

NOTES ON SOURCES OF YUROK GLOTTALIZED CONSONANTS

JULIETTE BLEVINS

University of Luton

1. INTRODUCTION. A genetic relationship has been established between Yurok, Wiyot and the Algonquian languages (Sapir 1913, Haas 1958, Teeter 1974, Goddard 1975, Berman 1982a, 1984, 1990). Yurok has ejectives as well as laryngealized fricatives and sonorants. Proto-Algonquian lacks ejectives and laryngealized sonorants, while Wiyot has no ejectives, but does show pre-glottalized fricatives and sonorants which could be considered unit phonemes. In this paper, I build on previous work on the sources of Yurok glottalized consonants, focusing primarily on the origins of ejectives. Yurok ejectives are less common than their non-ejective counterparts, and have a more limited distribution (see Appendix II). As noted by Gensler (1986:71) "The defective and skewed distribution of ejectives in Yurok... suggests that the ejective series is a relative newcomer in the historical phonology...". In this study, I provide support for this view based on internal reconstruction and comparison with Wiyot. In section 2, Berman's (1982a) proposal that glottalized consonants reflect **Ct* clusters is strengthened by providing further etyma, and suggesting a regular sound change in the history of Yurok taking **Ct > Cʔ > C'*. In section 3, I identify a morpheme associated with hairiness and bushiness, **-Vpʔ*, with *-Vp'* reflexes in Yurok terms for plants and other growing things. By demonstrating other **t/t* correspondences, it is possible to derive all these instances of *p'* from the same sound change proposed in section 3: **Vpʔ > Vpʔ > Vpʔ > Vp'*. In sections 4 and 5 I discuss possible sources of Yurok *c'* and *t'* which both have limited distribution. In section 6 I identify ejectives which are unlikely to be inherited, and identify potential loan sources in languages of the area. Yurok data sources are Robins (1958) supplemented by Berman (1982b).¹ Wiyot sources are Teeter (1964) and Teeter and Nichols (1993).

2. **Ct* CLUSTERS. The most obvious feature suggesting a relationship between Yurok, Wiyot and the Algonquian languages is the form of the pronominal prefixes (Sapir 1913, Goddard 1975). However, as pointed out by Goddard (1975:250-54), a problem for the comparative method was the fact that Yurok prefixes are glottalized on nouns and verbs, but not in independent pronouns.

(1) Pronominal prefixes

	PA	YUROK	WIYOT (BEFORE ALIENABLE NOUNS, T: 39)
1 st	*ne-, *ne(t)-	?ne- (cf. nek 'I')	duʔ-
2 nd	*ke-, *ke(t)-	k'e- (cf. keʔl 'you sg.')	k ^h uʔ-
3 rd	*we-, *we(t)-	?we-, ?u	huʔ-

An ingenious solution to this problem is presented in Berman (1982a:418), where it is suggested that the source for glottalization in the pronominal prefixes of Yurok is the *-t-* infix found in the related languages: "The glottal element in these prefixes is cognate with the *t* which is inserted after the pronominal prefixes in Proto-Algonquian and in Wiyot when the following element begins with a vowel." The quality of the prefixal vowel in all languages is predictable, and is treated as epenthetic. Proposed phonological forms of prefixes on vowel-initial stems are shown in (2):

¹ Yurok data is from Robins (1958) unless noted otherwise. Abbreviations used are: B Berman (1982b); PA Proto-Algonquian; PAR Proto-Algonquian-Ritwan; T Teeter (1964); TN Teeter and Nichols (1993, vol. 1); WIY Wiyot; YUR Yurok.

(2) Pronominal prefixes before vowel-initial non-dependent stems (assuming [e] is epenthetic)

	PA	PRE-YUROK TO YUROK
1 st	*nt-	*nt- > *nʔ- > ?n-
2 nd	*kt-	*kt- > *kʔ-
3 rd	*wt-	*wt- > *wʔ- > ?w-

This allows us to dispense with the glottal drift towards the beginning of the word suggested by Berman (1982:418), and propose the simple sound change in (3), with subsequent metathesis in the case of pre-glottalized sonorants.

