

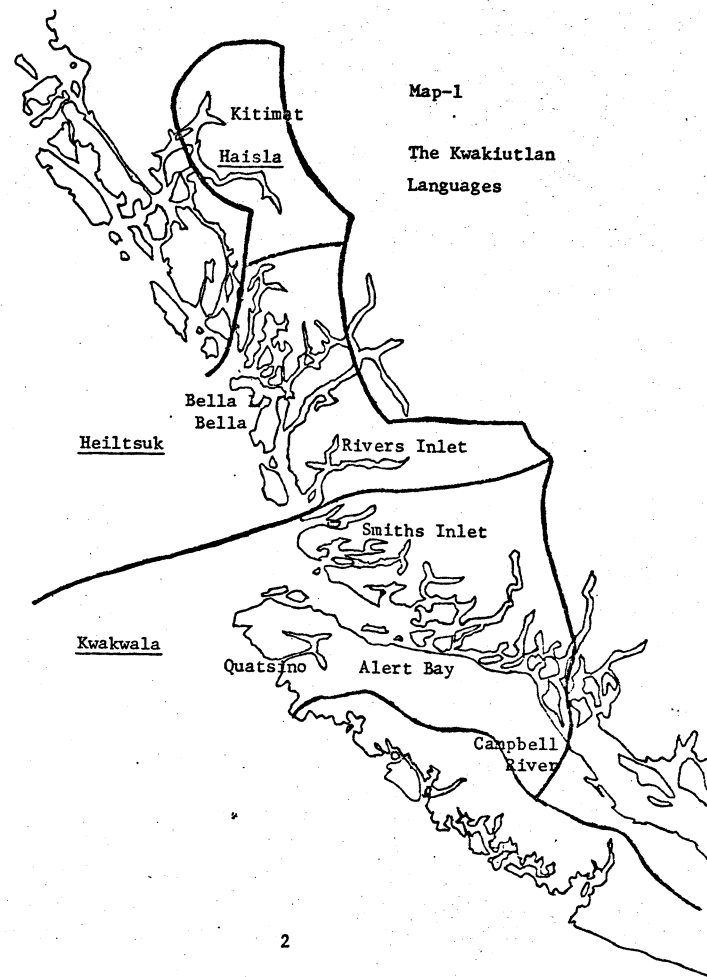
Syllable Structure in  
Kwakwala and Heiltsuk

by

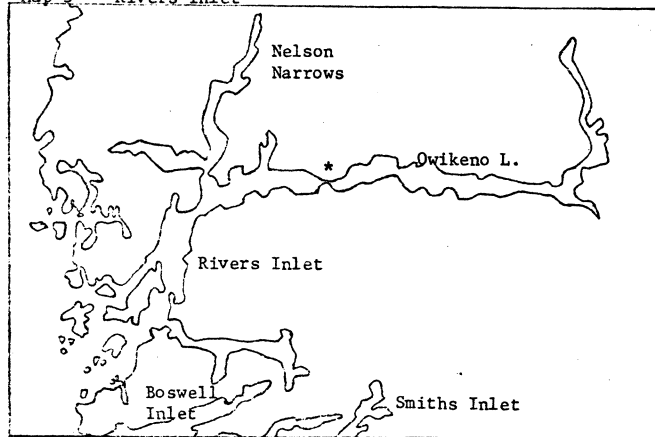
Peter J. Wilson

This paper presents a distributional syllabic analysis of Kwakwala and Heiltsuk, two languages of the Kwakiutlan, or Northern, branch of the Wakashan language family. Kwakiutlan is comprised of three languages in all: Kwakwala, extending from Campbell River northward to Quatsino Sound on Vancouver Island and to Smiths Inlet on the mainland; Heiltsuk, located at Rivers Inlet, Bella Bella, and Klemtu; and Haisla, located around the area of Kitimat (see Map-1).

