

Saanich dialect and the Samish dialect fluently at winter ceremonies and spirit dances. I was free to work with him until Sept. 1984 if funding could be found for the field work. I quickly applied for an urgent ethnography contract with the Canadian Ethnology Service at the National Museum of Man in Ottawa, to tape record and analyze whatever Samish material I could obtain in 25 days, six-hour sessions each day. The contract was approved and the Samish tribe also found some funds to help out. I would like to express my deep gratitude to both the Canadian Ethnology Service and the Samish Tribe for their timely support of this project.

I began work with Victor Underwood Sr. of the Teawout Reserve, East Saanich, Vancouver Island, British Columbia. Born on Orcas Island in Washington, he had learned Samish from his grandfather, David Tom, and Saanich from his grandmother, Cecilia (Sam) Tom; Victor's mother died shortly after he was born (about 1914), and his grandparents raised him on Orcas and Guemes Islands. In about 1928 Victor left Orcas Island and stayed in Anacortes. When he was about 16 he came to East Saanich where he lives on land inherited from his grandmother. He never spoke English till he left Orcas Island. In 1935 he married Ethel, a fluent speaker of the Cowichan dialect of Halkomelem (and of English). Victor has learned some Cowichan and some Lummi as well as being a fluent speaker of English; Ethel understands Saanich and Samish also.

We began on July 11, 1984 by re-eliciting the only traditional story that Victor remembers completely in Samish, the story of q'w'álsáswat, the maiden of Deception Pass. I then began elicited Samish words cognate with words I had in the other Straits dialects in publications and manuscripts. As we worked Victor was sometimes unsure whether a particular form he remembered was in the Samish dialect or in the Saanich dialect. After Victor had given me a few such terms he suggested that he should check them out with his "aunt" (his grandfather's sister's child), Mrs. Lena Daniels, on the Malahat Reserve, also on Vancouver Island. He said she is also fluent in Samish, in fact has never spoken anything else. At this pleasant surprise I encouraged him to try to contact her if he could. We continued work the rest of the week, marking any forms Victor was unsure of.

On July 16th Victor had found out where to reach his aunt, and he phoned her to ask if the three of us could meet and work together. With Victor's permission I recorded his end of the phone conversation, which was all in Samish. Mrs. Daniels was interested and on July 24th took a ferry to the Saanich peninsula, Victor drove her to his house, and we spent a very productive day checking and eliciting forms. Thereafter she joined us for almost all the remaining sessions. We met most weekdays through August

24, 1984, then were not able to resume our sessions till June 10, 1985. We finished the funded work June 19, 1985, toward the end getting seven stories told in Samish by Mrs. Daniels.

In our joint sessions I would give an English word, phrase or sentence, Victor would give a definition in Samish to Lena, they would discuss it in Samish, then Lena would give the Samish form several times, followed by Victor. In many cases Victor knew the word and gave it first, but we always recorded Lena's pronunciation as well. One ground rule was that to avoid influence from other dialects I would only prompt with a form from another dialect after Victor (and Lena) had taken all the time they wanted to try to remember the Samish form. They were quite conscientious. In turn, I tried to pick up as much conversational Samish as I could, to use in eliciting.

Lena Daniels understands some English (if spoken slowly) but can speak very little. She understands the Cowichan dialect of Halkomelem quite well and speaks a little more of it than English but is not fluent. We had two sessions with Ethel Underwood explaining what I was asking in Cowichan and Lena replying in Samish. This in fact is how the two of them usually communicate. Lena was born on the Malahat Reserve (where Cowichan is the Indian language normally spoken). She is about the same age as Victor, perhaps a year or two older. She was born Madeline Harry, daughter of Cecilia Tom (1866-1949) and Harry Steel (1858-1949). Cecilia was a sister of Victor's grandfather David Tom (1850/56-1940) and spoke fluent Samish. Harry Steel (also known as Steel Harry) was Cowichan and spoke Cowichan.

Intrigued by finding this degree of fluency in transplanted families when the language had died out in the United States, I asked, through Victor, how Lena had kept up her Samish and whom she had talked with. Lena's mother had spoken only Samish to her children; they all became fluent speakers of Samish with her (till her death about 1949) and with each other. Lena spoke only Samish to her children, several of whom can still speak Samish (though their children speak only English). Lena's sister, Emma taught all of her children Samish; one is still alive at Malahat in his late 50's and still fluent. One of Emma's daughters had a son who can speak Samish. Others of Cecilia and Harry Steel's grandchildren learned Samish but only speak Cowichan now. So within this extended family, Samish has been moved to Vancouver Island and has precariously survived. What is unclear is how fluent the younger generation of speakers is (there are three who are said to speak Samish and two more who may also speak it or may just understand it). Victor's children can understand some Samish but do not speak it.

One further attestation of Samish has come to light. Mrs. Violet

Hilbert, táq'šablú, a speaker, teacher and researcher of the Lushootseed language at the University of Washington in Seattle, has been transcribing some Lushootseed tapes made in the early 1950's by Leon Metcalf. They are now in the University of Washington archives. One tape (#20) is an interview in October 1952 with Tommy Bob speaking in Samish. Mrs. Hilbert kindly made the tape available to me in 1985 to copy, transcribe, and play for Victor and Lena. It includes most of the Swadesh 200-word list (Tommy Bob gives 149 words). Then Tommy Bob gives a medium sized text of about 50 or so lines in a formal speech style. This material really rounds out the samples of Samish speech (citation, conversation, stories, speeches). It also gives attestation to an older generation of Samish as Tommy Bob died in the 1950's. He lived at LaConner, Wash. on the Swinomish Reserve, as did a number of Samish. His mother and Victor's grandmother were sisters.

One other helpful step in the present fieldwork was a trip to Orcas Island, Washington organized by Ken Hansen. Joining us there were Victor and Ethel Underwood, Mrs. Lena Daniels, Mrs. Laura Edwards (speaker of the Skagit dialect of Lushootseed), Wayne Suttles, anthropologist Sally Snyder, and tribal secretary Mrs. Mary Hansen. The first day we worked on Samish with Wayne Suttles confirming that it sounded like the true Samish he had heard years ago in his work. We also did mutual intelligibility tests and comparative elicitation with Samish, Saanich, Skagit, and several dialects of Halkomelem, as well as some ethnographic elicitation. The second day we chartered a boat to round parts of Orcas Island to elicit place names, ethnographic information, and marine terms in Samish.

My goal has been to gather enough material for a preliminary analysis of the phonology and some morphology with as full a citation of data as possible, including an index or word list and some sentence examples. To benefit from previous linguistic work on other Straits dialects I elicited forms cognate with forms in previous works, for example: Suttles 1951, Thompson, Thompson and Efrat 1974, Demers 1974, Raffo 1972, Charles, Demers and Bowman 1978, Efrat 1969, Galloway 1977, Demers p.c. 1982, Galloway 1982, Bouchard 1974, Galloway 1980, U.S. Census 1980, Kennedy 1974 ms., Thompson and Thompson 1971, and Montler 1984. Other work which was helpful was Mitchell 1968, Pidgeon 1970, Thompson 1972, Demers 1980a and 1980b, and Jelinek and Demers 1983.

It may be of interest here to mention Victor Underwood's impression that the Samish dialect is most similar to the Lummi dialect, then next most similar to the Saanich dialect. This seems likely for geographic reasons and may well be confirmed by the present data, but there has not yet been time to study this fully.

One final word here. The Samish and Saanich people I have met have all been friendly and very supportive of this work. It has been a pleasure to work with them. I look forward to more work with them in the future.

1. PHONEMICS

1.0. SAMISH PHONEMES

	Bilab.	Inter- Dental	Apico- Alveolar	Pal. Alveolar	Velar plain	Postvelar lab. plain	Lab. plain	Glottal
Obstruents			sl. lat. gr.					
plain	p		t (c)	č (k)	kʷ	q	qʷ	ʔ
glottalized	p̚	ɸ	t̚ (c̚)	č̚ (k̚)	kʷ̚	q̚	qʷ̚	
Spirants			s	ɬ	xʷ	ɣ	ɣʷ	h
Resonants								
plain	m		n	l	y	w	ŋ	
glottalized	m̚		n̚	l̚	y̚	w̚	ŋ̚	
Vowels								
high				i		(u)		
mid				e	e			
low					a			
Suprasegmentals								
stress								
length								

(sl. = slit, gr. = groove, lat. = lateral, lab. = labialized, pal. = palatal)

Comments on the chart:

1. /c/ is very rare, occurring only in the deictic morpheme (ce). However, this morpheme is fairly common and is also combines with some suffixes to form deictic pronouns, etc. Historically it is a mere combination of t + s (each of whose functions can be demonstrated).
2. /k/ is found only in loan words from European languages (English, French) and Chinook Jargon.
3. [č] is quite common in VU's pronunciation but corresponds to /ɸ/ in the speech of LD and TB. While LD's speech could have conceivably been influenced by the Cowichan Halkomelem /ɸ/, it seems unlikely that TB's speech was (he did not live in a Cowichan speaking area). TB had some Saanich ancestors but did not live in a Saanich speaking area, so it seems unlikely that he was using /ɸ/ from Saanich influence. On the other hand, VU grew up on Orcas Island, a Lummi speaking area, and emphasizes the similarity of Lummi to Samish. Thus VU's /č/ could be influence from Lummi (which has /č/, not /ɸ/). It could also be influence from Saanich which VU grew up speaking since Saanich /ɸ/ is more often pronounced [č̥] than [ɸ] (see Montler 1984:8-9 and see below). Since the two older speakers have /ɸ/, it seems more likely that Samish in their day had /ɸ/ rather than /č/. None of the speakers of Samish use both, and none of the other dialects of Straits tolerate both /č/ and /ɸ/, so Samish was very unlikely to have both.
4. /w/ is found mainly in loan words from Indian and European languages

as well as from Chinook Jargon. There may be a few cases also where /w/ has become vocalized recently to /u/ or where the combination /w/ sounds very close to [u] in closed syllables (though [w] is more frequent).
5. /m/ and /n/ are evidently not restricted to loans.

1.1. DESCRIPTION OF PHONETICS AND ALLOPHONES

1.1.1. Obstruents

Stops are unaspirated in the following positions: S_V, _R(\$,C), _\$R where S = spirant, V = vowel, R = resonant, (\$,C) = pause or consonant (resonants in these positions are syllabic).