(3) Glottalization in Pre-Yurok

*Ct > (Cʔ) > C' (C' a glottalized consonant)

Goddard (1990:109) proposes other etymologies which support the general sound change in (3). These are shown in (4). In (4i) third person *-t- in Proto-Algonquian is cognate with third person stem-final glottalization in Yurok. Third person glottalization in Yurok is regular in third person forms of e-class and type I o-class verbs (Robins 1958:33-35) where stem-final /c, k, k^w, p, t/ become ejectives and stem-final fricatives and sonorants are pre-glottalized. For example, from the stem *maʔepet-* 'to tie up', one finds *maʔepet* 'he/she/it ties up', from the stem *koʔmoy-* 'to hear', *koʔmoʔy* 'he/she/it hears', and from the stem *tenpewet-* 'to rain', one finds *tenpewetʔ* 'it is raining'.

(4) Evidence for *Ct > C' in Pre-Yurok (Goddard 1990:109)

	PROTO-ALGONQUIAN	YUROK	WIYOT
i. third person (PA conjunct order)	*-t-	glottalization of final C	
ii. 'spruce root'	*watapya	?wohpey	tòp

In (4ii), the *wt cluster resulting from syncope is reflected as ?w in Yurok and as simple t in Wiyot. Apart from the first-person prefix ?n-, there are no word- or stem-initial glottalized nasals in Yurok, suggesting that syncope never occurred in the context [N_T]. In the remainder of this section, I present further cognate sets supporting the sound changes in (3).

In (5), the Ct > C' sound change is suggested by possible correspondences between morpheme-internal Tt in Wiyot with T' in Yurok, where T is an obstruent.

(5) Yurok T' < *Tt

- a. YUR *mek'oh* 'to hit right in the center'; WIY *bakt-* 'separate' [TN:11]
- a'. YUR *pek'ew-* 'to have something stuck in one's throat'; WIY *pik, pikto* 'half, halfway'.
- b. YUR *?up'əh* 'backbone', *?up'es* 'backbone of fish'; WIY *taptitk* 'backbone (of salmon)' [TN:313]
- c. YUR *hək^wəh* 'rabbit'; WIY *takwt* 'cottontail rabbit' [TN:308] (cf. WIY *hikw* 'buckskin, rabbit skin' [TN:108])
- d. YUR *hup'o:* 'N, Hupa (place)'; WIY *hoptono* 'N Hupa (place)' [TN:120] (cf. YUR *hop'ew* 'Klamath (place)', *hipec* 'ADV, up river, upstream', *hipur* 'ADV northward, toward the (Klamath) river mouth')

In (5a) and (5a'), regular sound correspondences are found: *m > YUR m, WIY b; and *e > YUR e, WIY a, *p > YUR p, WIY p; *ew YUR ew/o, WIY o. Though the semantic

distances may seem great for these two pairs, it is not uncommon to find single lexemes with this full semantic range. For example, in Nhandá, an Aboriginal language of Western Australia (Blevins, 2001) the stem *arda-* has the semantic range ‘cut, halve, separate’ with derived forms including *arda-thada* ‘short-cut; halfway, in the middle’, and *arda-nda-* ‘to break (of waves)’. The Wiyot stem *bakt-* is found in derived forms *bakten-* ‘separate by hand’, *baktenit* ‘open 3-Obj’ (of a door), *baktetoliŋ* ‘3-Df goes away’, *baktethohlabiŋ* ‘3-Df throw aside, throws apart’ (the boards of a house) [TN:11]. Yurok *mik’olum-* ‘to swallow, to gulp down’ may or may not lend unity to the pairs in (5a, 5a’) suggesting an ancient system of initial consonant mutations. In (5b), the YUR form shows evidence of **t > ʔ* initially, with other conditioning factors yet to be discovered.² The *u/a* correspondence in the initial syllable is unexplained, though (5d) suggests a shift of short *V > u/h_p*. (. a syllable boundary). In (5c) the YUR form shows diminutive vocalism so vocalic correspondences are regular. The *h/t* correspondence is irregular, though there could be other instances: compare YUR *hikoc* ‘across’, WIY *takt-* ‘across’; YUR *holim-* ‘to weave’, WIY *toliw-akwh-uhy* ‘N, weaving’. For (5d), I suggest a stem **hipEt-* with syncope yielding **hipto*, and subsequent labialization giving **h{u,o}pto*, undergoing the sound change in (3).

