(?) dish

The northern low back vowels in some forms of (84) are the result
of umlaut. Note also that labials (87-89) seem to have no special
rounding influence.

(87) Cl mákʷə? graveyard, smökʷəyə? grave; Lm xʷməɬəkʷéʔlə
graves, graveyard; Sg mékʷə? (M) hold funeral potlatch;
So mékʷə? grave; San mékʷə? ~ mékʷə?, šmékʷéʔlə grave-
(yard) (čmékʷə? ~ čmékʷə? grave-digger); So (s)mékʷə? ~
šmékʷə?ya; Sg smékʷə?, šmékʷéʔlə grave, graveyard

(88) Cl spáʔxʷən NSN spéʔxʷən (light) fog

(89) Cl páʔəkw̓ Lm San péʔəkw̓ ~ pέʔəkw̓ Sg So pέʔəkw̓ pipe
(for smoking)

There are two etymologies in which all northern dialects
have a low back vowel corresponding to Cl á following a front
velar.

(90) Cl kʷán(ə) t Lm kʷóni San Sg kʷánət So kʷónət
porpoise

(91) Cl kʷánənət Lm So kʷónənət San Sg kʷánənət run

In the first case borrowing is surely involved, presumably from
Halkomelem: Cw kʷánən (E) (cf. Sq kʷúnut). The second case,
however, is troublesome. It seems reasonable to suppose
that umlaut is involved, but the conditioning *u must have
been in the third syllable, because actual aspect forms
suggest the second vowel goes back to *i: Cl kʷaʔnéʔənət
Lm kʷəní(?)nət San So kʷənínət running. The possibility
comes to mind that preceding *u may have acted together with following *u to foster retention of the back vowel in the northwestern dialects. Unfortunately there is no evidence to confirm reconstruction of the *u.

In addition, there are some cases where Proto-Straits *á is reflected by a low back vowel adjacent to a rounded front velar in one or more of the dialects. In the absence of Clallam cognates the configuration of related words in northern dialects nevertheless assures development from original *á.

(92) Cl kʷáʔii ( *kʷáʔyəi) Lm ?eskʷyʔəi San skʷáʔəi
Sg ?eskʷáʔəi So ?eskʷyʔəi overturned, spilled
(93) Lm ?esxʷyʔəi ~ ?esxʷyʔəi San sxʷáy(?)əi Sg
?esxʷáyəi So ?esxʷyʔəi awake
(94) Lm ?eskʷəsi San skʷási Sg ?eskʷási So
?eskʷəsi counted
(95) Lm pékʷət smoke fish So ?espókʷəi smoked
(cf. Cl San Sg pəkʷən smoking So pəkʷən? id. Lm
pəkʷən smoke, dust is spreading)
(96) Cl pákʷən Lm pəkʷən So pékʷən float; Cl
paʔpáʔkʷən? Lm pəʔkʷən San pəʔpəkʷən Sg pəpəʔkʷən
So pəpəkʷən? floating; Cl pákʷət Lm pékʷət make float,
bring to surface; Lm pęʔkʷəl come to surface and start
to float; San spákʷəl afloat

2.23. Out of these conflicting data some pattern does
emerge, however. It seems likely that by a time we may
designate Proto-Northern-Straits, *á must have been rounded
in environments containing rounded elements—that is, (a)
wherever the immediately preceding element was a rounded
(post)velar (including w), (b) wherever any of these rounded
consonants followed directly or was separated from *a only
by glottal stop, or (c) wherever the vowel of the following
syllable was rounded. (We cannot, of course, be certain of the phonetic qualities involved, but such a rounding of *a seems to explain the modern facts most naturally and reasonably.) It was, then, only the remaining—unrounded—reflexes of Proto-Straits *a that were fronted, at a somewhat later time, to e. In the Northern Straits dialect continuum as a whole these low back rounded vowels retained their back quality before rounded postvelars, but a split developed between east and west in their subsequent treatment in other positions.