Thus (all citations by VU and LD unless preceded by speaker's initials):

- [kʷʔstəlɪʔq̚] 'mushroom'
[skʷɪq̚] ~ [skʷɪq̚], TB [skʷɪq̚] 'flower'
[sʔásasʔstənʔsséles] 'palm of your hand'
[sqəmaʔ] 'breast, nipple, milk'
VU [stɪʔskʷɪ], LD [stɪʔskʷɪ], TB [stɪʔskʷɪ] 'back (anatomy)'
[spečínas] 'chest-bone (of bird for ex.)'
[sqʷáʔtɪ] 'bucket'
[qʷláʔyasčənʔ] 'phonograph, record player'
VU [stɪq̚] 'to walk'
[šqənʔwéle] 'inside throat, gullet'
[šqʷənɪʔləq̚ən] 'hair in the nose'
[stələháles] 'eyeglasses'
VU [lənənɪte] 'he sees us (lit. we are seen)'
VU, TB [sʔáiqəʔ] 'snake'
VU [səitəʔlɪxʷ] - (faster) [sɪtɪʔlɪxʷ], LD [sɪtɪʔlɪxʷ] 'whole body'
LD, TB [ləq̚ɪ] 'clothes, dress'
[šxʷɪləxən] 'side of the body (human or animal)'
VU [xʷqəyexqənʔ], LD (correcting) [q̚əyexq̚ənʔ] 'tell(ing) a made-up story', TB [q̚əyexq̚] 'to lie'
VU [čəxtenʔ], LD [šəxtenʔ] 'poison' (t - č)
VU [čəxtenʔɪč], LD [šəxtenʔnɪč] 'to poison s-o' (t - č)
TB [p̚kʷstɪ] 'flow'
TB [ʔánəstɪ] 'given'
TB [ʔáitɪ] 'here' (t clear and unaspirated)
(Note: glottalized resonants are almost always realized as resonant plus an adjacent unaspirated glottal stop. See below under resonants.)

/ʔ/ is optionally aspirated only V_(V,\$); it is unreleased _C and often C_# (where C = consonant).

Thus besides examples elsewhere:

VU [spčáʔ] 'watertight basket' (ʔ - ʔ)
 VU [seesíʔleʔ] 'grandmother'
 VU [léʔe] 'there' (ʔ - ʔ)

Elsewhere stops are aspirated (LD's final stops often weakly aspirated).

Besides some of the examples above, the following show such aspiration:

[čéčən], TS [čéčən] 'back of neck, back of head'
 [dželenʔ], TS [dželen] 'eye'
 TS [páxwət] 'blow (like of the wind)'
 TS [čákuxw], VU [čákuxw] 'nine'
 VU [lakéli] 'key' (loan from Chinook Jargon < French le clef)
 VU [x-lakélič] 'to lock something'
 VU [pčwéčən], TS [pčwéčən] 'sand'
 VU [edpídʷes], LD [edpídʷes] 'white hanging lichen (grows on alder)'
 VU [qčéliʔčw], LD [šqčéliʔčw] (čw has weak aspiration) 'top of head, crown of head'
 VU [liséčt] 'put it in the sack'
 VU [spápéčt], LD [spápéčt] 'lump (on tree, ground, person)'
 TS, VU, LD [nədəp] 'nose'
 TS [ené·nč], VU, LD [enénet] - [ené·nč] 'rock, mountain'
 [čsás] 'poor'
 VU [čr:ldž·ánéč] 'Tuesday'

Geminate obstruents are rearticulated.

Thus, VU [ʔemátčxw] 'seat somebody'
 LD [ʔíčt] 'to sleep'
 LD [x-i ʔíčtč] 'still sleeping now'
 LD [ení·čč] 'lagoon', VU [šnǝʔčč] 'any bay'

This contrasts with geminate spirants and resonants which are subject to a morphophonemic rule converting the second member to length (/·/).

For example, VU //tsás·sen// /tsás·en/ [čsás·en] 'I'm poor',
 //s-ʔáses·s t-en séles// /sʔáses· tən séles/ 'palm of your hand',
 //pén·nexw·en// /pén·exw·en/ [pén·uxw·en] 'Matia Island'.

Glottalized obstruents are fairly fortis in pronunciation. Aspiration, especially in consonant clusters, is fairly strong also. From this point on aspiration of stops will not be reproduced in phonetic quotations.

Although Samish has /ə/, /ɨ/, and in loans, /x/, it lacks plain counterparts of the first two and a glottalized counterpart of the last. /ə/ is actually a glottalized interdental affricate (thus it is listed among the obstruents rather than among the spirants). As discussed in the comments

on the table above, /ə/ is pronounced roughly as [č] by VU but as the interdental affricate by LD and TS. Montler 1984:8-9 mentions a similar but dental pronunciation is the norm for Saanich. In a number of places my transcription actually shows VU using a dental [č]. The environment for this fronting does not seem predictable. VU's Saanich forms show the dental norm for both /ə/ and /ɨ/ as Montler reports for his speakers; (interdental pronunciations are found but are rare in Saanich). In Samish LD and TS have interdental /ə/ only. VU also has interdental /ə/ but rarely.

No significant allophony has been noted for the obstruents not mentioned so far. Examples of minimal and subminimal contrasts of all phonemes will be given in section 1.2.

1.1.2. Spirants

All three speakers of Samish use an occasional [θ]. These are lapses as is shown by the facts that they are almost always corrected to [s], that they sometimes occur for a few citations after EU has been speaking Cowichan or VU has been speaking Saanich (both of which have /θ/), and that if not corrected immediately, the forms are attested everywhere else by the same speaker with [s].

In a number of forms VU has a dental [g] where Saanich and Cowichan have /θ/. Wary that this might indicate a phonemic contrast between dental [g] and alveolar [s], I checked very carefully as I elicited. LD uses only alveolar [s] in both cases (where Cowichan and Saanich have /s/ and where they have /θ/). TS has examples both of [θ] and dental [g] (usually the first corrected to the second) where Saanich has /θ/, and of alveolar [s] (where Saanich has /θ/ and where it has /s/). VU has the dental [g] for Saanich (as he should) and even occasionally in a Cowichan word (where he should have [θ]). Both VU and LD have words in which a root ending in [s] in Samish, Cowichan, and Saanich precedes a suffix beginning with [s] in Samish but /θ/ in Cowichan and Saanich; in these cases both VU and LD are able to use the morphophonemic rule which changes the second member of a geminate cluster to /·/. Thus Samish [snás·et], Cowichan [násθet] 'get fat'. This rule does not apply when Samish [š] and [s] are adjacent.

The most likely conclusion then is that Samish has only one phoneme /s/. VU and TS sometimes pronounce it as dental [g] where Saanich has a dental [g] /θ/ corresponding, and this is Saanich dialect interference. LD who might be expected to show Cowichan influence does not use the dental [g] precisely because it is Saanich influence, and her family background does not show a likelihood of Saanich influence like VU's and TS's.

Some examples include:

VU [əiyeqʷiŋəi] 'dig' but later VU [sāyeqʷt] 'dig it up'
LD [epéʷeʷə] but one page later LD, VU [epéʷeʷə] 'bear'
LD [əewʷniɪ], VU [cəwʷniɪ] 'him' (vs. LD, VU [səwʷniɪ] 'her'), just
a few citations after Cowichan citations by EU (Cowichan would use
[tə] in the same rare deictics where Samish has [c])
VU [xʷélʷəget], LD [kʷélʷəet] 'tip (oneself over) in a canoe' (with
affix cognate to Cow. (-əet/))
VU [sʷāgeə] - [sʷāseə], LD [sʷāseə], (Cow., Saan. /sʷāseə/) 'face'
VU, LD [əxʷsəčs], EU Cow. [səčəpə] 'uncle or aunt by marriage' (note
that Samish /əxʷ-/ is a nominalizer as is Cow. /s-/ and that the
Cow. [č] /c/, /p/, and /ə/ respectively correspond historically to
the Samish /s/, /č/, and /s/)(Thompson, Thompson, and Efrat 1974,
Raffo 1972, and Galloway 1982)
VU [ʷāčəqəget] - [ʷāčəqəet], LD [ʷāčəqəet] 'move oneself, get out
of the way, go off to the side' (Upriver Halkomelem has
/ʷiyeqəet/ 'dodge, get out of the way')
LD Samish = EU Cow. [sʷiyʷələmiwʷə] 'right side of body'
LD, VU [sɛʷščen], TB [əšščen] corrected to [gəščen] 'blood'
TB [əšən] corrected to [gəšən], LD, VU [səsən] 'mouth'
TB [əxət], corrected to [sɣət] 'push, shove s-o or s-th'
TB [ʷāymə], LD, VU [ʷāyaʷə], Saan. (Montler 1984:87) //ʷəyʷəə//
's) sharpened-edged'
VU [ʷəsəet] 'it's getting warmer' (compare Upriver Halkomelem
/kʷəsəet/ 'get warm')
VU [šəəiqʷiŋəi], LD [səəiqʷiŋəi] 'awl' (VU, LD [səəiqʷ] 'a hole')

No significant allophony has been found for the remaining spirants
in Samish. For example, in some other dialects of Straits /l/ is
reported to have an occasional affricated allophone, [ɬ]. Such an
allophone has not been found in Samish. Examples of all spirant
phonemes will be found, with contrasts, in section 1.2.

1.1.3. Resonants

Samish has a matched set of plain and glottalized resonants. The
glottalized resonants appear to have arisen historically from clusters of
glottal stop plus resonant, probably encouraged by a morphophonemic rule
inherited from Proto-Central Salish which inserts glottal stop adjacent to
resonants to mark 'continuative' (= 'actual') aspect in verbs. Glottalized
resonants in Samish almost always decompose phonetically into clusters of
plain resonant plus glottal stop; there are only a handful of examples
of words pronounced with phonetic glottalized resonants as a variant.
More on this below.

Samish /ŋ/ and /ŋ̥/ are post-velar nasals rather than velar ones. They
are articulated in the same position as Samish /q/, /q̥/, and /x/.
This was first described for a Straits dialect by Thompson (1972:257) for
Lummi, where Lummi /ŋ/ is listed as a uvular resonant in the same column
with /q, q̥, x/. It was hinted at by Raffo (1972:7,11) for Songish, but Songish
/ŋ/ was still said to be velar, though "very back" and thus the resonant
counterpart of /x/. Montler (1984:18) is the clearest in this regard for
Saanich: "/ŋ/ and /ŋ̥/ are post-velar, usually produced farther toward
the back of the soft palate than the velar nasal in English 'lung'.".
Clallam and Sooke are described as having a velar /ŋ/.

