SKOKOMISH PHONOLOGY I:

Vowels, Semivowels and Labialized Consonants

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It seems only fitting that Gaberell Drachman's work on Twana be closely examined since it is so important in the area of Salish phonology. This paper will view a limited amount of phonological data, judge the adequacy of the set of rules presented in Drachman (1969)[1] to handle those forms, and revise and extend those rules, if need be. The discussion here mainly concerns itself with stress and its interaction with the alternation between vowels, semivowels and labialized consonants. Drachman describes this alternation, between vowel and semivowel, as being the "syllabification of semivowels" (Ibid.:176). I will show, in opposition to Drachman, that a process which desyllabifies vowels is necessary. This is not to claim, though, that a process of syllabification is not otherwise present in the language.

The first set of forms examined here have in common the root for 'salmon backbone.' The prefix *duxʷ-* has the general meaning 'place' and the prefix *c*t-*[2] 'people.' The suffix which generally appears as *-(a)bIɬ**[3] has the meaning 'people of.'

DATA A.   KuKu'KW   "salmon backbone" (WE60 and LP)

           KuKu'b   "eat salmon backbone" (WE60)

           duxWKu'KWapঌ*   "where they eat backbones of salmon"

                                  or, more literally, "place of salmon

                                  backbone people" This refers to

                                  Mission Creek and a winter village

                                  at its mouth. (WE60 and LP)

           duxWKuKWa'bঌ*   (LP)

                                  While these latter two forms are

                                  in free variation, LP does not

                                  accept the following forms:

                                      duxWKuKu?a'bঌ,

                                      duxWKuKWa'bIঌ,

                                  and *duxWKWKWa'bIঌ*.

           c*ɬduxWKu'KWapঌ*   "Duhlelap Twana" or, more literally,

                                  "people of duxWKu'KWapঌ*." (WE60)

DATA B.   ঌi:'dakW   "bay, salt water" (LP)

           ঌi'dakW   (WE60)

           ঌi:'dakWb3ঌ*   "salt water peoples" (WE60)

           qW3ℓ?ঌi'd   "Quilcene" (LP)

           qW3ℓ?ঌi'd3b3ঌ*   "Quilcene Twana people" (WE60)

           qW3ℓ?ঌi'd3bঌ*   (LC)

           ঌpu?ya'ℓap   "Puyallup" (LP)

           pu?ya:'ℓap   (LC)

ꞩpuʔya'ꞥapabꞩ*	"Puyallup"	(GD69)
c*ɬpuʔya'ꞥap	"the Puyallup tribe"	(GD69)
c*ɬxW3nʔtu'ꞥapꞩ*	"Humptulips people"	(WE60)
duxWduwa:'bIꞩ*	"Duwamish"	(LP)
c*ɬduxWduwa'b3ꞩ*	"Duwamish people"	(WE60)

From the examples in Data A and B, we can see that b and p occur in free variation in the suffix for 'people.' This alternation between voiced and voiceless stop also occurs in the suffix -c*Id, 'I.' For example:

DATA C.

LIꞩʔi'Ladc*Id	"I'll eat."	(LP)
LIꞩʔi'Ladc*It		(LP)
bixWiQWi'c*Id	"I am shining it."	(LP)
bixWiQWi'c*It		(LP)

LIꞩ-	hypothetical aspect marker
bi-	continuative aspect marker

This optional devoicing does not apply to all occurrences of voiced stops however. It never applies to the d in the root for 'eat,' -iLad- (see Data C), or in 'place,' duxW- (see Data A and B), or to the b in "eat salmon backbone," KuKu'b. An attempt will be made at a later time to clearify this aspect of the language.

From the examples provided in Data A, all of which contain the root 'salmon backbone,' there is an indication that a rule is needed which, in specific environments, converts u to W, W to u,

and/or delabializes a labialized, back consonant. Drachman (1969: 174-5) does not have rules for devoicing, initial stress placement or converting vowels into semivowels. He does indicate though that the initial placement of stress must precede his rule number two, which shifts stress in one class of words. His rule number twenty-three is the syllabification of semivowels before obstru-[4]ents.

Considering for now the two forms *KuKu'b*, "eat salmon back-bone," and *duxWKu'KWaps**, "Mission Creek," which exhibit a conso-nant plus vowel vs. labialized consonant alternation, what are the possible underlying forms for the root 'salmon backbone'?[5]

CHART I.