In the east, Lummi retained low back rounded vowels also (at least optionally) when they were followed in the next syllable by a rounded vowel (cf. 44-46, 48, 50, 52, 53, 55-59) or when they were bracketed by rounded consonants (cf. 71-75). In other circumstances these vowels tended to unround, then participating in the fronting shift. These changes probably proceeded via variation in individual forms, some of which is still observable (e.g. 69, 70, 93). (Possibly a similar variation may have begun to affect vowels between rounded front velars as well, but the observable cases are also likely candidates for analogical spread of e from related non-reduplicative forms; cf. 71-73.)

In the west the condition for retention of the low back vowels into modern times (aside from the effects of a following rounded postvelar) seems to be a quite different—and rather mysterious—one: except for cases of umlaut (44-46, 48, 50, 52, 53) these retentions precede the morpheme -(ə)i durative (cf. 92-96). This morpheme, however, does not have any umlauting effect in stems not involving rounded consonants; e.g.

(97) Cl ?əstəsi Lm So ?əstəsi San stései Sg ?əstései near, having approached
Earlier, in the analysis of Socke (Efrat 1969:91) this morpheme was assigned the underlying form -6i on the basis of an apparent stressed occurrence in k'øn?6i (can see; it now appears doubtful that this analysis is appropriate—this form probably contains a different (unrelated) suffix -6i, or possibly a stem k'øn?6-. The lack of consistent umlaut before this suffix casts further doubt on the likelihood of its having an underlying rounded vowel. (Note that in Lummi, where umlaut seems far more extensive than in the other northern dialects, this suffix is clearly not an umlauting suffix; cf. 94, 95.) What seems more likely is that there developed an association of low back vowel with the durative suffix in stems containing a rounded consonant. This presumably came about because the duratives are a relatively small class of forms, and it happens that a number of them involve rounded postvelars in the position of C2 (e.g. 60, 64, 65)—where they would regularly call for a preceding low back vowel to represent original *a in any case. At a time when variation presumably developed between low front and back vowels in these forms, this pattern could well have exerted an influence for favoring the back variant.

Still another force seems clearly active in the west: in many forms where the back vowel would be expected, we find é instead. In many cases analogical creation may be suspected: they involve frequently associated forms in which there is no reason for retention of a back vowel. This is precisely the state of affairs with those cases where umlaut appears to have been blocked by excessive intervening material (e.g. 55-59), and it may well be that analogy rather than original blocking is responsible. In
this connection we should note that there are some northwestern forms relating to (3) salt(y) and (58) get salty which do show umlaut: San ṣ̌áłạ́ṇəs lightly salted, So əə̣ṭə̣ṇə̣s put salt on fish before hanging it up (both involving *-us face, outside surface).

In any case, the tendency toward replacement of the back vowels by é is strong in the west except in resultive forms. On the other hand all these changes except the analogical ones must have preceded the coalescence of the low back vowels from original *á with those from original *ú: there are no instances in which á or ó from original *ú have been fronted.

3. We have outlined the main course of developments of consonants and stressed vowels in the Straits dialects; some residual problems are beyond the scope of this paper. Obvious are implications for the reconstruction of unstressed vowels in Proto-Straits, and the study of these leads necessarily to exploration of patterns of shifting stress. We hope to treat these matters in detail in a future paper.

It seems worthwhile pointing out at this juncture that the understanding of the intricacies of developments in Straits Salish phonology have interest beyond the concerns of the Straits group itself. Neighboring Halkomelem has a very similar pattern of u-umlaut with a parallel fronting of earlier *á and lowering of earlier *ú; it also retains low back reflexes of *á in certain rounded environments.