/m/ is historically related to /ŋ/. In Samish it is less common than /ŋ/
but it is not rare. /n, n̥, l, l̥/ are all articulated as apico-alveolar
resonants. /y/ and /y̥/ are articulated as medio-palatal resonants. /w/
and /w̥/ are articulated as labio-velar resonants and in fact alternate
with /kʷ/ morphophonemically and historically.

Glottalized resonants are treated as clusters of plain resonant plus /ʔ/
in the descriptions of Sooke (Efrat 1969), Clallam (Thompson and Thompson
1971), Lummi (Thompson 1972), and Songish (Raffo 1972). Raffo gives six
convincing arguments why this is so in Songish and supports each with ample
data. Thompson, Thompson and Efrat (1974) and Efrat (1978) examine the situa-
tion in Straits and lean toward the view that glottalized resonants may well
be phonemic in Straits (Efrat says this may be the case for the Sooke and
Saanich dialects). Mukari (1981) concludes that they are phonemic for
the Cowichan dialect of Halkomelem (Galloway 1977 and 1982 show that they
are not present in Upriver Halkomelem due to loss of /ʔ/ adjacent to
consonants). Montler (1984) concludes that glottalized resonants are
phonemic in Saanich and gives four convincing arguments why this is so.

Both the arguments or tests of Raffo and Montler can be applied to see
what the phonemic status of glottalized resonants in Samish is. Let R =
any plain resonant and R' = any glottalized resonant.

1. Raffo found no minimal or even near minimal pairs contrasting R and R'. Montler found minimal pairs (though only of roots, not of utterances). I found two apparently minimal pairs, LD, VU [q'eyíleš] 'dance' and LD [q'eyíleš], VU [q'eyíleš] 'dancing', and LD [q'élest] 'bail one-self' and LD, VU [q'élest] 'boil something', and some minimal roots. But if clusters are involved one would expect the addition of a phoneme to make a difference in any case. This is no real help.

2. Raffo found that in Songish neither R? nor ?R are reduplicated as a unit (as a phoneme would have to be). Thus Songish [qén?] 'to steal' but [qén?qén] 'thief', [q'ám?] 'strong' but [q'ám?q'am] 'very strong', etc. Montler found however that in Saanich R? and ?R were reduplicated as units, for example with C₁VC₂+ 'characteristic', C₁C₂+ 'plural', and C₁C₂+ 'repetitive' reduplications. Thus Saanich /qén/ 'to steal' and /qénqéns/ 'thief', /stálew/ 'river' and /steltálew/ 'rivers', /?én/ 'much' and /?én?én/ 'too much'. In Samish both R? and ?R are reduplicated as units. Thus Samish has:
[qén?] 'to steal' and VU [qén?qén?] 'thief'
[k'ám?k'am?] 'strong'
[stá?lew?] 'river' and [steltá?lew?] 'rivers'
[?é?lən] 'house' and [?é?l?lən?] 'houses'
[sx'áy?i:] 'awake' and [sx'áy?x'ey?] 'lively'

3. Raffo found that in Songish glottal release was heard before and after R in these clusters but she never heard glottalization co-articulated with R. Montler found for Saanich that R' was heard with glottalization co-articulated and creaky voice (laryngeal tension) in monosyllables; in polysyllabic words R' normally decomposed to ?R phonetically in the environment V'_V and to R? phonetically in the environment V'_V'. However, he found this was optional and that in those positions and elsewhere ?R and R? both varied with R enunciated with creaky voice. Montler found that in Saanich decomposition of R' was sporadic but had phonetic justification: laryngeal tension carried over from a stressed vowel gives [?] a headstart and conversely is carried over to a following stressed vowel from an R' preceding. In the case of Samish, I found co-articulation of resonant and glottalization extremely rare but present (decomposition is the rule). Here are all of the examples I have found to date of true co-articulated glottalized resonants:
VU [hiwél? - híwél? - híwél?], LD [híwél] 'go toward, come toward'
VU [silévtx' - silévtx'], LD [silévtx'] 'tent'
VU [k'áívtx' - k'áívtx'], LD [k'áívtx'] 'bottom of a house'
(all three examples within 12 words of each other in one interview may indicate that such pronunciations are targets or lapses; however between these examples were the more common pronunciations:

LD [čé?lamanéw?xw'], VU [čé?lamanéw?txw'] 'log house'
VU [x'w'siyáməs], LD [x'w'siy?áməs] 'brave'
LD [ʔínetsx'w(č)], VU [ʔínetsx'w(č)] 'what did you say?'
LD, VU [mélq'w] 'uvula'
LD [hanáyí] 'lullaby'
LD [se?é?w?es - se?é?es], VU [se?é?es] 'putting it down'
LD [saw?wéy?qa], VU [saw?éy?qe?] 'lots of men'
LD [ééčél?le?] 'kingfisher'
LD [éexten?nit], VU [éexten?it] 'to poison someone'

(Notice that all but three of these examples occurs in the environment non-finally after a stressed vowel. More on this in paragraph 6 below in the discussion of the decomposition rule for Samish.)

4. Montler found that ?R and R' contrast on the morphophonemic level in at least one rule in Saanich:

'actual aspect' // -? -// infix -> ?e in the environment V'_?

but -> ? in the environments V'_R', V_R

Thus Saanich //v?elé[?e]?-nax' sen// /?elé?enax' sen/ 'I'm hearing it now.'
and /?elénax' sen/ 'I heard something.' vs. //k'wí v'č[?]m-t ite//
/k'wí téet ite/ 'I'm hitting him.' and /téet ite/ 'We hit it.'

I have not yet been able to find comparable forms for Samish, but since this is a morphophonemic rule it does not really affect the phonemics of resonants.

5. Raffo suggested several other diachronic factors supporting the cluster analysis of R' in Songish. These include the facts that comparative evidence shows: that /ʔ/ has been lost or added historically in word-final position, that in some cognates /ʔ/ has shifted position from one syllable adjacent to a resonant in one language to the next syllable in other languages, and that there are a number of cases of Songish /ʔ/ adjacent to R in correspondence with Chilliwack Halkomelem phonemic length just as /ʔ/ adjacent to other consonants is in correspondence with the same Chilliwack Halkomelem phonemic length. It is true that these facts support the diachronic cluster origin of R', and all else being equal they would be decisive. They support the case of Songish, where the other factors point in the direction of clusters. But in Saanich and Samish the other factors point in the other direction, so, as Montler points out, diachronic factors are less relevant than synchronic factors.

6. Tabulations of environments permitting R? and ?R in Samish show that: /R'/?-> syllabic R? /#C_#, CC_V', C_C(C)VCV', V'CC(C)_C(C)(CV)#

- > R' very rarely /V'_V, V'_C(C)#, V'_V'
- > R? /elsewhere _C, V'_V', _#
- > ?R preferentially, but also R? /V'_V

→ R occasionally in the speech of VU and TB (less in that of LD)

This is a rule of allophony for all Samish glottalized resonants. There is also a morphophonemic rule at a higher level which operates after all affixing is done; it converts //ʔ-R// and //R-ʔ// both to /R/. There is also an optional later morphophonemic rule partially dependent on the speed of speech, which allows deletion of /e/ and feeds into the producing syllabic resonants (both glottalized and plain).

Examples of the allophonic rule of decomposition of glottalized resonants include:

- [ʔŋʔsəiŋʔ] 'your flesh'
 [niɪskʔŋʔsténhələʔ] 'that's you folks' mother'
 LD [əçŋʔəwɪxʔ], VU [əçenʔəwtɪxʔ] 'pit-house, potato house, potato pit'
 VU [čəŋʔəwɪ] 'ant'
 LD [kʔŋʔstəliʔqʔ - kʔumʔstəliʔqʔ] 'mushroom'
 VU [pitəŋʔ] 'lizard'
 [qəmŋŋʔ] 'automobile'
 LD [əəlʔəəstŋʔi], VU [əəlʔəəstŋʔite] 'he hit us all in the face'
 (literally a passive; 'we were hit in the face')
 (rare instance of VU using [ə]; also note VU -ite = LD -i)
 For examples of phonetic R' see above under paragraph 3.
 [səlʔəəlʔtŋ] 'old-fashioned wool-spinner'
 [stʔəšəlʔqənʔ] 'a wool-carder'
 [təst] 'splashing him'
 LD [əkʔəlʔkʔəš], VU [əkʔəlʔkʔəč] 'real crooked'
 [əqayʔənʔč] 'rudder of boat'
 [qɪxʔəwʔi] 'second biggest canoe' (prob. loan < Halkomelem)
 LD [hiʔəliŋʔst] 'fall (season)'
 LD [siyámʔst], VU [siyʔámʔst] 'getting rich'
 [qəpəʔlʔsənʔ] 'I'm patching it' ([s'] would be more characteristic)
 [xʔəyʔtsen] 'I'm waking him up'
 [sqəmʔqsən] 'he has a sharp nose'
 LD [pəlʔpəikʔs] - VU, LD [pəlʔpəiəč] 'a lot hatched'
 VU [təqʔŋʔsən] 'I'm coughing'
 LD [čələwʔst], VU [čələwʔst] 'turn oneself over'
 [syənʔyənʔxʔ] 'black bass' - [syənʔyənʔxʔ] 'black rockfish'
 VU [čəxələwʔsaʔ], LD [čəxələwʔs(ə)] 'splitting wood'
 [xʔčəstənʔst] 'he hit me in the face (lit. I was hit in the face)'
 (example of an LD [č])
 [xəwʔi] 'pit-lamping (hunting or fishing by torchlight at night)'
 [šəpəlʔš] 'he's whistling'
 [əčəwʔət] 'he knows it'
 VU [čəmʔənʔ], LD [čəmʔənʔ] 'arrow'
 [kʔšəʔmənʔ] 'nickname'
 [ʔəʔləŋənəkʔ] 'village'
 [səiʔŋət] 'herring'

[səməʔnəʔ] 'halibut hook'

LD [šəpiʔwənʔ], VU [šəpiwənʔ] 'shirt'

LD [shíʔyɪlʔəkʔ], VU [shéʔyɪlʔəkʔ] 'happy, proud'

[čəmʔəš] 'herring eggs (just eaten raw)'

[kʔəliʔə] 'belly'

VU [čəlʔəqʔ] - [čəʔləqʔ] 'way up or back on land (away from the water)'

VU [šəəiŋʔiŋʔəi], LD [šəiŋʔiŋʔəi] 'awl'

[stɪtiŋiŋʔalʔi] 'colt'

[xəwʔiʔi] 'awake'

[ləkʔšənʔətən] 'they tripped him (lit. he was tripped)'

These rules can't be confirmed in all respects for the speech of TB because there is less available and because my transcriptions of the text and citation forms show far fewer glottalized resonants in his speech. There is one example showing a glottalized resonant reduplicated as a unit: TB [əyʔsiyʔ] 'to fear, be afraid of' (VU, LD [əyʔsiyʔ]). There is also one example of syllabic glottalized resonant in a text: TB [šəkʔŋʔ] 'bathe' or 'bathing'. TB retains glottalization of resonants in final position more often than not: TB [čələyʔ] 'bark (of plant)', [šičəšəmʔ] 'bird', [qʔwələnʔ] 'ear', [liʔəliʔ - ləʔəliʔ] 'far', [kʔələwʔ] 'skin', [čəʔsənʔ] 'growing up', vs. [sqʔəməyʔ] 'dog' (VU [sqʔəməyʔ]), [šəšəm] 'bone' (LD [šəšəmʔ], VU [šəšəmʔ]), and [qələŋ] 'eye' (VU, LD [qələŋʔ]). None of the speakers have initial R'.