The data for this paper come from the Quatsino dialect of Kwakwala, located on the West Coast of Vancouver Island in Quatsino Sound (see Map-2), and the Rivers Inlet dialect of Heiltsuk, located on the West Coast of the British Columbia Mainland in Rivers Inlet (see Map-3). I wish to thank nalasg̃am, Mrs. Alice Peters, originally from Quatsino and now living in Alert Bay, and Mrs. Hilda Smith, originally from Rivers Inlet and now living in Port Hardy, for their collaboration in this work. In addition, I owe a debt of gratitude to Mrs. Freda Shaughnessy and Mrs. Pauline Alfred for

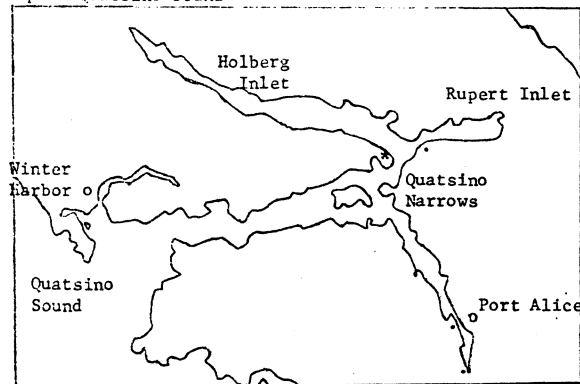


Map-3 Rivers Inlet



\* Main Reserve, • Fishing Camps, ° Towns.

Map-2 Quatsino Sound



3

assisting me throughout the research.

The syllable, a linguistic construct that has phonetic manifestation and, in most languages, phonological function (Malmberg 1961, p. 98), has been studied for several years and approached from a variety of different strategies.<sup>1</sup> Several recent works have shown, in addition, that the syllable can provide more natural phonological descriptions, especially with regards to phonotactics and stress assignment (see, for example, Lehiste 1969, Hoard 1971, Hooper 1972 and 1976, Vennemann 1972b and 1974). In this paper, therefore, I present a preliminary syllabic analysis of Kwakwaka and Heiltsuk in order to demonstrate that the syllable is a phonologically viable unit for both languages.

Defining and segmenting syllables, however, poses numerous difficulties, primarily due to the fact that there does not appear to be a physiological or acoustic basis to syllables at the moment. I define and segment syllables, therefore, on the basis of distribution, similar to O'Conner and Trim (1953). Essentially, the distributional analysis is based on the proposal that "combinations of consonants are to be split up only if the clusters so formed do not depart too far from the normal patterns of the language" (Togebly 1973, p. 294). The most indepth work following this practice to date was presented by O'Conner and Trim (1953) on English.

4

O'Conner and Trim regard the syllable as a structural unit which "most economically" expresses the combinations of vowels and consonants in a language (1953, p. 105). Following from this basis, they define a syllable as a combination of phonemes with a vowel nucleus which may be preceded or followed by a consonant or consonant cluster. The strategy which they use to isolate syllables in a language is to first determine the possible phoneme combinations in words with a minimal pattern of phonemes, i.e., a word with a vowel nucleus optionally preceded or followed by consonants. Words with longer sequences are then assumed to consist of a series of syllables which are divided on the basis of the phoneme distribution in words with minimal patterns. Words which do not fit into such analysis, such as erə - where all possible segmentations result in patterns which are not found in words with minimal patterns (e rə or er ə), are segmented on the basis of analogous words. In the above example, the authors segment 'era' as V CV on the basis of other VCV sequences.

#### Phonology of Kwakwala and Heiltsuk

Kwakwala and Heiltsuk are very similar in many respects to the other Wakashan languages. In morphology they are polysynthetic and suffixing, except for prefix reduplication which is found, for example, in the formation of plurals, continuatives, and diminutives.