The sound change in (3) is also supported by at least two correspondences for (derived) morpheme-internal **Rt* sequences with Yurok *ʔR*. The cognate set for MAGGOT is from Berman (1990:432), and that for BRANCH is from Proulx (1984:179) with the addition of a possible Wiyot cognate, the stem *-bickad*, a diminutive form of *bitkad*.

(6) Yurok *ʔR < *Rt*

- a. MAGGOT. PAR **yo:tkw-*; PA **o:ɣkwɛ:wa* ‘maggot’; Wiyot *yutw* ‘maggots’; Yurok *ʔyekʷt* ‘maggot, worm’.
- b. BRANCH. PAR **wehtekwani*; PA **wehtekwani* ‘branch’, Yurok *ʔweŋkun* ‘heavy limbs’, *ʔweskwɛn* ‘small branches, twigs’; WIY *kosbickadac* ‘V, small legs’ (/kos/ a preverb).

Berman remarks for (6a) that: “Initial **y* is rare in Proto-Algonquian. On the simplification of *tkw* in Wiyot, see Goddard (1975:258).” The PAR reconstruction is based on the PA and Wiyot forms, but the Yurok form is not integrated. I suggest that glottalization in Yurok is a reflex of a derived **yt* cluster, with the sequences of changes shown in (7):

(7) **yo:tkʷ > yotkʷ > ytkʷ > yʔkʷ > ʔykʷ > ʔyekʷ*

The two initial sound changes involve shortening and then loss of the stem vowel. This vowel loss gave rise to the *yt* cluster which then underwent the sound change in (3). A final change is e-epenthesis.³ Proulx (1984:179) has a similar difficulty explaining the seeming loss of **eht* in Yurok in evidence in (6b), and states: “After loss of regular loss of **h* in Yurok, **et* was dropped by analogy with the general simplification of prefixes in that language...”. However, if as for (6a), we assume a rule of syncope resulting in an initial *wt* cluster, rule (3) will give rise to the attested initial *ʔw*.

The only *Ct* clusters in Wiyot are /pt/, /kt/, and /kwɫ/. For this reason, no direct correspondences between Yurok *ʔR* can be found in Wiyot.

² Berman (1982a:417) remarks: “PR **t* remained as *t* in Wiyot and split into *t* and *ʔ* in Yurok. The conditioning factor for the sound change **t > ʔ* is unknown. An example of this correspondence is: PAR **ta:-*, PA **ta:-* ‘to exist’, Wiyot *to-* ‘to stay’, Yurok *ʔ-* ‘to be, to exist, to be born’. See below for further discussion of this sound change.

³ Berman (personal communication, 2000) suggests that the vowel-loss in (7) is unnecessary, with a change of *t > ʔ*, and shift of glottalization to word-initial position. However, as he himself points out, there is good evidence that in general, **tk* and **tkw* sequences are reflected as such in Yurok, with no glottalization, e.g. PAR **tkeʔkw-* ‘kettle’, PA **axkehkwɛ* ‘kettle’, Yurok *tkekʷeʔl*, *tkekʷeʔr* ‘pot’. The final *ɫ* in Yurok is unexplained. The only other words with final *Cɫ* in Yurok are listed in (17); none have clear cognates in Wiyot.

The restriction of rule (3) to *Ct* clusters, combined with the existence of the productive diminutive sound-symbolism system shown in (8), leads us to investigate possible correspondences between **Ct* and Yurok *Cc*.

(8) Yurok sound-symbolism (Robins 1958; Haas 1970)

GRADE	CONSONANTS	VOWELS	MEANING
1	t l	a, e, o	normal/pejorative
2	c r	ə	diminutive

Only one clear example has been found. It is given in (9) (see also Proulx 1984:178). The regular reflex of PA **i:* is Wiyot *i*; Wiyot *u* could reflect another instance of syllable-internal labialization, in this case **i > u* /LAB_LABX. (where . is a syllable boundary).