In medial positions TB retains enough glottalized resonants to show similar patterns to VU and LD. Thus ʔR seems to be found only V'V while Rʔ is also found there and elsewhere.

TB [siʔmatŋ - siŋmatŋ] 'freeze', [lələʔŋŋ] 'hear', [stəʔləwʔ] 'river', [məmiʔmən] 'small, little' (VU, LD [ʔəmʔiʔmənʔ]), [šínʔəl] 'near, close by', [čəčəyʔəš] 'short' (LD [čəčəyʔəš], VU [čəčəyʔəš]). TB [sʔəlʔəluxʔ] 'old people' (VU [sʔəlʔəluxʔ]), [xʔənʔén] 'kind of, same as' (VU [xʔənʔén - xʔənʔén]), [nəəʔlʔnuxʔ] 'different peoples, different tribes', [kʔikʔənʔtínʔəšən] 'I was held by someone', [ʔəwʔəšʔínʔalʔ] (# may be absent) 'few', [əčiyʔəšələ] 'used to get wood'.

Some examples of TB's medial loss of glottalized resonants (or VU/LD's addition of them) include: TB [ʔənə] (VU [ʔənʔé]) 'come', [tsəʔlŋuxʔ] (VU [tsəʔlŋuxʔ]) 'animal', [əwəyʔəqə] (VU [əwəyʔəqəʔ], LD [əwəyʔəqəʔ]) 'man, male', [xəwə] (VU [xəwʔə]) 'new'; this seems part of a process of TB's loss of /ʔ/ adjacent to other consonants: TB [ʔəyʔə] (VU, LD [ʔəyʔə]) 'have a sharp edge', [xʔiʔxʔiʔi] (VU [xʔiʔxʔiʔiʔ], LD [xʔiʔxʔiʔiʔ]) 'narrow', [həʔiten] (VU [həʔəiten]) 'they (these people)' (gloss approximate from text).

1.1.4. Vowels

1.1.4.1. /i/

Samish /i/ has allophones [i], [iː], [ĩ], [ẽ], and perhaps [ey] (if the latter isn't a morphophonemic variant, /ey/). [i] is front lower high and lax and occurs stressed before /ŋ/ and /ŋ̃/, and unstressed in the following positions: before palatals /č, č̃, š̃/ (especially when /i/ also follows palatals or alveolars), and after palatals /y, ȳ, č̃, č̃̃, š̃̃/ especially when /i/ also precedes palatals, alveolars, or /m, m̃/.

_ŋ: ɔ̃, t, n, č̃, s, ɔ̃, č̃, k̃, q, ŋ, q̃, č̃, ?
 _č̃: t, n, l, č̃, š̃, y, x̃, ɔ̃, ?
 _č̃: l, š̃, ?
 _š̃: l, l̃, k̃, ?
 y, ȳ, m̃
 y, m̃, t, (ə, ɔ̃), s, ɔ̃, ɔ̃, l, č̃, ?
 č̃, n, s, l, č̃, ŋ
 š̃, l, č̃

Thus for example:

LD [lə́ɪnən] '(a) comb' (VU [lə́ɪnən])
 VU [lə́ɪnət] 'wish for it'
 LD [pə́k̃ːɪnə́ɪw̃x̃] 'smoking shed'
 [séq̃ɪnə́ɪséq̃ɪw̃s] 'baked potatoes (baked in oven)'
 LD [séɪq̃ɪñ?ə́ɪ], VU [séɪq̃ɪñ?ə́ɪ] 'awl'
 TB [lə́ɪñ?ə́ɪ] 'near, close by'
 VU [sə́ɪñr̃č̃á̃:ɔ̃] 'young girl'
 [tə́m̃ɔ̃ːl̃ɪč̃] - [tə́m̃ɔ̃ːl̃əč̃] 'barrel, tub'
 [š̃ɔ̃č̃q̃ɪːl̃m̃?] 'brushing [for spiritual cleansing, with cedar boughs]
 (a longhouse, a person, a home [in which a death has happened])'
 [ỹɪč̃ət] 'bow (the weapon)' (it seems the palatal environment is
 sometimes strong enough to trigger [i] even under stress)
 [š̃q̃éːl̃ɪč̃] 'modern wool-spinner'
 VU [š̃é̃ɪč̃] 'woods'
 VU [ə́k̃ːəl̃?ɪš̃] 'gun'
 LD [š̃ɪl̃ɪə́k̃ːəm̃?], VU [š̃ɪl̃ɪə́k̃ːəm̃?] 'many swimming'
 TB [č̃ːə́ỹɪːl̃ɪš̃] 'to dance'
 [ə́k̃ːɪš̃] 'name'
 [ə́k̃ːá̃ỹɪm̃a?] (LD a? - e?) 'underbrush'
 VU [sə́x̃ːɪỹɪm̃?], LD [sə́x̃ːɪỹɪm̃?] 'story (legend) from way back, rock
 with spirit in it'
 [tə́ỹɪm̃?ɪ] 'put it on (of any clothing, shoes, pants, hat, etc.)'
 TB [mə́ỹɪɔ̃], VU [mə́ỹɪɔ̃] (ə - ɔ̃ - s), LD [mə́ỹɪɔ̃] 'deer, (deer) meat'
 [š̃é̃ỹɪɔ̃] 'older sibling, cousin through older sibling'

VU [ỹɪ?ỹɪ?x̃əm̃?], LD [ỹɪ?ỹx̃əm̃?] 'black huckleberry'
 [lə́š̃č̃ɪñə́ñət] 'poor'
 [sə́q̃ːə́q̃ːw̃m̃?é̃ỹ?č̃ɪs] 'pussey willow (lit. "puppy in the hand")
 TB [lə́q̃é̃č̃ɪs], VU [lə́q̃é̃č̃ɪs] 'five'
 TB [ə́k̃ːw̃ə́č̃ɪl], VU [ə́k̃ːw̃ə́č̃ɪl] 'day'

I should mention here that it is not always easy to distinguish [i] from [ẽ], the raised and fronted allophone of /e/, which sometimes occurs in similar environments. (Historically Straits and Balkomalelem have both changed many cases of unstressed /i/ to /ẽ/, thus causing some of this complication.) Some of these cases can be seen when the same morphemes appear affixed under different stress patterns. A few can be seen when speakers differ, one using [i] and others using [ẽ]. In some cases [i] was transcribed where [ẽ] should have been and vice versa.

The allophone [ĩ] occurs word-finally under stress for VU where LD seems to have [i]. VU's [ĩ] seems somewhat laxer as well as lowered. It is sometimes in free variation with [i]. Some examples include:
 VU [haỹɪ - haỹɪ̃], LD [haỹɪ], TB [heỹɪ̃] 'big'
 VU [q̃ːəñɪ̃], LD [q̃ːəñɪ] 'seagull'
 VU [sẽm̃ɪ̃?], LD [sẽm̃ɪ?] 'blanket (any kind)' (here the effect occurs even with a final /ʔ/)

/i/ has a rare allophone [ẽ̃], tense raised upper mid front unrounded vowel, (sometimes in variation with [ĩ]) when stressed and adjacent to postvelar and glottal obstruents. Plain [i] also occurs here however and seems to be more frequent in these positions. When following a postvelar, stressed /i/ allophones are sometimes preceded by a schwa on-glide; when followed by a postvelar, they are sometimes followed by a schwa off-glide. Since the phoneme /e/ has allophones including [e] and [ẽ] (among others), the [ẽ̃] allophone of /i/ is occasionally hard to distinguish; the allophones of /e/ however do not seem to have schwa glides adjacent to postvelars.

Some examples of [ẽ̃] and [ĩ] include the following:
 [nẽq̃é̃ːx̃] 'black'
 VU [x̃ə̃ːč̃ət] 'scratch it (on purpose)'
 VU [stə̃q̃é̃w̃ - stĩːq̃é̃w̃] 'horse' (Balkomalelem [stĩːq̃íw̃])
 [sẽq̃íːw̃s - sẽq̃é̃ːw̃s] 'pants'
 [č̃ɪ̃ːq̃ːt̃t̃ə̃š̃q̃ːə̃ñɪ̃?] 'split (a) fish head'
 LD [č̃q̃ɪ̃ːl̃?ə̃] 'person who does burnings for the dead'
 [tq̃íːp - tq̃é̃ːp] 'big fish trap (round, used in ocean)'
 LD [hə̃ːỹé̃q̃əñ], VU [h̃ɪ̃ːỹé̃q̃əñ] 'have a wide nose'
 Examples are few compared to other Straits dialects. The norms for both

/i/ and /e/ seem to be higher for Samish than for Lummi for example.

[ey] seems to occur in both stressed and unstressed positions as an alternate to [i] in careful pronunciation and often after postvelars. [ey] in the latter environment probably reflects the schwa on-glide and a lowered allophone of /i/. For example:

VU [ləŋéyt - ləŋít], LD [ləŋít] 'watching it, looking at it'

VU [swéy?qe? - swéy?qe?], LD [swíy?qe?] 'man' (VU's [e] also reflects a slower more careful pronunciation)

[sléwéy? - sléwíy?] 'cedar bark'

[čélay? - čéli?] 'bark of fir or balsam'

LD [xəy?əm?nač], VU [xəyóm?nač] 'tree trunk and roots, stump' (LD's retention of [y?] is evidence of slower/more careful pronunciation in contrast to VU's [y])

[xəy?xəy?k] 'cod eggs (picked up and eaten raw if fresh)' (could also show /ey/ in both places)

Elsewhere /i/ has allophone [i] (optionally with schwa on-glides after postvelars and schwa off-glides before postvelars, as mentioned). No examples of both on-glides and off-glides on the same allophone have been found so far; where postvelars surround /i/, the schwa off-glide seems to be retained while the on-glide is dropped.