The sound systems of the two languages are almost the same, possessing the same consonant inventory and vowels. Briefly, there are three series of stops and affricates: voiceless / p t c ʔ k kʷ q qʷ ʔ /; glottalized / p̣ ṭ c̣ ʔ̣ ḳ ḳʷ̣ q̣ q̣ʷ̣ /; and voiced / b d dʲ λ g gʷ ǰ ǰʷ /; a series of voiceless fricatives / s i x xʷ ʃ ʃʷ h /; two series of sonorants; plain / m n l y w /; and pre-glottalized / ṃ ṇ ḷ ỵ ẉ /. The segments which are written as / ḳ ḳ g x / are pronounced as palato-velars [ kʲ kʲ gʲ xʲ ], except in Heiltsuk, where they are de-palatalized preceding round vowels, as exemplified below:

Rivers Inlet	gik	[ gʲikʲ ]	"tooth"
Rivers Inlet	gukʷ	[ gukʷ ]	"house"
Kwakwala	gigi	[ gʲigʲi ]	"tooth"
Kwakwala	gukʷ	[ gʲukʷ ]	"house"

Both the Quatsino dialect of Kwakwala and the Rivers Inlet dialect of Heiltsuk have the same six vowel system: / i e a ə o u / . Vowel length is not distinctive, although longer vowels occur phonetically in monosyllabic words and in stressed syllables. In both languages, vowels do not occur in word-initial position and always separated by at least one consonant.

Rivers Inlet and Quatsino differ in two important ways: one, Rivers Inlet allows word-initial consonant clusters whereas Quatsino

does not; and two, stress is not predictable in Rivers Inlet while it nearly always is in Quatsino. As will be noted later, these distinctions are significant for the development of a syllabic analysis of these two dialects.

#### Kwakwala - Quatsino dialect

Monosyllabic words in Kwakwala, i.e., words with a minimal pattern of phonemes, are either open, CV, or closed, CVC<sub>1</sub><sup>2</sup>. At present, I have noted up to two consonants in final position in the Quatsino dialect. The following examples illustrate the different phonological shapes of monosyllabic words.

#### CV

m̩	four
m̩e	fish
w̩a	river

#### CVC

k <sup>w</sup> əx̄	flour	n̩əm	one
k <sup>w</sup> ix̄ <sup>w</sup>	eagle	tox̄ <sup>w</sup>	tough
x̄aq	bone	w̩ač	dog
qet	hat	kos	no

#### CVCC

soms	mouth	k <sup>w</sup> əls	lie down
g <sup>w</sup> ast	tears	d <sup>z</sup> əl̩x̄ <sup>w</sup>	to run
t̩ənc̩	a plant	yutx̄ <sup>w</sup>	three

Monosyllabic words in Quatsino, therefore, conform to the following syllable structure constraint (SSC):

SSC: # C<sub>1</sub> V ((C<sub>2</sub>) C<sub>3</sub>) #

where: C<sub>1</sub> can be any consonant;

C<sub>2</sub> can be any consonant except glottalized and voiced obstruents and /h/;

C<sub>3</sub> can be any consonant except /h/.

This constraint states that only one consonant is permissible in word-initial position and that it must be followed by one and only one vowel. The brackets indicate that up to two consonants may optionally occur in word-final position.

Polysyllabic words in Quatsino can, therefore, be segmented into syllables on the basis of the syllable structure constraint noted for monosyllabic words. Thus, syllables will always consist of an initial consonant and a following vowel, or, in other words, every syllable must begin with one and only one consonant. Syllabifications such as ...CVC\$VC...<sup>2</sup> or ...CV\$CCV... are ruled out because they violate this principle. The examples listed below illustrate the syllabic analysis (blanks represent boundaries).

#### CV

d <sup>z</sup> o li	cockles
x̄u x̄a ci	deep freeze
wə x̄ə lá	hear

sí wi yu	paddle
nə qá čá qe la	ten oclock
nə ge	mountain
<u>CVC</u>	
d <sup>z</sup> á x <sup>w</sup> ən	oolichans
qá mač	herring
xən d <sup>z</sup> əs	nose
púx <sup>w</sup> be	blow an instrument
tís to k <sup>w</sup> a	earring

CVCC

ʔí kačs ta ʔa	stand on head
há d <sup>z</sup> əčs ta la	noisy, to talk loudly
dəms xa	salt water
čə wənč	winter
dək <sup>w</sup> s tá	jump
ʔix <sup>w</sup> s tu	black eye
hə ʔačs	to order s.th. from s.o. who is going s.wh.