(9) Yurok *Cc* / Wiyot *Ct*, **Ct*

- a. YUR *mek^wc* ‘snail’; WIY *bukt* ‘snail’ (cf. PA **mi:kehsa*, **-mi:kw* (deverbal) ‘snail’ [S183])

If rule (3) was a feature of Pre-Yurok, the pattern of sound symbolism in (8) also implies that there will be internal lexical correspondences in Yurok between words with *C'* and those with *Cc*, where *C' < *Ct* in non-diminutive forms. However, this is not the case. As far as I can tell, there are no cases where *C'* corresponds to grade 1 and the corresponding *Cc* cluster to grade 2. On the other hand, there are a handful of regular correspondences for *Ct/Cc*, as shown in (10).

(10) Yurok *Cc* grade correspondences

- a. Grade 1 *lek^wtem-eł-* ‘to dig’
 Grade 2 *rek^wcem-* ‘V, to hollow out’
- b. Grade 1 *hoktk-* ‘to butcher, to cut up’
 Grade 2 *hokck-* ‘to chip arrowheads’
- c. Grade 1 *mek^wta?* ‘N, stump’
 Grade 2 *məkca?əkə?* ‘N, hip’

There is nothing remarkable about the pairs in (10), except that the *Ct* clusters clearly have not undergone the sound change in (3) (or have been restored through analogy), and there is no diminutive vocalism in (10a, b). More remarkable sets are shown in (11).

(11) Other grade correspondences

- a. Grade 1 *hek^wc* ‘eating basket’
 Grade 2 *hək^wtəks* ‘N, small basket used as drinking cup’
- b. Grade 1 *leptenok* ‘N, cloud’ (cf. WIY *laptowh-* ‘cloud’)
 Grade 2 *ləpsuwəy-* ‘to be covered in mist’
 Other *ləptənu?rəwəy-* ‘V, to be bad weather’ (cf. WIY *lapcohyowack* ‘storm cloud’)
- c. Grade 1 *?leptoɣ?* ‘N, hair’ (cf. WIY *-laptih* ‘feathers’)
 Grade 2 *?lepsun* ‘N, down’, *lepsemoy-* ‘to be hairy’, *lohpsəmoj-* ‘to be downy; to be hairy’ [B:205]
 Other *lepcoh* ‘N, fur’ [B:205]

In (11a), there appears to be inversion of consonant associations: if [c] occurs in grade 1, then [t] occurs in grade 2. Notice that the grade 2 status of *hək^wtəks* is supported not just by the semantics of this form, but also by the ə-vocalism coupled with an instance of the archaic diminutive suffix /-s/ (Berman 1986).⁴ Another pair showing this relation is *cokco:p* ‘N, drum’ and *təktə:pətew-* ‘V, to clap the hands’.

Berman (1986:419) suggests that grade 1/2 sets like (11b) and (11c) represent an “archaic pattern of diminutive symbolism in which *t* shifts to *s* rather than to *c*.” However, the forms listed under ‘other’ suggest an alternative analysis. Perhaps in these cases, as in (11a), /t/ and /c/ were already in use lexically for grade one (normal/pejorative) meanings, forcing a further alternate, /s/.

Given this possibility, there are two Yurok pairs, shown in (12), where an ejective in one word may be the reflex of **Ct*, with a cluster in grade 2, or a related grade.

- (12)
- | | | |
|----|---------|---|
| a. | Grade 1 | <i>cek'or</i> ‘periwinkle’ |
| | Grade 2 | <i>tək^wtəm</i> ‘N, dentalium shell’ |
| | Other | <i>seksun</i> ‘N, small shell’ [B:214], <i>seksoh</i> ‘N, shell of any shellfish’ |
| b. | Grade 1 | <i>kep'ot</i> ‘a hollow, a clearing, a space’ [B:202] |
| | Grade 2 | <i>kep^sc-</i> ‘to lie in ambush’, <i>kep^senif</i> ‘fawn’ |

As shown in (10) and (11), Tt clusters do occur in Yurok, T an obstruent. A complete list of these clusters is given in Appendix I. In most cases I suspect that failure to undergo (3) is due to their occurrence (via morpheme concatenation) post-dating the sound change.