Some examples of [i] include:

[šxwíle?] 'grandparent-in-law'

[šííííy?] 'ashamed to take a slave'

[šííketel] 'loving each other'

[?i]. TB [?i] (normal speed, text) - [?é.] (slow citation) 'and'

[pípkwten] 'a float'

[píkwen] 'split roasting-stick'

[xwíy?ém?] 'story'

VU [qwííxwet], LD [qwííxwet] 'miss it, move it'

[xwííxwet] 'anything around the neck (cloth, neckerchief, necklace)'

VU [čísten] 'horn, antler'

VU [xčísten] 'I know him'

[etíšəm] 'fish slime'

[etí?it] 'true, truly'

Examples of unstressed [i] are quite rare except before y(?)# (where they could also be heard as [e] /e/). This is the result of a historical change shared within Straits and Halkomelem (see above).

1.1.4.2. /e/

Samish front unrounded /e/ has allophones [e] (upper-mid tense), [e"] (lowered upper-mid to mean-mid tense), [e"] (raised lower-mid to mean-mid tense), [e] (lower-mid lax), [e"] (lowered lower-mid tense),

and [a] (upper-low lax). The distribution and frequency of these are similar for LD and VU but rather different for TB. For LD and VU [e] and [e"] are the most frequent (55.2 percent of the words with /e/ had these), [e"], [e], and [e"] are the next most frequent (34.3 percent), and [a] is the least frequent (10.5 percent). For TB [a] is the most frequent (78.5 percent), [e] is next most frequent (12.3 percent), and [e] is least frequent (9.2 percent, 6 examples which either vary with /i/ [i], appear as [i] or [e"] for the other speakers, or could be transcribed as [ey] /i/). (None of these counts includes texts.)

For TB, [e] is rare in citations (8 examples) and is never cited under stress. It is more frequent in the text but still not as frequent as [a]; in the text [e] appears stressed a few times (mainly before /ŋ/ or /ŋ/ as with LD and VU), but in both the text and the citations [e] is clearly the unstressed allophone of /e/. [a] on the other hand is almost always stressed (42 out of 51 citations); half of the cases of unstressed [a] are echo vowels in the environment é?_. In the text of TB [a] only appears stressed or in the position of an echo vowel, i.e. in the environment é?_. In the text [e] only appears a few times and always as a stressed allophone of /i/.

For TB then, /e/ has allophones:

[a] under stress (except _ŋ,ŋ) and é?_

[e] elsewhere (stressed _ŋ,ŋ, and unstressed)

[e] is an allophone of /i/).

For LD and VU the situation is reversed in some respects. All the allophones of /e/ appear stressed most of the time in citations.

[e] and [e"] are unstressed in only 34 out of 407 words (8.35 percent), [e"], [e], and [e"] are unstressed in 65 out of 253 words (25.7 percent), and [a] is unstressed in 15 out of 77 words (19.5 percent).

The 34 examples of unstressed [e] and [e"] occur in the following conditions: five vary with [i] or are errors for [e"] (allophones of /i/), fourteen are echoes in the phonemic environment é?_, ten occur in the environment _y,ý where they are likely [e] /e/, and the remainder appear to be errors for varieties of [e].

The 15 examples of unstressed [a] occur as follows: five occur as echoes in the environment é?_ (é?a), six vary with [e], and four vary with [e].

The 65 examples of unstressed [e"], [e], and [e"] occur as follows: 14 are echoes in the environment of é?_ (mostly é?a, é?e", and é?e"), 18 or more occur C_(?)# (where C = consonant, usually a palatal), some vary with [e] and may reflect a fronted allophone of /e/ adjacent

to palatal consonants (perhaps something like [ə^ʰ]), the rest seem to be the unstressed allophone of /ə/ for LD and VU, as well as for TB.

A word should be said about the phonemic environment é?_ which conditions unstressed /ə/ allophones for LD, VU, and TB. In most cases the unstressed allophone matches the stressed one. In some cases the unstressed allophone is shifted to a more mid allophone. Compare the following:

VU [pé^ʰak^w] 'pipe (for stove or tobacco)'
 VU [spé^ʰes - spé^ʰʔe^ʰs], LD [spé^ʰʔe^ʰ - spé^ʰʔe^ʰə] 'bear'
 VU [q^wé^ʰen], LD [q^wé^ʰen - q^wé^ʰn] 'mosquito'
 [qé^ʰax^w] 'crabapple'
 LD [sɛ^ʰʔe^ʰs], VU [sɛ^ʰʔe^ʰs], TB [xɛ^ʰʔas] 'bad'
 VU [hɛ^ʰʔa] 'yes'

An interesting fact to notice is that LD often uses the highest allophones, VU the next highest, and TB the lowest allophones of /ə/. This can be seen in the word for 'bad' just above and in a number of other examples such as:

LD [ʃx^wʔiléwa^ʔ], VU [ʃx^wʔiléwe^ʔ] 'turnip' (loan < Chinook Jargon)
 LD [ləhé^ʰl^ʔ], VU [ləhé^ʰl^ʔ] 'the bone game, slahal game'
 LD [ləhé^ʰʔe^ʰl^ʔ], VU [ləhé^ʰʔe^ʰl^ʔ] 'playing slahal'
 LD [xé^ʰʔe^ʰl^ʔa], VU [xé^ʰʔe^ʰl^ʔa] 'the Transformer'
 LD [pé^ʰeytən], VU [pé^ʰ(ʔ)eytən] 'fishing rod, fishing boat'
 LD [sté^ʰlənux^w - sté^ʰlənux^w], VU [sté^ʰlənux^w - sté^ʰlənux^w] 'medicine'
 LD [ʔeé^ʰqá], VU [ʔeé^ʰqá] 'outside'
 TB [néé^ʰʃnɛ́^ʰčeweč], VU [néé^ʰʃnɛ́^ʰčeweč], LD [néé^ʰʃnɛ́^ʰčeweč] 'one hundred'
 TB [sták^weɪ], VU [sté^ʰak^weɪ], LD [sté^ʰak^wi] 'back'
 TB [mán], LD, VU [mí^ʰn] 'father'
 TB [təqə^ʔ], VU, LD [tə^ʰqə^ʔ] 'liver'

When the allophones of /ə/ are charted on a grid of adjacent consonants for VU and LD the following patterns show up:

[ə] can occur in any of the environments

[e^ʰ], [e^ʰ], [e], [e^ʰ], and [ə] occur _R,R',Q,ʔ (Q = postvelars, R' = glottalized resonants, R = plain resonant); in these environments they vary freely with each other and with [ə] (but some preferences have been noted above)

[ə] is found more often adjacent to Q or before ʔ

[ə] can acquire a [y] off-glide Q_N,N' (N = nasal, N' = glottalized nasal)

[ə] sometimes acquires a [y] on-glide n_Q

Examples of these rules are plentiful above except for the two about glides: [qé^ʰʔnɪ^ʔ] 'teenaged girl'

VU [sá^ʰqəyn^ʔ - sá^ʰqé^ʰʔən], LD [sá^ʰqé^ʰʔən] 'long feather'
 VU [nyé^ʰqə^ʔ - nyé^ʰqə^ʔ - né^ʰqə^ʔ], LD [nyé^ʰqə^ʔ - né^ʰqə^ʔ], TB [né^ʰqə^ʔ] 'fallen snow'

1.1.4.3. /ə/

/ə/ has the following allophones for all three speakers:

[ə] under stress (transcribed as [é])
 [ə - ə] unstressed and adjacent to palatals or _N,N'
 [u] unstressed and adjacent to labialized obstruents (rarely - [ə]) perhaps also unstressed and adjacent to bilabials (often - [ə])
 [ə] elsewhere

For example:

[səni^ʔ] 'short Oregon grape berry'
 [təq^wum^ʔ] 'thimbleberry'
 [pq^wéčən], TB [pq^wéčɛn] 'sand'
 VU [ʃšənəp] 'plow'
 VU [ləqəqə^ʔ] 'line it up, make yourself even (of people, canoes, etc.)'
 TB, VU, LD [tɛxən] 'six'
 LD [tək^wx^w], TB, VU [tək^wux^w] 'nine'
 TB, LD [néə], VU [néə^ʔ - néə] 'one'
 LD, TB [čéə^ʔ], VU [čéə^ʔ - čéə^ʔ] 'two'
 VU [xəyənəč] - LD, VU [xəy^ʔənəč] 'snag, stump'
 LD [swí^ʔwələs - swí^ʔwələs], VU [swí^ʔwələs] 'teenaged boy'
 VU [čɛ^ʰlčəq^w] 'on fire, be burning'
 [stámɛš] 'warrior'
 TB [lqəčɛs], VU [lqəčɛs - lqəyčɛs], LD [lqə(y)čɛs] 'five'
 [xəyčɛ - xəčɛ], TB [xəčɛn] 'dry'
 VU [ʔɛn^ʔé - ʔən^ʔé], TB [ʔɛná - ʔəná] 'come'
 [syəwən] 'spirit song and dance'
 VU [tsál^ʔnux^w], TB [tsá^ʰl^ʔnux^w] 'animal'
 [čá^ʰmuq^w] 'great grandparent; great grandchild'
 VU [núk^w - ná^w], LD [nák^w] '(it's) you (sg.)'
 [səp^ʰuk^w] 'soft edible bone in fish head'
 VU [x^wul^ʔk^wəl^ʔé^ʰxən^ʔ] 'butterfly'
 VU [x^wunítə] 'white man'
 [sɛk^wun] 'breath (noun)'
 VU [ʔəw^ʔʃlənənux^wsənsə^ʔ] 'I'll see you'

There are a few cases of unstressed [u - ə] adjacent to bilabials;

[ə] is much more common in this position.
 [nupət - nepət] 'to advise someone'
 VU [šəšum^ʔ] 'shallow'
 LD [šqetəw^ʔuɪ] 'bridge'

[sčí?wup] 'tight (clothes, in box)'
 [wuwesél?ə - wewesél?ə] 'he's barking (of a dog)'

1.1.4.4. /u/

/u/ is a rare phoneme, appearing mainly in loanwords from Chinook Jargon, European and other Amerindian languages. (A sound shift affecting Halkomelem and dialects of Northern Straits [Saanich, Songish, and Samish] changed */u/ to /a/.) The examples of Samish [u] which are not in apparent loans appear to be cases of /ə/ → [u] before bilabial /w, ʔ/ in unstressed positions or of schwa deletion and vocalization of //w, ʔ// to /u, u?/. These cases often vary with [əw] and can be shown to consist of //əw//, morphophonemically. There are also a few cases of this which occur under stress.