1. /KuKu-b/   /dxW-KuKu-abs*/
2. /KuKW-b/   /dxW-KuKW-abs*/
3. /KuKw-b/   /dxW-KuKw-abs*/
4. /KWKu-b/   /dxW-KWKu-abs*/
5. /KWKW-b/   /dxW-KWKW-abs*/
6. /KWKw-b/   /dxW-KWKw-abs*/
7. /KwKu-b/   /dxW-KwKu-abs*/
8. /KwKW-b/   /dxW-KwKW-abs*/
9. /KwKw-b/   /dxW-KwKw-abs*/

Drachman (1969:270-9) lists CVC, CCVC, CVCC, CVCVC, CVCCVC and C(V)CVCVC as underlying configurations of Skokomish roots.[6] Of the nine possible underlying forms for 'salmon backbone,'

listed above, only (2) *KuKW* and (3) *KuKw* match one of these root
shapes. He, in fact, rules out the possibility of (5) *KWKW*,
(7) *KwKu*, (8) *KwKW* and (9) *KwKw* as underlying 'salmon backbone':
"Probably without exception, CVC is the minimal shape for a
stem" (Ibid.:270). If it is a non-duplicated root, we have
(2) *KuKW* and (3) *KuKw* to choose between.

The appearance of the root for 'salmon backbone' is one
which suggests it to be a nonproductively duplicated form, called
a "reduplicating stem" by Drachman (Ibid.:279). He does not list
any restrictions or regularities as to the underlying shape of
such stems. Examples of these words in the language include:

DATA D.

sisi:'d	"big"	(LP)
pi's*ps*	"cat"	(LP)
Ka'K3	"crow"	(LP)
hOho'?	"many"	(LP)
ka'wkaw	"goose"	(GD69)
qWi'qWay	"necklace"	(GD69)
X3'bX3b	"Hamma Hamma River"	(GD69)
X3ℓ3'w?X3ℓ3w?	"a small, white butterfly"	(GD69)
XWay?3'XWay?3XW	"fly" (insect)	(GD69)
sba'qbaq	"horsetail rush"	(WE60)
b3'KWb3KW	"sooty grouse"	(WE60)

If 'salmon backbone' is an example of nonproductive duplication
the underlying form would have to be (1) *KuKu,* (5) *KWKW* or (9)

KwKw.

CHART II.

A.　　/KuKW-b/　　　　>　　　[KuKu'b]

　　　/dxW-KuKW-abs*/　>　　[duxWKu'KWaps*]

B.　　/KuKw-b/　　　　>　　　[KuKu'b]

　　　/dxW-KuKw-abs*/　>　　[duxWKu'KWaps*]

Is the distinction between an underlying *KW* and an underlying *Kw* **sequence** a real one? Is there a reason for selecting one over the other? I believe so. A rule, or pair of rules, which changes *KW* to *Ku* (see part A of Chart II) is more costly to the grammar than a rule which changes *w* to *u* and a low level rewrite rule which changes the sequence *Kw* to *KW* (see part B of Chart II). The placement of a change in the portion of rules called rewrite rules is a way of saying that it is a universal rule in nature and thus of no cost to the grammar. That is, the sequence of back consonant plus *w* becoming a labialized consonant is not just a fact of Skokomish but of all languages.

The following examples show that such a low level rule is already motivated for forms in Skokomish where there is no alternation.

DATA E.

CIXqWiL[7]	"northern type canoe"	(WE60)
sTIKe'd	"Alaskan Indian"	(WE60)
TIKe'd3wIL	"Alaskan Indian canoe"	(WE60)
duxWLq0'ℓw3Lb3d	"canoe bailer"	(WE60)
-wiL	'conveyance, vehicle' (lexical suffix)	
duxW...b3d	'thing used for, instrument'	
qo	'water' (root)	

Thus, (2) KuKW and (5) KWKW should be ruled out as possible underlying forms for 'salmon backbone.' We are then left with (1) KuKu, (3) KuKW and (9) KwKw as possible underlying forms.

Presuming a rule of syllabification and the absence of a rule of desyllabification, as Drachman does, necessitates underlying forms with W's where there is an alternation between a W and a u. Generally, the initial stress placement rule places stress on the vowel of the second syllable when that vowel is part of the root. At times, though, lexical suffixes receive the stress instead of the second syllable (see the free variation for "Mission Creek" in Data A). The following is a simplified version of the initial stress placement rule.