3. REFLECTIONS OF *-*epʰ*. Yurok underlying /p/ is found word-medially and finally, but occurs word-initially in only word, the inflected 2s imperative verb *p'ems* ‘cook!’ (with doublet *pemes*).⁵ Some Yurok words relating to plant life end with a long vowel followed by /p/. Some examples are given in (13).⁶

(13) Final *V:p* in plant words

- | | |
|----|---|
| a. | <i>ka:p</i> ‘N, leaf, leaves, greenery, brush, grass [B:201]’ |
| b. | <i>meʔyk'welu:p</i> ‘N, poison oak’ (cf. <i>meyk'wel-eʔwey-</i> ‘to cry’, <i>-eʔwey</i> ‘face’) |
| c. | <i>nəhpəyu:p</i> ‘N, huckleberry bush’ (cf. <i>nepoyon</i> ‘N, wild parsley’) |
| d. | <i>paʔa:p</i> ‘N, ladyfern (dyed in alder juice and used in basket making)’ (cf. <i>paʔah</i> ‘water, juice’) |
| e. | <i>pya:p</i> ‘N, manzanita tree’ (cf. <i>pyah</i> ‘N, manzanita berry’) |
| f. | <i>ʔwəhtu:p</i> ‘N, Indian greens’ (cf. <i>ʔwahtey</i> ‘kelp, seaweed’) |
| g. | <i>neʔmu:p</i> ‘N, vetch’ |

I suggest that these words contain the suffix *-ep'*. When suffixed to vowel-final stems, the suffixal vowel assimilates fully, giving rise to the long vowels shown in (13). The same Yurok morpheme is evident in the numeral system. The classifier numeral suffix for growing things is *-ep'*, as illustrated in (14). When suffixed to C-final stems, as in (14a, c, d), the underlying /e/ vowel surfaces. (Assimilation across glottal stop in (14b) is a regular process in Yurok.)

⁴ Berman (personal communication, 2000) suggests that both forms in (11a) are from an underlying form /hek^wt/, with two diminutives, the first by consonant symbolism (*t > c*) and the second by vowel symbolism plus suffixation. While this could be the case historically, there is no trace of diminutive meaning for the grade 1 form synchronically, nor any synchronic evidence of /hek^wt/.

⁵ I am grateful to Howard Berman for bringing this form to my attention. It is noted in Robins (1958:46, 237).

⁶ I am grateful to Howard Berman for pointing out the analyzability of (13b).

(14) Yurok number words for growing things

- a. *koht-ep'* NUM, one growing thing [B:202]
- b. *naʔ-ap'* NUM, two growing things [B:208]
- c. *nahks-ep'* NUM, three growing things [B:208]
- d. *coʔon-ep'* NUM, four growing things [B:199]
- e. *wetowoyp'* NUM, ten growing things [B:219]
- f. *co:p'* NUM, 2nd element in compound numerals for growing things [B:199]

The forms in (15) support the hypothesis that *-ep'* is cognate with Wiyot *-apʔ* 'hairlike object' [T:52], both reflexes of earlier **-ept*, a classifier for plants and other bushy or hairlike objects.

(15) Wiyot *-apʔ* 'hairlike object' [TN:3]

i. plants

- a. *donotatk-apʔ-ih* 'N, wide roundish leaves' [TN:87]
- b. *hol-apʔ-inih* 'N, hand-grass' [TN:117]
- c. *wadetk-apʔ-iwahl* 'N, leaves' [TN:387]
- d. *walokal-apʔ-ik* 'N, beach pine' [TN:390]
- e. *waretk-apʔ-iwahl* 'N, thimbleberry leaves' [TN:393]

ii. other hairlike or bushy objects

- f. *donotatk-apʔ-ih* 'N, large bunch of hairy objects' [TN:87]
- g. *dot-apʔ* 'N, a big hair-like object' [TN:89]
- h. *haph-apʔ* 'V, tie in a bunch' [TN:98]
- i. *holawol-apʔ-ih* 'V, what kind of feathers' [TN:118]
- j. *kuc-apʔ* 'N, one hair-like object' [TN:213]
- k. *laph-apʔ-oyad* 'V, bundles, ties in bunches' [TN:252]
- l. *parag-apʔ* 'V, (feathered or hairy) drops down' [TN:283]
- m. *rupatar-apʔ* 'V, hair all hangs down' [TN:294]
- n. *tb-apʔ-oyuhwal* 'N, scythe ('goes through hairlike objects with')' [TN:316]

The Wiyot suffix is exemplified in (15), where an association between this morpheme and plants is evident. Also note its classifier-like use in *kucapʔ* 'one hairlike object', *kuc* 'be one'. A further semantic parallel is between YUR *cyu:pʔəʔy* 'N, comb; V to comb oneself' and Wiyot *tbapʔoyuhwal* 'N, scythe 'goes through hairlike objects with'. Wiyot has undergone **e>a*, while Yurok data suggests the development in (16):

(16) **-ept* 'growing things, bushy things, hairy things'

**ept > *ept > *epʔ > ep'*

The changes **ept > *epʔ > ep'* are subsumed under (3). The change of **pt > *pt* in Pre-Yurok is difficult to motivate. Distributional evidence is suggestive: there are only four lexemes with (final) *pt* clusters, as listed in (17).