/u/ in spite of all that does appear to have some allophones. A few cases of [u^h] or [u^l] occur word-finally (sometimes other speakers have [u] in those places). Also a few cases of genuine [o] occur in some loans (sometimes in free variation with [u]). Otherwise [u] is the expected allophone.

Examples of /u/ include:

[k^húyuk^w] 'fish hook' (probable loan)
 VU [pútaɬk^wə], LD [púteɬ?k^wə] 'oar' (root is loan < English "boat")
 VU [pú] 'boat'
 VU [yí?sk^wəsk^wúl] 'go to school'
 [ak^wúk^wəl] 'he's/she's in school' (root < English with Samish reduplication)
 VU [k^wú.ɬ] 'gold' (prob. < Chinook Jargon < English)
 VU [kəpú], LD [kəpú^h] 'coat' (< Chinook Jargon < French "capote")
 [hem?ú] 'pigeon' (widely disseminated throughout Northwest in unrelated languages, see Seabury 1985)
 [múməs] 'cow' (< Chinook Jargon)
 [q^húw^h?á] 'second biggest canoe' (prob. < Halkomelem where it has just this form)
 [əwó^hwəɬ] 'goat wool blanket' (prob. < Halkomelem where it has just this form and whose people had access to mountain goat unlike the Straits people)
 [təmə?lɛč - təmə?lɛč] 'barrel, tub'

Examples of /əw/ [uw - əw] include:

particle /əw/ 'contrastive (often with contrast to an earlier clause or sentence)' (precedes verb, often suffixed to other preposed particles, works much as in Saanich, see Montler 1985:194-197):
 VU [ʔuw? xčítən k^wə q^hý?ŋi?] 'I know the girl.'
 VU [ʔəw? xčítə k^wə q^hý?ŋi?] 'We know the girl.'

VU [lá?ə k^wə? lá?ə] 'it's over there' (//k^w-əw//)
 VU [si?ítu? nás] 'extremely fat' (//si?ít-əw//)
 [əw?] 'so, then' (//ə-əw//)
 LD [luw?] 'past contrastive' (//l-əw//)
 VU [sčəq^wó?ə? - sčəq^wəw?ə], LD [sčəq^wəw(ə)] 'fire'
 [šúka?] 'small' vs. VU [šəšəwka?] 'a few small ones'
 LD [sčuw?ét] 'smart, know how to'
 TB [túle - túle néə] 'an other'
 (In these examples I have replaced [ə] with a space to show words more clearly.)

1.1.4.5. /a/

Samish /a/ has two allophones, [ɔ] and [a]. [ɔ] is rather rare compared to [a]; for example I count only 26 examples of [ɔ] in all the citations but 110 examples of unstressed [a] alone and many more of stressed [a].

ɔ:
 q̣w_ŋ -a
 n_qw -a
 t_qw -a
 q̣w_qw
 q̣w_q̣
 q̣w_ŋ
 m_ŋ -a
 n_ŋ -a
 q̣w_ʔw
 q̣w_ʔt -a
 q̣w_ŋ -a
 q̣w_q̣
 w_q̣w
 ḳw_q̣w
 ḳw_ŋ
 š_l < Chinook Jargon
 m_qw
 q̣w_q̣w
 q̣w_q̣w -a

ɔ: x̣w_ʔx̣w, x̣w_x̣w TB, q̣w_q̣w, q̣w_q̣

From the above environments it is quite clear that [ɔ] occurs (often in free variation with [a]) flanked by a labialized postvelar on one side and a (labialized) postvelar, labialized velar, or a labial resonant on the other side. Only rarely is one of the postvelars not labialized (ŋ, q, q̣); those cases all have [a] as the more frequent variant allophone. Four cases occur of an alveolar consonant flanking and again they have [a] as the more frequent variant allophone. One other case occurs of [ɔ] in an environment other than those mentioned but it is VU, LD [ləšɔl] 'shawl', clearly a borrowing from Chinook Jargon *lašaw* 'shawl'. An interesting pair is VU's citation of [sɔŋ] as Lummi and [sɔŋ] as Samish for 'go up (a hill)'; the Lummi norm for /a/ is [ɔ] (Charles, Demers and Bowman 1978).

Unstressed [ɔ] is even more rare. In fact most of the examples go back to //ə// morphophonemically. They may be slightly rounded and lowered allophones of /ə/, mistranscribed as [ɔ], or they may be

genuine unstressed [ɔ], found in the predicted environments but proportionately more rare than stressed [ɔ]. If they are the latter a morphophonemic rule would be required for them, //ə// → /a/, or morphophonemically a new reduplication type would have to be posited for them.

Unstressed [a] in the environment _(?)# appears only in careful pronunciation. In normal or allegro speech it changes to [ə].

Some examples of /a/ include the following:

[sɔ̣wɔ̣q̣wɪyʔ] - [sɔ̣wɔ̣q̣wɪyʔ] 'dead'
 [ʃɔ̣lq̣wɔ̣mɔ̣? - ʃɔ̣lq̣wɔ̣mɔ̣?] 'blackcap berry'
 VU [q̣wɔ̣q̣wɔ̣q̣wɔ̣?], TB [q̣wɔ̣q̣wɔ̣?] 'to drink'
 [šɔ̣wɔ̣q̣wɔ̣q̣wɔ̣?] 'the whole world' (//əq̣wɔ̣q̣wɔ̣// 'point, nose')
 VU [wɔ̣q̣wɔ̣ɔ̣], LD [wɔ̣q̣wɔ̣ɔ̣] 'downstream'
 VU [čɔ̣mɔ̣ŋɔ̣sɔ̣sɔ̣n - ɔ̣mɔ̣ŋɔ̣sɔ̣sɔ̣n] 'I'm getting wet', VU [čɔ̣mɔ̣ŋɔ̣sɔ̣sɔ̣n] - [čɔ̣mɔ̣ŋɔ̣sɔ̣sɔ̣n] 'to get wet'
 VU [sɔ̣lq̣wɔ̣q̣wɔ̣q̣wɔ̣?] 'to get a hole in it'
 [sɔ̣wɔ̣q̣wɔ̣? - sɔ̣wɔ̣q̣wɔ̣?] 'head'
 [q̣wɔ̣q̣wɔ̣ɔ̣(ɪ)ɔ̣ɔ̣] 'arbutus tree'
 VU [x̣wɔ̣q̣wɔ̣q̣wɔ̣q̣wɔ̣?], LD [x̣wɔ̣q̣wɔ̣q̣wɔ̣q̣wɔ̣?] 'thin (for ex. tree or rope)', TB [x̣wɔ̣q̣wɔ̣q̣wɔ̣q̣wɔ̣?] 'narrow'
 [qɔ̣lɔ̣ɔ̣mɔ̣?] 'dirty (of physical or verbal qualities)' but VU [qɔ̣lɔ̣ɔ̣mɔ̣? (?ɔ̣)ɔ̣?lɔ̣ŋ?] 'dirty house'
 [ʔɔ̣ɔ̣lɔ̣?] 'here' but VU [ʔɔ̣ɔ̣lɔ̣? tɔ̣ sɔ̣wɔ̣mɔ̣yʔ] 'the dog is here'
 [sɔ̣ɔ̣lɔ̣q̣wɔ̣ - sɔ̣ɔ̣lɔ̣q̣wɔ̣?] 'snake'
 [x̣wɔ̣q̣wɔ̣q̣wɔ̣q̣wɔ̣q̣wɔ̣?] 'grasshopper'
 [qɔ̣tqɔ̣tɔ̣ɔ̣lɔ̣?] 'spider'
 [pɔ̣pɔ̣q̣wɔ̣?] 'mouldy'
 [sɔ̣ḳwɔ̣tɔ̣?] 'raven'
 [sɔ̣wɔ̣ḳwɔ̣n] 'loon'

1.1.5. Length and Stress

// has two allophones, [ː] and [ˑ]. The former occurs only after stressed vowels in a few examples in careful speech and as emphatic length (sometimes even [ːː]) in stories and conversations. The latter, [ˑ], occurs after spirants and non-glottalized resonants; a morphophonemic rule, mentioned in the discussion of consonant allophony above, changes geminate spirants and resonants to spirant/resonant plus length (see 1.1.1 for examples). [ˑ] also occurs after stressed vowels occasionally, for example:

[čɔ̣ɔ̣ɔ̣ɔ̣?] 'bluejay'
 VU [q̣wɔ̣q̣wɔ̣q̣wɔ̣?] 'elk'
 TB [q̣wɔ̣q̣wɔ̣q̣wɔ̣q̣wɔ̣?] 'dance'

[sčé·nuxw], TB [sčá·nuxw] 'fish'
 VU [eqé·mukw - eqémukw] '(small) octopus'
 VU [(s)qem?k'á·i] 'big octopus'
 VU [há·i?ə] 'yes'
 VU [k'ú·l] 'gold' (< Chinook Jargon)
 TB [tsá·lɣuxw], VU [tsál?ɣuxw] 'animal'
 ʔ [sné·nt], VU [sné·nt] 'rock, mountain'

There are no attestations of length (other than emphatic) after /ə/.

Stress has not been found to be predictable and thus is phonemic. There are subminimal pairs (see below). I have occasionally transcribed secondary stress, ('), within a word, but so rarely that I believe it is probably mistranscription. This seems confirmed by the fact that it is not attested consistently from one citation of a given word to another.

1.2. SOME MINIMAL AND SUBMINIMAL PAIRS

Minimal pairs are a helpful shortcut to determine phonemic contrasts and provide useful confirmation of such contrasts. They are no substitute for tabulation of environments which provide the predictive power of phonemic descriptions. Due to the large number of phonemes in Samish there are fewer minimal pairs than in languages with a smaller phonemic inventory. The fact that Samish is more synthetic than analytic also diminishes the chances of minimal pairs. However by eliciting data cognate with minimal pairs in other Straits dialects and in Halkomelem it has been possible to find some sets sooner than by accident. Here are a few minimal and subminimal pairs found in Samish to date. More of these are from VU because there was little need to re-elicite them from LD.