A handful of words contain medial consonant clusters with more than three consonants, i.e., ...VCCCCV... Such clusters violate the SSC for monosyllabic words in that there is no allowance for four consonants in one syllable. In such cases, the syllable break is understood to occur between the two last consonants of the

cluster, as illustrated below:

... \$ C<sub>1</sub> V C<sub>2</sub> C<sub>3</sub> C<sub>4</sub> \$ C<sub>5</sub> V ...

mən mən<sup>w</sup>s tu?

smily eyes

The following SSC states the acceptable syllable shapes in Quatsino:

SSC: \$ C<sub>1</sub> V ((C<sub>2</sub>) C<sub>3</sub>) C<sub>4</sub> \$

where: C<sub>1</sub> can be any consonant;

C<sub>2</sub> can be only fricatives (except /h/), sonorants, & /ʔ/;

C<sub>3</sub> can be any consonant except glottalized and voiced obstruents and /h/;

C<sub>4</sub> can be any consonant except /h/; however,

C<sub>4</sub> cannot be a glottalized or voiced obstruent in word medial position.

This constraint states: One, that only one consonant is allowed in syllable-initial position and that it may be any consonant; Two, up to three consonants are permissible in syllable-final position. The syllable-final consonant C<sub>4</sub> may be any consonant except /h/ in word-final position, and any consonant except glottalized and voiced obstruents and /h/ elsewhere. C<sub>3</sub> may be any consonant except glottalized and voiced obstruents and /h/, and C<sub>2</sub> may only be a /ʔ/, a fricative or a sonorant. The constraint is an abbreviation of the following four SSC's:

1. C<sub>1</sub> V; 2. C<sub>1</sub> V C<sub>4</sub>; 3. C<sub>1</sub> V C<sub>3</sub> C<sub>4</sub>;  
4. C<sub>1</sub> V C<sub>2</sub> C<sub>3</sub> C<sub>4</sub>.

The above syllabic analysis appears to be suited to the phonology of Quatsino because it provides an adequate construct to account for the predictable stress. Stress normally occurs on the first non-central vowel of a word or on the last vowel of a word containing only central vowels, as noted below:<sup>3</sup>

cú <sup>́</sup> d <sup>́</sup> u	washboard
ná <sup>́</sup> gila	stay up all night
gə <sup>́</sup> bám	button
gə <sup>́</sup> lá	bear, to crawl (like a baby or bear)

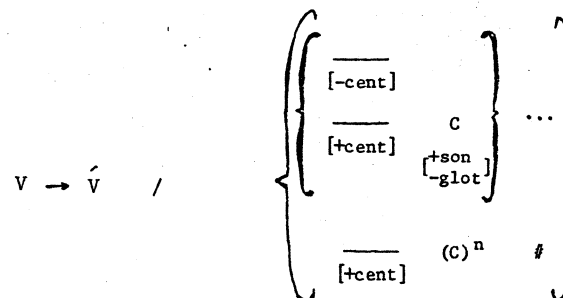
The vowel /ə/, however, takes stress as though it were a non-central vowel when it is followed by a plain sonorant in the same syllable.

Stressed	hón bi ʔe?	seine boat
	gól ga ʔu mós	animals
	dóms xa	salt
	ǵəl pa ʔa	grip on s.th.
Not Stressed	cə wónx̃	winter
	ǵə nəm	wife
	ʔə wə d <sup>́</sup> ú cə ne	palm of hand
	nə lá	big white swan

11

same C's  
of segment  
strength other  
SA:  
SS

The stress rule in Quatsino is stated by the following rule (leaving aside irregular patterns for later work):



This rule states that stress falls on the first occurrence of a [-central] vowel or a [+central] vowel which is followed immediately by a plain sonorant (a syllable boundary between the vowel and the sonorant would block the application of this part of the rule). The third part of the rule states that the last /ə/ in a word is stressed if all other preceding vowels are [+central], i.e., /ə/, and not followed by a tautosyllabic nonglottalized sonorant. As can be seen above, the concept of the syllable is reasonably well motivated and defined for the phonology of Quatsino because it is capable of describing the stress system.

