in the house
passive
terminal suffix for nouns
on a flat surface
spine
instrument
(1, 2) nominal
personal suffix (slang)
name of animal
away
thing, object
to die of
down into the water
(gradual motion)
strength, power
suffixes
suffix referring to living being
on ground outside
sensual quality of body or mind
tree
specific condition of things
personal suffix
to start making noise
disposition
line, string
(member of) group or tribe
chest
neck
(1, 2) nominal
neck
way of
to try to get, to become
hind end, afterwards
certain mood
continuous

Aspects of Ciaillam Phonology and their Implications for Reconstruction
Mark S. Fleisher
Washington State University

Introduction
This paper focuses on the internal reconstruction of Proto-Clallam (henceforth PC) phonology. I will argue that the PC phonemic inventory is considerably reduced from the synchronic surface phonemic system.

Integral for the reconstruction of the PC phonemic inventory is the behavior of proto-glides */?*, *h*, *w*, *y*, *//. The hypothesis is that phonological alternations involving the glide segments were morphologized which lead to the restructuring of allophonic segments. Consequently, the number of surface segments identified by the language learner as distinct (phonemic) increased as compared with the underlying phonology which can be reconstructed when specific morphophonemic processes are considered.

*/?*, */h/
The glottal glide is defined as [- continuant], [+ low], [- tense]; */h/ is a [+ continuant], [+ low], [+ tense] segment (see TABLE I). */?/ and */h/ are closely related structurally; both are [- anterior], [+ low] segments distinguished by the [tense]. */h/ is positively marked for tenseness and */?/ is negatively marked for tenseness. Tenseness may be viewed in an alpha relationship with the feature [continuant] making it a redundant feature. Within the system, however, all [+ tense] segments are redundantly [- continuant]; the problem of feature ordering within the matrix becomes apparent vis-à-vis the
TABLE 1. PHONOLOGICAL DISTINCTIVE FEATURE MATRIX FOR CLALLAM PHONEMES

<table>
<thead>
<tr>
<th>Feature</th>
<th>p</th>
<th>k</th>
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<th>g</th>
<th>d</th>
<th>s</th>
<th>z</th>
<th>h</th>
<th>y</th>
<th>i</th>
<th>e</th>
<th>u</th>
<th>a</th>
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<tbody>
<tr>
<td>1. Vocalic</td>
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<td>7. Tense</td>
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<td>8. Strident</td>
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</table>

As this rule must apply to all glide segments, it is apparent that an additional rule must be employed to correctly specify [ continuation]. If, however, the following rule is used, marking theory shows that [ tense], not [ continuation], is the distinctive feature since [ tense] and [ low] correctly specify all glide segments. Given the opposition */h/ vs. */h/, would appear in neutralized environments as the unmarked member of the pair. From the point of view of marking theory, we can assert that /h/ is the feature [ tense], not [ continuation].

If we assume that low segments tend to be tense, then the interplay of */h/ and */h/ in particular environments is clear. A glottal glide becomes tense preceding another glottal glide (i.e., */h*/h*/h*), running out of onset or offset, or using up something). The surface representation is a nonabrupt syllabic 'growing', and the surface representation is a nonabrupt syllabic onset or offset.

The rule now applies to glide segments, and the distinctive feature is [ tense].
/w/, /y/

/w/ is defined as [- anterior]; /y/ is [+ anterior]
(see TABLE 1). /w/ and /y/ become corresponding vowels between consonants, and between a consonant and a following pause. /w/ and /y/ occur predictably as [u] and [i], respectively. Synchronically, /w/ and /y/ appear as [kʷ] and [ɛ] in environments which are ill-defined. Similar variations probably occur with */unteer/ and */i deterrent/; however, the situation is further complicated in that vowel clusters do not appear in the phonology. Consequently, */unteer/ and */i deterrent/ are involved in a case of absolute neutralization.

Productive diachronic variation in the semi-vowel class is summarized as follows.