STRESS PLACEMENT RULE:

$$V \rightarrow V' \ / \left\{ \begin{array}{l} (\underset{lex.suf.}{[\_C)} \\ \#\#C_0VC_0 \ \underline{} \\ +root \end{array} \right\}$$

In forms such as *KuKu'b,* "eat salmon backbone," the alternating
syllable and the stress occur on the same segment. (In the data
which Drachman presented (1969), there are no examples in which
stress occurs on the same syllable as the vowel-semivowel alter-
nation. He therefore did not confront this problem.)

In order to posit underlying *w*'s however (see Chart II, part
A), one must also complicate the main stress rule by allowing the
stressing of semivowels in certain environments, positing cyclic
rule applic rule application with no other basis for it in the
language, or allowing the addition of an ad hoc stress shift rule.
If the grammar is more powerful than it needs to be then the
language is not being adequately described. Therefore, none of
these choices seems to be acceptable, given the present knowledge
of the Skokomish language. All of this suggests the need to
examine a rule of desyllabification.

The absence of sequences such as *-cWa-, -ʌ*Wa-, -CWa-* and
-bWa- suggests that the consonant in the environment of the
desyllabification rule must be restricted to include only non-
rounded, velar and postvelar stops and fricatives. Also, there is
an absence of word final sequences of the form: back, unrounded
consonant plus unstressed, back, rounded vowel. This suggests that
the environment for such a desyllabification rule is not only be-
fore a vowel but also in word final position. Alternations such as
the one between *aʌPu'QW,* "it is raised" (*aʌ-* is the stative aspect
prefix), and *3ʌPuQoʔo"ɫbIʌ*duxW,* "it is raised" (said of spaded

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dirt), suggest that the vowel in the environment of the desyl-labification rule must be a non-round vowel.

DESYLLABIFICATION RULE:

$$\begin{bmatrix} V \\ +back \\ +round \\ -stress \end{bmatrix} \quad [\text{+vocalic}] \quad / \begin{bmatrix} C \\ +back \\ -round \end{bmatrix} \underline{\hspace{1cm}} \left\{ \begin{array}{c} \#\# \\ V \end{array} \right\}$$

With a desyllabification rule u's are then posited as under-lying the alternating segments. In the following sample deriva-tions the root for 'salmon backbone' is given as a nonproductively duplicated form.

SAMPLE DERIVATIONS:

	/KuKu-b/	/dxW-KuKu-abʌ*/
1. stress placement	KuKu'b	dxWKu'Kuabʌ*
2. vowel insertion	- - -	duxWKu'Kuabʌ*

(Sthwa is inserted between certain consonants while a u is inserted should the second consonant be a labialized, velar or postvelar fricative.)

3. desyllabification	- - -	duxWKu'KWabʌ*
4. devoicing	- - -	duxWKu'KWapʌ*

(see earlier discussion above)

	KuKu'b	duxWKu'KWapʌ*
	"eat salmon backbone"	"Mission Creek"

Acknowledgements

Footnotes

1. The reason I use Drachman's work as a starting point is two-fold: he has made many good and sometimes brilliant observations and analyses and his main informant, Louisa Pulsifer, has been my main source of information since I began my fieldwork in February 1975.

2. The orthography used here is one which I have developed to accomodate the Skokomish language not only as a practical alphabet for language learning by tribal members but also one which lends itself to computer use, as well as the ordinary typewriter. A brief description of the symbols used is given below. Note especially: $s^* = \check{s}$, $2 = \check{\lambda}^{\prime}$, $T = \mathring{t}$, $L = \l$ and $c^* = \check{c}$.

Vowels: i   u   i as in "mitt"   O as in "caught"
       I   U
       e   o   A as in "mat"   3 as in "mutt"
       E 3
       A a O   E as in "met"   U as in "put"

Consonants:

voiceless	p	t	c		c*	k	q	
labialized						kʷ	qʷ	
glottalized	P	T	C	2	C*	K	Q	?
labialized						Kʷ	Qʷ	
voiced	b	d						
nasal	(m)	(n)						
fricatives			s	L	s*	x	X	h
labialized						xʷ	Xʷ	
	w			l	y			

In the above chart, two adjacent symbols indicate a single sound, the same as those composed of a single letter. Nasals appear in very few words, and then as the result of diminuative consonant symbolism.