#### Heiltsuk - Rivers Inlet dialect

In Rivers Inlet, on the other hand, the word-initial consonant clusters make it harder to segment syllables on the basis

12

of distribution. In addition, some words appear to have no vowels at all, which raises many questions concerning the universal nature of syllable structure. The following words illustrate the various phonological shapes of monosyllabic words in Rivers Inlet.

<u>CV</u>	la	yes	ʔa	bear
	ma	what		
<u>CVC</u>	gik	tooth	ʔaq	bone
	wik <sup>w</sup>	eagle	wac	dog
	muk <sup>w</sup>	four	wi	skinny
<u>CVCC</u>	ʔapk <sup>w</sup>	small child	ʔomp	father
	qeyt	hat	ʔowk <sup>w</sup>	strength
	səms	mouth		
<u>CCV</u>	qka	mosquito		
	qsu	that is ... (name of a person)		
<u>CCVCC</u>	x <sup>w</sup> cəmt	to hit over the head		
<u>CCVC</u>	ʔcəm	fish knife		
	ʔcəm	box (large storage type)		
<u>CCC</u>	q <sup>w</sup> i <sup>w</sup> ʔk <sup>w</sup>	meat		

The SSC for monosyllabic words in Rivers Inlet presented below (informally) is quite unlike the one for Quatsino due to the initial clusters and vowelless words which occur in Rivers Inlet.

SSC: C<sub>1</sub> (C<sub>2</sub>) (V) ((C<sub>3</sub>) C<sub>4</sub>)

The above SSC is presented as a convenience and is not intended as a formal statement about Rivers Inlet monosyllabic word shapes.

Unfortunately, the above SSC provides little guidance for segmenting syllables in polysyllabic words. Phonetically, the words with initial consonant clusters display an initial consonant which is long in duration and relatively loud, which I write phonetically as [·]. For example:

[ʔ·cəm]	ʔcəm	fish knife
[q·ʔqeya]	qqeya	just over head
[ʔ·cəm]	ʔcəm	box

cf. hit over head

This leads me to hypothesize that the initial consonant of a word-initial cluster forms a syllable in its own right.

In order to test out this hypothesis and, in general, better define the syllable in Rivers Inlet, I made a series of spectrograms and amplitude displays, which included Rivers Inlet words that have initial consonant clusters and cognate Quatsino words. Although it was not always possible to compare exact cognates between the languages due to an insufficient amount of data, I was able to compare similar phonological environments. As can be noted in the list of comparisons presented below, the Quatsino words always have the vowel /ə/ in between the first and second consonants where cognate words in Rivers Inlet have an initial cluster (e.g. 1 2, and 5 6). In addition, the words in Quatsino which begin with a

voiced obstruent begin with a corresponding voiceless obstruent in Rivers Inlet when the word has an initial consonant cluster.