[saw?níi] 'him' vs. VU [saw?níi], LD [saw?níi] 'her'
 [sə] 'the (female)' vs. [ce] 'the (male)' vs. [te] 'the (visible, generally existent)' vs. [k'ə] 'the (invisible, remote); [subordinator]' vs. [ʔə] 'oblique case marker (nominal phrase not co-referenced by verb affix)' vs. [nə] 'my'
 [q'əyíleə] 'dance' vs. LD [q'əyíleə], VU [q'əyíleə] 'dancing'
 LD [q'éləst] 'bail oneself' vs. LD, VU [q'él?əst] 'boil something'
 ɣ. VU [k'él?əst] 'spill, overturn, capsize'
 [təə] 'approach, get near' vs. VU [təs] 'it got smashed'
 VU [qém?əl] 'tide starts to come in' vs. VU [qé·mél?] 'tide is coming right in'
 VU [čáq'ən] 'to sweat' vs. VU [čáq'ən] 'to melt' vs. VU [čáq'el] 'it's burned' vs. VU [čéq'w] 'get burned' vs. VU [čéq] 'surprised' vs. LD [čéq'w(?)], VU [čáq'w] 'rotten (of wood)'
 VU [q'é·l] 'talk' vs. VU [k'é·l] 'to hide' vs. VU [q'él?] 'believe' vs.

VU [k'él?] 'spilled (of a container)' vs. VU [q'él?] 'ripe; cooked' vs. VU [k'ú·l] 'gold'
 VU [səx·səxw] 'to be lazy by nature' vs. [sá?sxw] 'damp (in the morning), dew'
 VU [q'élən?] 'ear' vs. VU [q'élən?] 'he's barbecuing' vs. VU [q'élən?] 'eye' vs. VU [k'élən] 'to fly'
 VU [stén] 'what is it?' vs. VU [štén] 'to walk' vs. VU [štínət] 'wish for it'
 VU [píxwət] 'shake it and make it fall, brush something off' vs. VU [páxwət] 'blow it up (with mouth), blow it off' vs. VU [puxwél?ə] 'blowing (of the wind)' vs. VU [péxwən] 'it's stale, boring'
 VU [sə'səw?] 'beach' vs. VU [səsen] 'mouth'
 VU [máq'w] 'it burst (of a sore)', VU [mák'w] 'all' vs. VU [má?aq'w] 'duck' vs. VU [máq'w] '[stout (of a tree)] (in text)' vs. VU [máq] 'satiated with food, full'
 VU [čəs] 'got hit (by something in air, ground, or water)' vs. VU [tsás] 'poor (in wealth, spirits, etc.)'
 VU [lakélit] 'lock it up' vs. [qəlét - qəl?é't] 'again'
 [k'áq'w] 'get stuck (like clothes in chair, etc.)' vs. VU [čáq'w] 'it peeled off (bark for ex.), came off (of something stuck on)' vs. VU [k'ák'w] 'it went out (of fire)'
 VU [təq'w] 'get tight' vs. VU [tək'w] 'to break (of a stick)' vs. LD [čák'wčək'w] 'mud is loose' vs. [təq'wčəq'w] 'red snapper'
 LD [čáq'w?] 'get bruised' vs. [čəq'w?] 'salal berry'
 VU [q'éčəqs], LD [q'éčəqs] 'coho salmon (one kind)' vs. [q'éčiy?] 'moss'
 VU [həən] 'to sneeze' vs. VU [sx'ésən], LD [sx'ésəm] 'soapberries, Indian ice cream'
 VU [xw'éčəsət], LD [xw'éčəsət] 'wake up' vs. VU [xw'éčəsət], LD [xw'éčəsət] 'go through a narrow place (in mountains, in crowd)'
 VU [x'əyílem?] 'rope' vs. VU [x'əlam?] 'small black Chinese slipper (has something like teeth on outside)(limpet shell)(eaten after cooking)'
 VU [lá?ə] '[past]' vs. VU [lá?ə - lá?ə - le?ə] 'there' vs. LD [lú?u] '[past contrastive]'
 VU [háy] 'to finish' vs. VU [ʔáy?] 'to be good'
 [nás] 'to be fat' vs. [nás] 'four'
 [čəxt] 'tear it' vs. [čəxt] 'tearing it'
 [šápəxt] 'scatter it' vs. [šápəxt] 'scattering it'
 [səxt] 'push it' vs. [səxt] 'pushing it'
 [čtən] 'crawl' vs. [čtən?] 'crawling'

2. MORPHOPHONEMICS (A BRIEF OUTLINE)

Several morphophonemic rules have already been referred to above:

1. A spirant or resonant → /ʔ/ after an identical spirant or resonant (1.1.1, 1.1.2, 1.1.5).
2. /ʔ/ is inserted adjacent to resonants in the 'continuative aspect' (also known as the 'actual aspect' in the literature on Straits) (1.1.3).
3. /ʔR/ and /Rʔ/ → /R'/ (where R = resonant, R' = glottalized resonant) (1.1.3).
4. /m/ - /ŋ/ in some roots (1.1.3). The other Salish languages show /m/ for these forms and for all other cases of Straits /ŋ/ (except Twana and Lushootseed which show /b/ and other languages show traces an arrested sound change toward /b/ [for example, Comox and several old idiolects of Upriver Halkomelem, see Galloway 1982 and Thompson and Kinkade forthcoming]). I believe all these derive from a Proto-Central Salish */m/ (Kuipers 1970 and 1982, Galloway 1982) (Thompson 1979 proposes */ŋ/ for Proto-Salish and by implication for Proto-Central Salish).
5. /k/ - /w/ (and /č/ - /y/) in some roots (1.1.3). Closely related is the rule that /č/ - /y/ [and /ŷ/ - /y/ in some roots; cognates in most other Salish languages show that historically these alternations were produced by a sound change as follows: *y, *w → Straits č, k* respectively, other languages y, w in the environment _V, *y, *w → Straits (+ other Salish languages) y, w respectively elsewhere (i.e., _C, #)]. This rule however has not survived intact as a synchronic rule in Straits. There is now a more general tendency to use the resonant in the continuative aspect and the obstruent in the non-continuative, though traces of the original rule can also be seen.
6. Glottalized resonants are reduplicated as any other unit consonant is (1.1.3).
7. Samish has a number of types of reduplication, including at least C₁VC₂- 'plural' (where V = V₁ or /ə/), -C₁əC₂- 'characteristic' (where the equals sign shows the position of affixation of a derivational affix) (1.1.3), and others on pp. 39, 45-47.
8. /ə/ is deleted optionally when unstressed in allegro speech; the rule is actually somewhat more complex than this I believe (1.1.3). For example, LD normally makes such a deletion in the environment C_C# (where C = any consonant) while VU and TB rarely make it except when the final consonant is a nasal. This rule feeds into the rule producing glottalized resonants (and so precedes it); it also feeds into the allophonic rule producing syllabic resonants.
9. (A phonotactic rule): Glottalized resonants are not attested word-initially (1.1.3).
10. /i/ may vary with /ey/ in some words (1.1.4.1).

11. There may be a morphophonemic rule inserting echo vowels between /ʔ/ and non-resonants in a number of words (1.1.4.2).
12. There is likely a rule vocalizing semivowels as follows: /y, ŷ, w, ŷ/ → /i, iʔ, u, uʔ/ respectively in the environment C _C, # (1.1.4.4).
13. /ʔew/ → /əw/ after most preverbal particles (1.1.4.4).
14. If unstressed [ɔ] is not mistranscribed for a slightly rounded and lowered allophone of /ə/ (which I believe it is), then either a morphophonemic rule /ə/ → /a/ in certain unstressed environments is required or a new type of reduplication (C₁a-). Both seem unlikely (1.1.4.5).
15. Unstressed /a/ → /ə/ in the environment _(?)# (where the /ʔ/ is optional as shown by parentheses) (1.1.4.5).

Additional morphophonemic rules which must be present in Samish include:

16. Optional insertion of /ə/ in the environment R_ŋ, ŋ (R = plain resonant). This rule is used much more frequently by LD than by VU; it is also attested in TB's speech.
17. Morphophonemic rules are required for specifying each distinct type of reduplication. Besides 'characteristic' and 'plural' reduplications Samish uses reduplications also for 'diminutive', 'continuative/actual aspect', and perhaps other aspects such as 'resultive' or 'durative' as well as some derivational processes.
18. Morphophonemic rules are required for several kinds of ablaut, metathesis, and stress shifting, all used in forming 'continuative aspect', 'plural', and some other aspects and derivations.
19. Morphophonemic rules are required for several infixes as well, for example //-el- - -le-// 'plural' and //-C₁V₁-// 'continuative aspect', to specify places of insertion and the lexically-determined and morphological classes to which they apply.
20. One or more morphophonemic rules are needed to describe the shifts of stress found when roots of different valences (strong = always retains stress, weak = never bears stress, neutral = bears stress in certain environments) are affixed with affixes with such stress valences. Most, if not all, combinations are attested in Samish.

Examples of the first fifteen rules except for 4, 5, and 12 can be found in the sections mentioned but a few more are given here. Examples of rules 15, 16, 17, 18, and 19 are also present in some of the forms given but are not easily found there; some examples are given here also, along with examples of rules 4, 5, 12, and 20. Some affixes may not be segmented yet. Hyphens separate inflectional affixes, equals separate derivational affixes; infixes are shown enclosed in square brackets and either hyphens or equals signs as appropriate. Morphophonemic transcrip-

tion is enclosed in double slashes; allomorphs can be seen within phonemic single slashes but segmented with hyphens or equal signs.