<table>
<thead>
<tr>
<th>Conditioning</th>
<th>Phonetic</th>
<th>Morphophonemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) w</td>
<td>u</td>
<td>kʷ</td>
</tr>
<tr>
<td>(2) ɾ</td>
<td>uʔ, uʔ</td>
<td>kʷ</td>
</tr>
<tr>
<td>(3) y</td>
<td>i</td>
<td>ɛ</td>
</tr>
<tr>
<td>(4) ɾ</td>
<td>iʔ, iʔ</td>
<td>ɛ</td>
</tr>
<tr>
<td>(5) h</td>
<td>h</td>
<td>a</td>
</tr>
<tr>
<td>(6) ?</td>
<td>?, h</td>
<td>h</td>
</tr>
</tbody>
</table>

Fleisher (1976:153-154) suggests that shwa is the only PC pure vowel since it has no consonant allophones. Furthermore, /e/ was not present in PC; its synchronic appearance is infrequent and consistently in the presence of postvelars (see Jacobsen 1969:2 for a discussion of /e/ in Makah).

As an example of these processes consider the derivation of the surface forms:

(a) /huʔakʷ-ʔ-awʔ-ɾ/ 'be in front of something'
(b) /huʔakʷ-ʔ-awʔ-ɾ-txʔ/ 'be in front of a house'
(c) /huʔakʷ-ʔ-axʔ/ 'front edge'

The underlying root is */ʔhwʔ/ 'front, forward, location'. The surface stem is derived as follows:

* /ʔhwʔ/)
(1) Reduplication  hwʔ-hwʔ(?)
(2) MP-rule  hwʔ-akʷ(?)
(3) P-rule  huʔ-akʷ(?)

Step (1) reduplicates the underlying verb root. Step (2) produces the morphophonemes /a, kʷ/. Step (3) produces the phonetically conditioned [u].

* /kw/, */ʔy/

The morphophonemes [kʷ] and [ɛ] are derived phonetically through the intermediate step, */kw/<*{/ʔw} and */ʔy/><*{/ʔy}.

Other morphophonemic affricates are derivable similarly (i.e., */s/>*/ʔs>/[c]; */s/>*/ʔs>/[ɛ]; */ʔ/>*/ʔɛ>/[ê]).

Variation of this sort is interesting in comparison to data which do not show this type of assimilation (i.e., /kʷʔtšan/ 'spring salmon'; /sʔtʔʔšon/ 'animal trap'; /tsəʔkʷʔʔʔ/ 'comb').

Nonassimilation in these environments may be conditioned by the morpheme boundary (+) occurring medially in the consonant cluster (e.g., /kʷʔitʔsan/, /ʔʔʔtʔʔʔšon/, /tsəʔkʷʔʔʔ/).

Implications and Conclusions

(1) PC has a greatly reduced phonemic inventory vis-à-vis synchronic Clallam (see TABLE II).
TABLE II. PHONOLOGICAL DISTINCTIVE FEATURE MATRIX FOR CLALLAM PROTO-PHONEMES

<table>
<thead>
<tr>
<th>Feature</th>
<th>*p</th>
<th>*b</th>
<th>*f</th>
<th>*k</th>
<th>*g</th>
<th>*q</th>
<th>*t</th>
<th>*d</th>
<th>*s</th>
<th>*x</th>
<th>*z</th>
<th>*h</th>
<th>*y</th>
<th>*w</th>
<th>*m</th>
<th>*n</th>
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<tbody>
<tr>
<td>1. Vocalic</td>
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</table>

(2) With the exception of /l/ and /b/, the morphophonemics of PC are nonproductive in synchronic Clallam. (3) Clallam morphophonemes appear sufficiently disparate from their underlying forms as to reinforce the distinction in morphophonemics.
TABLE III. PROTO-CLALLAM MORPHOPHONEMES

<table>
<thead>
<tr>
<th>*p</th>
<th>*t [c]</th>
<th>*k</th>
<th>*q</th>
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</thead>
<tbody>
<tr>
<td>*b</td>
<td>*d [t]</td>
<td>*k</td>
<td>*q</td>
</tr>
<tr>
<td>*s</td>
<td>*x</td>
<td>*h [a]</td>
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<tr>
<td>*z</td>
<td>*n</td>
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<tr>
<td>*y</td>
<td>[i, e]</td>
<td>*w</td>
<td>[u, k']</td>
</tr>
<tr>
<td>*v</td>
<td>[i, e]</td>
<td>*w</td>
<td>[u, k']</td>
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<tr>
<td>*z</td>
<td>*n</td>
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</table>

(Brackets enclose morphophonemes)

FOOTNOTES

1 The initial period of field work with the Lower Elwha Clallam was from August 1974-June 1975. Research was supported by a Washington State University Research Grant-in-Aid.