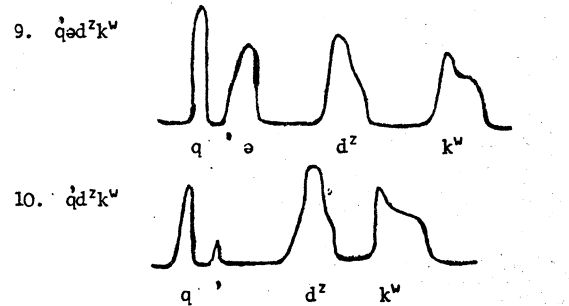
- |       |   |                |   |                |                |   |   |   |               |     |
|-------|---|----------------|---|----------------|----------------|---|---|---|---------------|-----|
| 1.    | R | p              | · | k <sup>w</sup> | á              | n | ə | m | man           |     |
| 2.    | Q | b              | ə | g <sup>w</sup> | á              | n | ə | m | man           |     |
| 3.    | Q | b              | ə | ʔ              | á              | s | u |   | albatross     |     |
| 4.    | Q | b              | ə | k <sup>w</sup> | é              | s |   |   | wild man      |     |
| 5.    | R | q              | · | ǰ              | ə              | n | é | m | women         |     |
| 6.    | Q | ǰ              | ə | ǰ              | ə              | n | é | m | women         |     |
| 7.    | R | q              | · | ʔ              | q              | é | y | a | hit over head |     |
| 8.    | R | q              | · | k              | a              |   |   |   | mosquito      |     |
| 9.    | R | q              | ə | d <sup>z</sup> | k <sup>w</sup> |   |   |   | meat          |     |
| 10.   | R | q              | · | d <sup>z</sup> | k <sup>w</sup> |   |   |   | meat          |     |
| 11.   | R | x <sup>w</sup> | · | c              | ∅              | m | t |   | hit over head |     |
| 12.   | Q | x <sup>w</sup> | ə | c              | ə              | m |   |   | hit over head |     |
| 13.   | R | ʃ              | · | c              | ∅              | m | a | l | a             | box |
| 14.a. | R | ʃ              | ə | c              | ∅              | m |   |   | box           |     |
| 14.b. | R | ʃ              | · | c              | ∅              | m |   |   | box           |     |
| 15.   | Q | ʃ              | ə | c              | ə              | m |   |   | box           |     |

15

- |     |   |   |   |   |   |   |  |  |            |
|-----|---|---|---|---|---|---|--|--|------------|
| 16. | R | ʃ | · | č | ə | m |  |  | fish knife |
| 17. | R | ʃ | · | č | ə | m |  |  | fish knife |
| 18. | R | ʃ | · | č | ə | m |  |  | fish knife |

The following three points can be deduced from the spectrograms and amplitude displays. A few illustrative amplitude displays are given below as well.<sup>4</sup> The full set of spectrograms will be available at the conference:

1. A word-initial stop consonant in a consonant cluster (Rivers Inlet) is followed by a long pause before the onset of the next consonant. The pause between the consonants is approximately as long as the vowel in comparative examples where the vowel is present.<sup>5</sup> Examples 9 and 10, both from Rivers Inlet, illustrate the same word pronounced alternatively with and without a vowel following the initial consonant:

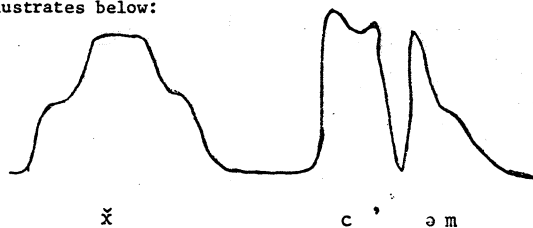


16



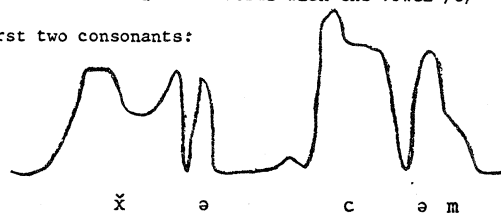
2. A word-initial fricative followed by a consonant is produced with a high degree of friction, as the amplitude display from example 18 illustrates below:

18. ǰcəm



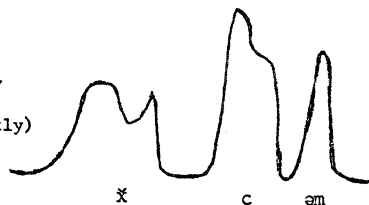
3. The initial consonant clusters in Rivers Inlet sometimes occur separated by a vowel. Example 14 depicts the same word pronounced twice in succession. In the first example, the vowel /ə/ appears quite strongly on the amplitude display while in the second it does not occur. Such examples suggest that the initial consonant clusters are all formed as variants of words with the vowel /ə/ separating the first two consonants:

14.a. ǰəcəm



14.b. ǰcəm

(pronounced very quickly and softly)



The above three points suggest, fairly strongly, that initial consonant clusters in Rivers Inlet are divided by a syllable boundary.