The relative timing of vocalic changes would seem to be the same in Halkomelem as in Straits: first *á was rounded in rounded environments. This nondistinctive change probably antedates both Proto-Straits and Proto-Halkomelem. At a later time, in Northern Straits and Halkomelem, all unrounded reflexes of *á were fronted, dividing original *á into front and back (rounded) allophones. This stage must be later
than Proto-Straits because in modern Clallam á (which regularly represents PST *á) has front allophones only following palatals. In Halkomelem, however, all dialects were affected, so the timing is unclear, except that it must have followed the development of rounded allophones. Probably in both Halkomelem and Northern Straits there immediately ensued a tendency to unround cases of these low back vowels in particular environments—presumably everywhere adjacent to rounded front velars except between them, and, very likely at a later time, after rounded postvelars. (This tendency apparently never reached the position directly before rounded postvelars.) Those unrounded vowels then participated in the continuing fronting shift. Finally, reflexes of original *ú merged with the still rounded remainder of the low back vowels from original *á. It is not, of course, possible to say when the lowering of *ú began, and quite possibly a lowered back rounded vowel remained distinct for some time from the rounded reflexes of original *á, but it seems quite clear that this merger occurred after the fronting shift had claimed not only the reflexes of *á which had never been rounded, but also those that were probably rounded and subsequently unrounded. Now, following this merger, Halkomelem, and Saanich and Songish show a continued tendency to unround low back vowels—both those from original *á and those from *ú—but none of these seem to have merged with ê. In Cowichan Halkomelem and in Saanich and Songish of the Straits complex the fronted low vowels (ê) have generally been raised considerably, to a norm of mid front position, with some even higher variants. In the same dialects the other low vowels (á) have been strongly centralized. The whole effect is that of a familiar clockwise vowel shift.

The great similarities of development and the geographic position of the dialects suggest the spread of innovations from a common center during the same general period. In fact, the
continuing fronting and raising of original *a and the accompanying lowering and unrounding of original *u in a central bloc of dialects belonging to the two language complexes (Saanich and Songish of the Straits group and Cowichan of the Halkomelem continuum) make it appear that those innovations began in those dialects, the original fronting of *a and lowering of *u having spread to adjacent dialects (Sooke and Lummi in Straits, mainland Halkomelem), but not yet the extreme raising of the front vowels or the general unrounding of the back vowels (further shifts in the central, innovating dialects). Pertinent phonetic details on the Nanaimo dialect of Halkomelem, north of Cowichan on Vancouver Island, are not available, but we might expect that it was not part of the central innovating bloc.

As mentioned earlier, it also appears that the fronting of *a was beginning to affect neighboring Nooksack, where many forms show vacillation between front and central or back allophones; the lowering of *u, however, puts in no appearance there. This is in keeping with the relative timing of the two shifts in Halkomelem and Northern Straits. But obviously neither of these waves have reached either Squamish to the north or Puget Sound Salish to the south; nor, of course, have they reached Clallam.

Considered against this background some individual cases are interesting. The Straits forms for porpoise (90) can only be explained as loans, and Halkomelem seems the only possible source. But the borrowing must have occurred fairly recently, because the Squamish form clearly indicates an earlier *kw'únut. Lowering of the stressed vowel is regular in Halkomelem, and the long vowel in Cw kwaant probably reflects a regular development, also (retention of open-syllable length in a syllable newly closed by loss of an unstressed vowel). It might at first seem that this was borrowed from a somewhat earlier stage of Halkomelem into Proto-Straits as something like *kwaanut, where
it developed regularly with umlaut. But that would suggest that
the lowering of *ú occurred much earlier in Halkomelem than in
Straits. If so, the fronting of *á would have had to be still
earlier, and we would be forced to recognize the Northern Straits
clockwise vowel shifts as independent or at least much delayed.
Such an explanation would also suggest a greater time depth
for Halkomelem than for Straits. These notions seem clearly
wrong. Porpoise must have diffused at a later time, probably
in a form something like *kwāné', passing through Northern
Straits dialects to Clallam; in all cases the modern forms can
be as well explained in these terms as with a reconstructed
PSt *kwāné'.