(WE60), (GD69) and (GDn.d.) are used as abbreviations for Elmendorf (1960), Drachman (1969) and Drachman's fieldnotes, respectively. Words elicited by myself from Lee Cush are marked (LC) and those from Louisa Pulsifer (LP). Other conventions employed are the use of " to set off the gloss of a phonetic form and ' for an underlying or unattested form. Drachman's o and e have been changed to u and i, as the latter two vowels are the more common.

3. Historically, Skokomish *b* and *d* come from *m* and *n*, respectively. Nasal consonants are found in other nearby Salish languages, such as Klallam.

4. Drachman's rules are not provided here for two reasons: 1) most do not enter into this particular discussion and 2) most do not have a final, definate form and are best described verbally, rather than in rule form.

5. Here Drachman assigns *w* and *y* the shape C while elsewhere he describes them as being semivowels and lists them as non-consonantal (e.g. p.240). Thus, C here translates as a *non-vowel*.

6. Drachman lists "salmon backbone" as a reduplicating stem, The form, *KuKu'KW*, contains an additional syllable or consonant though. As yet I haven't ascertained the morphological purpose of this reduplication. Compare: *xWa:'kWkW* "*breathe*" (LP) and *CiqWi'qW*, "blue elderberry" (WE60).

7. The *X* here is an intrusive element which is apparently inserted optionally between a high front vowel and a back consonant.

8. The back vowel *O* is not an underlying segment. Logically, the lowering process which creates an *O* would follow a desyllabification rule.

The following data further suggests that the desyllabification rule might not be applicable should the second vowel in the rule also be round. It is unclear here though whether a labialized consonant is delabialized before a round vowel or *o* or *w* is deleted

revision: a labialized consonant is labialized before

w or u.

between a non-rounded, back consonant and a round vowel.

yIQW3'b	"washing clothes"	(GDn.d.)
*yIQWa':c*Ib*	"washing hands"	(GDn.d.)
*y3QWʌ*a'dab*	"wash your feet"	(LP)
y3QWa'yʌ3b	"wash your eyes"	(LP)
y3QWa'qʌ3b	"wash your nose"	(LP)
yIQo'ʌa:b	"washing face"	(GDn.d.)
y3Qo'ʌab	"wash your face"	(LP)

-oʌ	'face, bluff' (lex. suffix)
*-ac*i*	'hand, lower arm' (lex. suffix)
*-ʌ*ad*	'foot, lower leg, support' (lex. suffix)
-aqʌ	'nose, point' (lex. suffix)
-ayaʌ	'eye, soft round thing' (lex. suffix)

(I have made no attempt to standardize the glosses here. The Sko-komish words themselves are ambiguous, to a large extent, as to person.)

References

Drachman, Gaberell 1969. Twana phonology, *Working Papers in Linguistics* No. 5, Ohio State University, Columbus.

        n.d. Unpublished fieldnotes.

Elmendorf, William 1960. The structure of Twana culture, *Washington State University Research Studies*, Monograph Supplement No. 2, Washington State University Press, Pullman.

        n.d. Unpublished fieldnotes.

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Revisions

pages 2 and 3   Revise Data B to read:

DATA B.

ŝi:'dakW	"bay, salt water"	(LP)
ŝi'dakW		(WE60)
ŝi:'dakWb3ŝ*	"salt water peoples"	(WE60 & LP)
qW3ℓ?ŝi'd	"Quilcene"	(LP)
qW3ℓ?ŝi'd3b3ŝ*	"Quilcene Twana people"	(WE60)
qW3ℓ?ŝi'd3bŝ*		(LC)
ŝqW3ℓ?ŝi:'d3bIŝ*		(LP)
ŝpu?ya'ℓap	"Puyallup"	(LP)
pu?ya:'ℓap		(LC)
ŝpuy?a'ℓap3bŝ*	"Puyallup people"	(LP)
ŝpu?ya'ℓap3bŝ*		(LP)
c*ťpu?ya'ℓap	"a division of the Puyallup"	(LP)
c*ťxW3nťu'ℓapŝ*	"Humptulips people"	(WE60)
duxWduwa:'bIŝ*	"Duwamish people"	(LP)
c*ťduxWduwa'b3ŝ*	"a division of the Duwamish"	(WE60)
c*ťduxWduwa:'bIŝ*		(LP)

page 3   Read LIŝ?i'La:c*Id and LIŝ?i'La:c*It for "I'll eat." Also,

bixWi'QWic*Id is the correct form for "I am shining it."

page 4   In Chart I, revise column 2 to read duxW- instead of dxW-.