The first syllable, therefore, consists of a consonant followed by a vowel which is realized phonetically as either [ə] or [ʰ].

Historically, the initial clusters have developed from deletion of the vowel /ə/ following the initial consonant, which further supports the claim that a syllable boundary occurs before the second consonant in an initial cluster. The following examples, taken from various dialects and languages of the Kwakiutlan branch, demonstrate that a vowel was probably present in Proto-Kwakiutlan:

A Alert Bay dialect of Kwakwala (from my field notes)

Q Quatsino dialect of Kwakwala (from my field notes)

S Smiths Inlet dialect of Kwakwala (from my field notes)

R Rivers Inlet dialect of Heiltsuk (from my field notes)

BB Bella Bella dialect of Heiltsuk (from Boas 1928)

H Haisla (from Vink 1977)

1.

man

A	b	ə	g <sup>w</sup>	á	n	ə	m
Q	b	ə	g <sup>w</sup>	á	n	ə	m̥
S	b	ə	g <sup>w</sup>	á	n	ə	m
R	p	∅	k <sup>w</sup>	á	n	ə	m
BB	t	∅	k <sup>w</sup>	a	n	ə	m

2.

old woman

A	ɬ	ə	k <sup>w</sup>	á	n	i		
Q	ɬ	ə	k <sup>w</sup>	á	n	i		
R	ɬ	ə	k <sup>w</sup>	á	n	a	y	u
BB	ɬ	∅	k <sup>w</sup>	a	n	e	?	
H	ɬ	ə	k <sup>w</sup>	a	n	i		

3.

octopus

A	t	ə	q <sup>w</sup>	á
Q	t	ə	q <sup>w</sup>	á
S	t	ə	q <sup>w</sup>	á
R	t	∅	q <sup>w</sup>	á

4.

bow

A	t	ə	k <sup>w</sup>	i	s	i
Q	t	ə	g <sup>w</sup>	i	s	g e t
S	t	ə	g <sup>w</sup>	i	s	
R	t	∅	k <sup>w</sup>	i	s	
BB	t	∅	k <sup>w</sup>	i	s	

5.

box

A	ǰ	ə	c	é	m
Q	ǰ	ə	c	é	m
S	ǰ	ə	c	é	m
R	ǰ	∅	c	é	m

Phonetically and historically considered, therefore, consonant clusters in Rivers Inlet are separated by a syllable boundary which, in turn, suggests that a /ə/ is present in such clusters at an underlying level.<sup>8</sup> Thus, the few words which contain initial clusters do not appear to be phonotactically unusual and do not constitute such a formidable counter-example to the claim that Wakashan languages have no word-initial consonant clusters. In addition, this proposal allows us to segment Rivers Inlet syllables on the same distributional basis as Kwakwaka, i.e., allow only one consonant to occur in syllable-initial position.

The following data briefly exemplify the various syllable

19

types present in Rivers Inlet:

<u>CV</u>	ʔə ʔə bú	seven	bá ba ʔi la	spread arms out
	há yə su	hand	ǰá la yu	halibut hook
<u>CVC</u>	ʔə ʔəy nax	eyebrows	ǰ <sup>w</sup> á ǰə nis	dog salmon
	qəl ǰa mi	eggs	qám da yu	fork
<u>CVCC</u>	ǰé ǰeqs	eyes		
	məns ǰəm ǰus tu wa	100		
	k <sup>w</sup> ənx <sup>w</sup> k <sup>w</sup> ən x <sup>w</sup> ə nu	thunder		
	təms təm sa	ring, ring, ring		
<u>CVCCC</u>	qəlpt ǰiscɬ	deep		

The SSC for Rivers Inlet, presented below, is basically the same as the one for Quatsino. Unfortunately, I have not yet worked out

SSC: \$ C<sub>1</sub> V ((C<sub>2</sub>) C<sub>3</sub>) C<sub>4</sub> \$

which consonants are allowed in the different positions.