I gratefully acknowledge the assistance of Larry and Terry Thompson during the initial stages of field research. I also wish to thank Dr. Raleigh Ferrell and Dr. Geoffrey Gamble, Department of Anthropology, Washington State University, and Dr. Thomas Hess, Department of Linguistics, University of Victoria, for their comments on an earlier version of this paper presented at the 1976 Northwest Anthropological Conference.

2 Glottal glide dissimilation preceding another glottal glide is a phonetically conditioned rule; however, glottal glide dissimilation preceding a pause can be interpreted as phonetic or nonphonetic conditioning. In the case of nonphonetic conditioning, the pause would be interpreted as a word or morpheme boundary. The varying interpretations are theoretical and related specifically to constructing a phonological or morphophonemic rule, or both.

3 Comparative data from two Halkomelem dialects, Cowichan and Musqueam, also illustrate this phenomenon (Elmendorf and Suttles 1960:13-27).

Cowichan          Chilliwack
sw'éy?qe          swéy?qe  'man'
swiw?lós          swiwi?lós  'teenage boy'
søy?soy?          si-sl'  'be afraid, fear'

*/-axon, -aw?*, /-tx*/' are lexical suffixes; /-axon/ 'side, edge', /-aw?*/' (group viewed distributively [see Hess 1976:13-14]).

*/-ax/  'building'. /-tx/  'building'. /-s*, -?/ are aspectual markers; /-s/ (durative), /-?/ (continuative).

4 The morphophonemic rule (MP-rule) can only be weakly formulated at this time; in reduplicated verb stems, the reduplicated syllable undergoes one or more of these morphophonemic variations: */-h*/[a], */w*/[k'], */g*/[k'], */y*/[e], */?*/[e]. The MP-rule also seems to operate in a similar fashion in the derivation of [k'/*-nw-tli]*/*wó*/ 'fight'. More additional data are necessary to understand this nonproductive process.

5 */w, k/ seem to play an important role in the underlying phonology. Any phonological rule constructed with */w, k/ as part of the structural description has a corresponding result in articulation. This is an important point because it raises two sources for */w, k', k'/, one morphophonemic and the other phonetic ([w, k] tends to create an environment within which segments lower; therefore, */k*/[k'], */q*/[q']). Similarly, */e/ may also have a morphophonemic */y*/[e] and phonetic */k*/[e] source.
This phonological rule (P-rule) is common in Clallam; the glides /w, y/ become corresponding vowels, /u, i/, between consonants and between a consonant and a pause.

REFERENCES


Morphemes of Possession in Twana

Ghulam H. Haqain
Skokomish Tribal Center

This paper gives a short description of morphemic structures which can be used to denote possession in Twana. Not included in this discussion are cocurrence constraints or a discussion of main verbs of the type 'own', 'possess' since my research has not progressed to that point.

This paper makes available certain data which should enable limited comparison to be made in the future of structures which designate possession in Twana and those found in other Salish and non-Salish languages. Forms cited in this paper were elicited by me from Louisa Pulsifer, referred to as (LH), or Lee Cush (CH), or they are Professor Elendorf's forms (WE) or forms elicited by Nile Thompson also from Louisa Pulsifer (LT).

In Twana, possession is commonly expressed in three ways: by possessive pronouns typically glossed in English in the manner 'my, mine etc.'; by a peripherastic prefix of possession bi- in the sense of 'have, has'; by a genitive noun phrase suffix -(V)es (where V stands for either the vowel e or i) constructions which can be glossed in English with the use of the preposition 'of'. In conclusion a note is made of adjectives, compounds and certain special sentence types which involve the notion of possession.

First consider the possessive pronouns. The first and second person singular possessive pronouns are represented in two ways: as an adjectival affix and