The Straits words for soapberry (68) also present some
interesting problems. The related words in the Interior languages
regularly point to original *ú in the stressed syllable (e.g.
Thompson, Columbian, Spokan, Coeur d'Alene sx'úsəm, related to
a root sx'ús- to foam). And Sq sx'úsəm, Chilliwack (H1)
sx'wəwsəm, and Skagit (Northern Puget Sound Salish) as spoken
in the Nooksack community sx'úəsəb, agree. But to the west
and south the words seem to reflect rather an earlier *á:
Musqueam and Cowichan Halkomelem sx'wəsəm, Straits forms
as cited in (67), Puget Sound Salish dialects further south
sx'wəsəb, Twana sx'wəsəm (according to Boas' comparative vocabulary);
in Upper and Lower Chehalis sx'ás blackberry is perhaps kin.
(For Nooksack both sx'úəsəm and sx'wəsəm have been recorded, but
not too much should be made of this apparent variation; all the
people who remember some Nooksack also speak other languages of
the area and are apt to be influenced by them; they are frank
about their frequent uncertainty over the correct form of a
Nooksack word.) Unfortunately we have no forms in more
northerly languages on the coast or in Tillamook that would
clarify the extent of the á- and ú-forms.

The Squamish, Nooksack, and upriver Halkomelem forms
with high back vocalics could easily reflect Interior influence;
the Nooksack community Skagit form with ú seems clearly a borrowing from an adjacent dialect. Two different ablaut grades of an original root may be involved (Kuipers 1970:52-3 suggests some other cases of *u/a ablaut). Whatever the origin of the two different vocalisms, the similarity of the words and their meaning (except for the Olympic forms, which are perhaps not related) in the various languages of the two blocs is striking--a pattern suggestive of diffusion. Too much should not be made of the similarity of form, however, because PS *xʷ, *ú, *á, and *s all exhibit a great deal of stability. On the other hand, borrowing seems likely in Straits, where we find m in the suffix rather than expected n (cf. Suttles 1965). And nowhere on the Coast does there seem to be any association of the name for the fruit with a root meaning foam--or, in fact, with any extensively occurring root. [Kuipers (1969:86) cites šxʷúsəm soapberry, xʷúsəm prepare soapberries, and refers to the root xʷas, xʷəs, as in xʷəstn fat, hardened grease and šxʷəs oil, liquid grease. The semantic connection between these two sets of words does not seem compelling.]

The Northern Straits words (šxʷesəm) can easily have been borrowed from Halkomelem, but for Clallam we would expect a source with á rather than é. Puget Sound could have been the donor, but presumably before *m was replaced by b. (Actually, the same is true for Twana, where the modern form probably has -b; the form cited by Boas suggests this shift may have been quite recent, as do various other pieces of evidence. For the development of nasals to voiced stops in Puget Sound Salish and Twana, and further references on the topic, see Thompson and Thompson 1969.)

One might be tempted to suggest that the á-forms arose as a result of the regular lowering of PS *ú in Halkomelem, spreading then to Straits, Puget Sound, and Twana (and possibly on to Olympic languages), the á > é shift then catching
the form later in Halkomelem and Northern Straits. (The upriver Halkomelem form with əw likely reflects Thompson influence in any case.) But, as we have seen, this would conflict with the facts of historical phonology in Halkomelem: it would require *ú á to precede *á é.

At the moment this is about as far as we can go with this etymology: at present the most reasonable guess is that the Straits forms go back to PST *sxʷəsəm, which was probably a loan from a neighboring language at roughly that period. More information of various kinds will hopefully make more precision possible, and we may eventually learn some interesting things about the diffusion of institutions like the use of the soapberry confection.

These observations will perhaps point up the profitability of similar intimate phonological studies of Halkomelem and other dialect complexes. As more details are worked out on local developments in neighboring languages it should be possible to recognize more patterns of diffusion, which should be studied along with ethnographic evidence. All this is of course essential to establishing the linguistic history of the area.
4. References cited.