1. //s-sima?// TB /s'ima?/ ([g'ima?]), VU /sima?/ 'ice'
 VU //k'és-sat// /k'és-at/ 'it's getting warmer [or get hot]'
 VU //k'én-nex ne s-čáá-en// /k'én-ux ne sčáin/ 'I have a cold'

2. //k'in-tal// 'to fight' vs. //k'í[-w-?-]en[-?-]-tal -? //
 /k'iwéntal/ [k'íwén?tal?] 'fighting'
 //lalt-ás-t// 'splash him' vs. //lál[-?-]t-ás-t// /laltást/
 [lál?tást] 'splashing him'
 //čáwa-sat// LD /čák-wasat/, VU /čák-wasat/ 'to show off' vs.
 //čáw[-?-]-sat// LD, VU /čáwat/ [čáw?st] 'showing off'

3. see the examples in 2 just above

4. /máq/ 'full (of stomach), satiated (with food)' vs. LD /nəqé-t/,
 VU /nqé-t/ [nqét] 'swallow it'

5. //s-iénay-?// /siény/ 'lady, woman' vs. //s-iénay-áá//
 /siénačá-á/ 'girl (around 14)'
 //wín-tal// /k'íntal/ 'they fought' vs. //wí[-C-ə-]n-tal// +
 continuative' glottalization → //wíw[-?-]en[-?]-tal[-?]/
 /k'iwéntal/ [k'íwén?tal?] 'they're fighting' (shows that the
 reduplication is infixes first, then the glottal stops after each
 resonant (stopping the second w from becoming kw), then rule 5
 is applied after all infixing; an alternate analysis would have the
 root be //k'ín// 'grab' (cf. /k'én-at/ 'grab it', /k'én-nex//
 'hold it, take it') + //-tal// 'reciprocal' but requiring rule 5
 to also work in the reverse, /k'w/ → /w/ before consonant or pause;
 the second treatment seems to be historically accurate since the
 root has /k'w/ in all three words in non-Straits cognates)
 //qíw-en// /qík-wen/ [qé-kw-en] 'rested' vs. //s-qí[-?-qə-]w[-?]/
 /sqí?qəw/ [sqí?qəw?] 'be resting' (resultative/durative aspect)
 //čáwa-s// /čák-was/ 'use it' vs. //čá[-?-á-]w[-?-]-s// /čá?áwas/
 [čá?á?was] 'using it' (note that the non-continuative form probably
 had a stage /čák-was/ then deleted /ə/ due to rule 8; the continuative
 on the other hand kept the /w/ due to insertion of /?/, converted it to
 /w/, then added an epenthetic /ə/; or the continuative followed the
 pattern of resonant in continuative; aspect in Straits is often very
 complex phonologically)
 //séwa-s// VU /sékw-as/, LD /sékw-as/ 'put it down' vs. //sé[-é-]w[-?-]-s//
 /se?é?was/ VU [se?é?was], LD [se?é?was - se?é?was] 'putting it down'
 //má-y-t// /máčt/ 'aim it' vs. VU //s-má[-?-ma-]y-t-en// /smámaytn/,
 LD //s-má[-?-ma-]y-t-en// /smámaytn/ 'it was aimed' (resultative

aspect, note different reduplication and /?-infix pattern)
 //ná-y-en// /náč-en/ 'to laugh' vs. //na-náy-en[-?]/ /nanáy-en/
 'laughing' (note prefixed continuative reduplication for this root)

6. see all of the examples found so far, in 1.1.3, argument 2.

7. see examples in 5 and 6 above

8. A number of examples have been given in section 1; a few more are
 'use it' and 'put it down' in 5 above, as well as:
 VU /sléčel/, LD /sléčel/ 'it is full'
 VU /ənétx-was/, LD /ənétx-was/ 'mother's brother's wife'
 VU /šíp-et/, LD /šípt/ 'sharpen it'
 VU /šépxtas/, LD /šépxtas/ 'he's/she's scattering it'
 TB /sčéliq-wi/ 'berry', (LD, VU hadn't heard this word, used
 /s?éitenn/ 'berry')

In reviewing the field notes I notice that VU is more likely to apply
 this rule when LD was not present, i.e., when he alone was responsible
 for reporting the Samish form. For example, VU alone July 12, 1984
 /náq-wi/ [nóc-wi] 'asleep', but June 12, 1985 VU /náq-wi/, LD /náq-wi/
 'asleep'. In a few places he gave forms without the /ə/-deletion
 as Saanich and forms with deletion as Samish. For example, VU Saanich
 /čák-wat/, VU Samish /čák-wt/ 'wash it'. If this is indeed a differ-
 ence between Saanich and Samish, then VU may have let this effect
 of a Saanich accent slip into his Samish when LD was present and
 giving what he said was real pure Samish.

9. no attestations

10. VU /páwi? - péwéy/ 'flounder (the fish)'
 /páyšéč/ 'fir cone, pine cone'
 /čéli? - čálay/ 'bark of fir or balsam'

11. Historically, it is not clear whether the echo vowel was
 present in Proto-Central Salish and lost in some languages or absent
 in Proto-Central Salish and added in some languages (Galloway 1982:81,84,
 109 proposes that both may have happened in different forms). More
 examples need to be found to tell whether Samish has a synchronic rule
 adding echo vowels or not.

12. see also the examples for 10, above.

13., 14., 15. no further examples to add.

16. LD /ənšéélenex- - ənšéélenex/, VU /ənšéélenex/ 'butter'

LD /ʔeítələŋəx/, VU /ʔeítələŋəx/, TB /ʔeítələŋəx - ʔeítələŋəx/
 'person'
 LD /stələŋəx/, VU /stələŋəx/ 'medicine'
 LD /nənəŋəneʔ/, VU, TB /nənəŋəneʔ/ 'sons and daughters, many offspring'

17. /xəxáʔčeʔ/ 'small lake' vs. /xáčeʔ/ 'lake'
 LD /stítíqíwáí/, VU /stítíqíwáí/ 'colt' (vs. VU /stíqíw/ 'horse')
 /skʷəkʷá(?)təʔ/ 'crow' vs. /skʷtáʔ/ 'raven' vs. /skʷeləkʷáʔtəʔ/
 'lots of crows'
 LD /nən stəítələw/ [nənʔstəlʔtáʔləwʔ] 'lots of rivers' vs.
 /nən stáʔtələw/ [nənʔstáʔtəʔləwʔ] 'lots of creeks' vs.
 VU /stáləw/ 'river'
 LD /əqəqəqən/, VU /čəqčəqən/ 'it's dripping lots' vs. LD /əqəqən/,
 VU /čəqəqən/ 'it dripped'
 VU /qənqən/ 'thief' vs. VU /qən/ 'to steal'
 VU /sələsələs/ 'lots of hands' vs. VU /sələs/ 'hand'
 //p[-əl-ʔ-]íʔ-peš-peš// /pelíʔpešpeš/ 'lots of kittens' vs.
 VU /pišpiš/ [pišpiš] or /pəšpəš/ [pišpiš] - LD, VU /piš - pəš/
 [piš - piš] 'cat' (probably < Chinook Jargon). Note the use of
 probably 'characteristic' suffixed derivational reduplication -CəC-,
 probably prefixed Cíʔ- 'diminutive' plus infix -əl- or -əl-
 '(collective) plural' plus diminutive glottalization of resonant
 (if infix is -əl-) in that order.

18. LD /ʔíčən/, VU /ʔíčən/ 'get dressed' vs. LD /ʔečən/, VU
 /ʔečən/ 'getting dressed'
 VU /ʔámət/ 'sit down, sit up' vs. VU /ʔámət/ 'sitting down' vs.
 VU /ʔaʔámət/ 'little child sitting (up or down), sitting by oneself
 lonely' (diminutive reduplication + continuative ablaut) vs.
 VU /ʔemáttx/ 'seat somebody' (metathesis +/-or ablaut and stress
 shift)
 VU /tənət/ 'line them up, pile them up' vs. VU /sténeí/ 'all lined
 up'
 VU /ləqəsət/ 'make oneself even, line oneself up (of canoe when one
 is in it for ex., race canoe, people, etc.)' vs. VU /sléqəí/ 'even'
 VU /ʔəčəqsət/ 'dodge something' (-sət 'purposive reflexive, full
 control') vs. VU /ʔəyēqt/ 'change something' (-t 'purposive full
 control transitivizer')
 /kʷənət/ 'grab it' vs. /kʷənət/ 'taking it, holding it'
 (the last four examples show 'durative aspect')
 VU /čsétəŋən/ 'I got hit (by something thrown)' vs. VU /čsétəŋən/
 'I'm getting hit'
 /səxt/ 'push it' vs. /səxt/ 'pushing it' ('continuative aspect' is
 shown in the last two [and others above] by stress shift + metathesis)

19. see examples in 2, 5, and 17 above.

20. LD /əxtn/, VU /čəxtən/ 'poison [nominal]' vs. LD /əxtenít/,
 VU /čəxtenít/ 'to poison someone'
 /míə/ 'to spirit dance' vs. VU /míəhéwtx - míəʔéwtx/, LD
 /míəhéwtx/ 'spirit dance house'
 /qʷeyíləš/ 'to dance' vs. VU /qʷeyíləšewtx/, LD /qʷeyíləšewtx/
 'dance hall' (note the strong root stress on /i/ does not change
 even in the presence of stress-attracting //əwtx//)
 /kʷélqən/ 'down feather' vs. /skʷélqən/ 'feather bed' vs. VU
 /skʷélqən/, LD /skʷélqən/ 'cushion' (note 'diminutive' Cí-
 attracts stress away from stressed derivational suffix -élqən)
 (note 'diminutive' glottalization of /n/ in both 'down feather'
 and 'cushion')

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21st International Conference on Salish and Neighboring Languages, Seattle

Color Categorization in Shuswap, Chilcotin, Kwak'wala, and Makah: A Description

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Introduction

The intention here is to describe and to compare data concerning color categorization from four Pacific Northwest languages: (1) Shuswap, (2) Chilcotin, (3) Kwak'wala, and (4) Makah, which represent Salishan (1), Athapaskan (2), and Wakashan (3-4).

The data were collected in August and September of 1985 according to three independent procedures of elicitation, each based on 330 Munsell colors as a direct stimulus and standard of measurement. The procedures and stimulus materials are described in a theoretically oriented account of the same data (MacLaury 1987: Note 2).

Table 1 outlines the three elicitation procedures and the order(s) of data that resulted from each:

Table 1	
<i>Procedures</i>	<i>Data</i>
1. Naming. 330 separate color chips are named in a fixed random order.	1a. Naming Ranges of color-term roots. 1b. Modifiers of roots.
2. Focus Selection. A "best example" of each term is chosen on an array of the 330 chips.	2. Foci.
3. Mapping. Each term is mapped on the array with rice grains, usually in steps in response to repeated requests to map all of X-term.	3a. Mapping Ranges. 3b. Mapping Steps within mapping ranges.

Correspondence between different data from an individual verifies their accuracy.

Figs. Øa-d present derandomized naming ranges and foci in the format of the Munsell array. The unnumbered column at the left displays white-grey-black and columns 1-40 display prismatic hues from left to right, lightest at top and darkest at bottom. The break between columns 40 and 1 is artificial, as hue composes a circular band. Fig. Ød provides the English speaking reader with a reference by which to gauge the Munsell system and to assess how other languages have named it. Fig. Øa shows naming ranges from a Shuswap speaker, who designates yellow and green with one term. Fig. Øb shows naming ranges from a speaker of Apache, an Athapaskan language of the American