Due to the fact that I have not been able to determine the stress system in Rivers Inlet, it seems premature to test out the foregoing analysis at present. Hopefully, I will be able to collect and analyse more data in future and, thereby, provide more information on the status of the syllable in Rivers Inlet.

20

WHS: what about Jones?  
Paper - 5 years ago -

Summary

In summary, I have presented a brief syllabic analysis of the Quatsino dialect of Kwakwaka and the Rivers Inlet dialect of Heiltsuk. I hope to have demonstrated, thereby, that the syllable can be analysed distributionally in both languages and can provide a reasonable analysis of stress in Quatsino. In future, I hope to further examine the usefulness of the syllable in phonological descriptions, especially in the areas of reduplication, which appears to be sensitive to syllabic and not segmental phonological units, and phonotactics.

Notes

1. Cf. D. Abercrombie (1967), L. Bloomfield (1933), N. Chomsky and M. Halle (1968), R-M. Heffner (1969), J. Hoard (1971), J. Hooper (1972), P. Ladefoged (1974), B. Malmberg (1961, 1963, 1968), O'Conner and Trim (1953), F. Palmer (1973), K. Pike (1943, 1948), Sloat, Taylor, and Hoard (1978), M. Swadesh (1934), K. Togeby (1973), and T. Vennemann (1972a, 1972b, 1974).
2. § represents a syllable boundary in rules and statements while a blank represents a syllable boundary in examples.
3. I use the term central to refer to the vowel /ə/ and non-central to refer to the other vowels, i.e., /i e a o u/.
4. Unfortunately, the amplitude displays need to be accompanied by the corresponding spectrograms in order to be fully interpreted. The spectrograms have not been included in this paper due to the difficulties associated with reproducing them.
5. A direct comparison is not always profitable since the voiceless initial clusters occur in rapid speech while the corresponding pronunciation with /ə/ often occurs in slower speech. Instead, the time duration between the first two consonants must be averaged with the total time duration of the word in order to present a more accurate picture. Unfortunately, I have not had the time to present such analysis for this paper.
6. /' signifies the release of a glottalized obstruent.
7. The small peak following /q/ in example 10 is the glottal

release of /q/. This peak does not possess any vowel qualities.

8. Boas suggested (1892) that the initial consonant clusters in Heiltsuk were formed due to contact with Bella Coola, a nearby Salish language with a large number of consonant clusters and vowelless words. This hypothesis, although not fully tested, is based on the fact that a high degree of contact was established between the Heiltsuk and the Bella Coola. This is evidenced, for example, by the large number of myths which are shared between the Heiltsuk dialects and Bella Coola which are not found in Kwakwaka'wakw.

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- 249
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## APPOSITION AND RELATIVIZATION IN KWAKWALA

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0. Introduction
1. Structural Summary
2. Topicalization and Foregrounding
3. Relative Constructions
4. Arguments for a Lexicalist View of Relatives
5. Apposition and Subordinate Constructions
6. Mediation and Discourse Centrality
7. Historical Speculations

ABSTRACT: *Kwakwala possesses a set of constructions which appear analogous to English relatives. It is certainly possible to represent these constructions as arising from underlying sentences. Internal evidence suggests, however, that relatives are better described as nominal even in their underlying form, and are appositionally related to any nominal with which they are associated. The concept of apposition is not restricted in usefulness to relatives; arguments are given to demonstrate that subordinate constructions are also linked to their matrix sentences through apposition. The discourse function of subordinate forms vis-a-vis their morphological characteristics raises serious questions about the absolute validity of the lexical labels NP and S in Kwakwala grammar. These questions refer not merely to the well-known freedom of stems with respect to morphological frames but to whether or not the notions S, V and NP can be well-defined in a non-trivial way in Kwakwala. Some speculations are offered on the relation of these issues to Kwakwala historical development.*