FOOTNOTES

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The material on Clallam and Lummi was collected by the Thompsons at various times since 1958. The material on Sooke, Saanich, and Songish was collected by Efrat, beginning in 1963; she has also obtained a number of Lummi forms for this paper in the recent period. Both Efrat and the Thompsons have collected material on Nooksack. We are also indebted to a number of other field researchers who have collected material on Straits dialects: where we have cited forms available only from these other sources we indicate this by a parenthesized initial, as indicated below. Duane Mylerberg (M) and Elaine Phelps have made available notes on Lummi. Elizabeth Bowman and William R. Seaburg have been good enough to check a number of Lummi forms for us during their own field work. The late Melville Jacobs (J) graciously made available his field notes on Lummi and Saanich. We are especially grateful to Wayne Suttles (S) for a number of discussions on the Straits picture generally, as well as for furnishing information on Samish and for providing a copy of his field notes on Clallam.
Some forms in Songish are cited from Mitchell (1968)(N). Halkomelem forms are primarily from Elmendorf and Suttles 1960; a few have been elicited in Cowichan by Efrat (E). Squamish forms are from Kuipers 1967, 1969. Puget Sound forms were kindly made available by Thomas M. Hess or are from the Thompsons' field notes. Many words have been checked against Boas' comparative Salish vocabulary (ms. in the American Philosophical Society Library). Forms from other languages not yet mentioned and references to broader Salishan comparisons reflect a collaboration of the Thompsons with M. Dale Kinkade during the academic year 1971-72; sources represented in this paper are field notes as follows: Upper and Lower Chehalis, Columbian (Kinkade); Thompson (Ntlak'apmux) (the Thompsons); Spokane (Barry F. Carlson); Coeur d'Alene (Clarence Sloat). In all cases orthography has been adapted to that used here.

All Straits dialects have the following consonantal phonemes: voiceless (often aspirated) stops/affricates p t č q kʷ qʷ, glottalized stops/affricates p̆ t̆ č̆ q̆ k̆ q̆ w, spirants s i ś x xʷ x̆ h, resonants m n y n w. (The voiceless velar stop k appears in loan words from outside Straits.) Clallam and Sooke have the lateral resonant l only in borrowed forms, but it is common in the other dialects. All dialects except Saanich have apicoalveolar affricates c č: č is common everywhere; the unglottalized counterpart c is common in Clallam and Samish, but has a severely limited distribution elsewhere. Saanich alone has interdental affricates and spirants: tΘ occurs in a few forms, but the glottalized counterpart t̆, often simply a glottalized spirant, is widespread, as is the spirant θ. Vowels are discussed in detail in the body of the paper; we should add here that long vowels are represented by doubling the vowel letter (e.g. aa). Each full word has one primary stress, represented by an acute
accent over the vowel of that syllable (e.g. á); some longer words also have secondary stress, represented by a grave accent (e.g. à). Other syllables are weak-stressed.

Examples are presented as etymological sets of available cognates in the various dialects numbered consecutively for convenient reference. Where only one gloss appears at the end it applies to all the forms cited. Where one or more forms have a different translation, it is noted directly after the form in question. (Some of these differences may later emerge as superficial idiosyncracies of translation.)

A preliminary discussion of Lummi umlaut is presented in Thompson (1972). For treatment of Straits Salish structure, see Efrat (1969), Pidgeon (1970), Raffo (1972), and Thompson and Thompson (1971). Coverage of the culture is afforded by Barnett (1955) and particularly by Sutlles (1951); see these also for earlier references.

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Esquimalt Reserve, Esquimalt, B.C. Saanich: Mrs. Edna Henry, Tsartlip Reserve, Brentwood, B.C.; Mr. Christopher Paul, Tsartlip Reserve, Brentwood, B.C.; Mr. Philip Pelkey, East Saanich Reserve, B.C.

Some aspects of this problem are explored in Efrat (in press).