page 5   Revise Data D to read as follows:

DATA D.

sisiⁱ ˢd	"big"	(LP)
piˢˢ*pˢ*	"cat"	(LP)
KaˢK3	"crow"	(LP)
ħOˢħo?	"many"	(LP)
hoˢħo?		(LP)
kaˢwkaw	"goose"	(LP)
qⱳiˢˢ3qway	"blue trade beads"	(LP)
duxⱳX3bXaˢbay	"Hamma Hamma River"	(LP)
X3ˢbX3b	"horsetail rush ~~tops~~ roots"	(LP)
X3ℓaˢw?X3ℓaw?	"butterfly"	(LP)
Xwaˢy?3XwXway?3Xⱳ	"a fly"	(LP)
sbaˢqbaq	"horsetail rush"	(WE60)
sbaˢq3baq		(LP)
b3ˢkⱳb3kⱳ	"sooty grouse"	(WE60)
sb3ˢkⱳb3kⱳ		(LP)

page 6   Revise /dxⱳ- to read /duxⱳ-.

page 7   Revise Data E to read as follows:

DATA E.

CIXqwiL[7]	"northern type canoe"	(WE60)
sTIKeˢd	"Alaskan Indian"	(WE60)
sTiKeˢd		(LP)

TIKe'd3wIL	"Alaskan Indian canoe"	(WE60)
duxWLq0'ℓw3Lb3d	"canoe bailer"	(WE60)
duxWLqo?o'ℓw3Lb3d		(LP)
-wîL	'conveyance, vehicle'	
	(lexical suffix)	
duxW...b3d	'thing used for, instrument'	
-qo-	'water' (root)	

page 8 Delete the first two words of line 9.

page 9 Add a directional arrow to the desyllabification rule.

In the sample derivation, revise all /dxW- to read /duxW-.

page 10 Into the last sentence insert *4 = ƛ*, which appears

phonetically but not as an underlying segment.

page 11 Add *4* to the chart between c and c*.

page 12 In footnote 4, read "definite" not "definite."

Also, add the following:

Drachman's (1969:115,181, 182) semivowel

can be stated as:

$$\begin{bmatrix} -\text{cons} \\ +\text{son} \end{bmatrix} \rightarrow [+\text{syll}] \Bigg/ \Bigg/ \left\{ \begin{bmatrix} -\text{cons} \\ -\text{syll} \end{bmatrix} \\ [-\text{syll}] \\ (\#) \right\} \Bigg/ \Bigg| \begin{bmatrix} -\text{cons} \\ -\text{syll} \end{bmatrix} \\ [-\text{syll}] \\ [-\text{syll}] \Bigg|$$
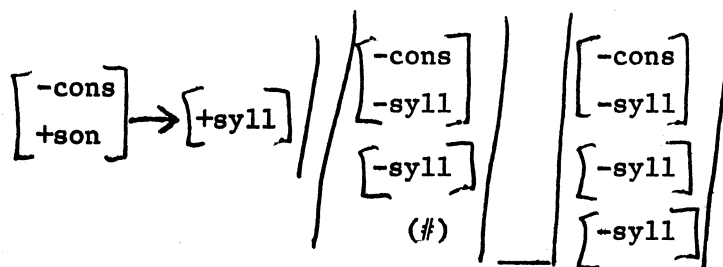
Correct "blue elderberry" to read *Cî'qWîqW*.

The following should be added after page 9.

If the process described here is one which desyllabifies vowels, one should expect to find forms with an *i/y* alternation. Note in Data D that *qᵂi'qᵂay*, "trade beads," exhibits the *i/y* alternation to an extent, although it is in the *i/ay* alternation common to the lexical suffix *-i*, 'living thing.' An example does exist which is a member of the set provided in Data D, has a *u/w* alternation and has an *i/y* alternation: *sku'ykᵂi*, "marmot" (LP and WE n.d.).

A closer look at Data D reveals that there are two types of forms exhibited there. One group, which includes "trade beads" and "marmot," has total duplication. This group does not conform to the previously stated stress rule. The other group, which consists of forms such as "big," has only partial duplication and does conform to the stress rule.

Two explanatory choices come to mind:

    a. totally duplicated forms have the root occuring to the left of the duplicated segment while partially duplicated forms have the reverse ordering,

or b. there is a rule which shifts stress in totally duplicated forms onto the first half of the word.

At the present time, the first of these two choices seems to be preferable.