⁷ It is unclear why */-apʔ/* is realized as [apʔ] in only this form. The reference in the text is to seagulls.

(17) Yurok *pt* clusters

- a. *-hipt* 'N, 4p inalien. 'tongue'
- b. *hopt* 'N, deer sinew; sinew, tendon (of humans)' [B:201] (cf. *ho-* 'to make, build, repair, gather, cause')
- c. *loʔlipt* 'N, sting of insect, fang of snake' (cf. *leʔl-oy-* 'to be burned, to be stung [by a nettle]')
- d. *wenipt* 'N, shelled acorn' (cf. *wənəh* 'grape')

Interestingly, there are no clear Wiyot cognates for the forms in (17). However, (17a) does bear a striking resemblance Hokan forms for 'tongue; cheek', some of which are given for comparison in (18). Sapir (1917:33) reconstructs Proto Hokan **ipali*, and a wealth of comparative evidence for Pomo is found in Oswalt (1977). I suggest that Yurok *-hipt* is a loan from Hokan which post-dates the change in (16). This morpheme appears to be a component of all the lexemes in (17). Given this, there are no attested exceptions to the sound change **pt* > **pt* proposed in (16).

(18) A comparison with Hokan TONGUE/CHEEK (v. Sapir 1917; Haas 1964; McLendon 1964)

Yurok	h	i	p	Ø	ʔ			
Eastern Pomo			b	á:	ʔ			'tongue'
Southeastern Pomo			p'	á	l			'cheek'
Karok		á	p	Ø	r	i:	h	'tongue'
Migueléño Salinan		i	p	a	ʔ			'cheek'
Atsugewi		á	p ^h	Ø	l	i		'tongue'
Chimariko	h	i-	p	e	n			'3sg tongue'

While (18) is suggestive of Yurok borrowing from Hokan, there is also a suggestion that Hokan languages borrowed the Yurok suffix *-Vp'* in plant words. Sapir (1917) presents two cognate sets (119, 124) suggesting a Hokan suffix *-ip* denoting a tree or bush. In Karok, the 'tree, bush' suffix is *-i(:)p* while in Atsugewi it is *-o:p*. Silver (1974) extends the range of meanings to plant, tree, bush, and provides larger Northern Hokan data base. However, the absence of vocalic correspondences along with the non-analyzability of many Hokan forms, the language-internal variation within Karok (*paha:v* 'manzanita green', *xánθi:p* 'black oak', *axvê:p* 'Oregon oak'), and the lack of Hokan cognates for many Karok forms, suggests that Yurok tree, bush and plant names were borrowed into Karok and/or other Hokan languages. And, at the phonological level, the failure of any language but Yurok to show a final ejective /p'/ in this suffix is consistent with borrowing first into Karok, which lacks ejectives, and later diffusion to other Hokan languages.

(19) Arguments for Hokan *-Vp* as loan from Yurok *-ep'* 'CLASS plant, bush, tree' via Karok

- i. Lack of vocalic correspondences in Hokan languages
- ii. Non-analyzability of many Hokan forms
- iii. Karok-internal suffix allomorphy
- iv. Lack of Hokan cognates for many Karok forms with *-Vp*
- v. Absence of final ejective /p'/ in all languages but Yurok

4. SOURCES OF EJECTIVE *c'*. The phoneme /c/ is an alveopalatal affricate, sometimes produced as an alveolar affricate. It occurs word-initially, word-medially and word-finally in Yurok, alone and in clusters, as shown in (20). In none of these words does there seem to be a clear association of the phoneme /c/ with diminutive sound-symbolism as sketched in (8): none of these words show the diminutive vowel [ə], and five of them have [l] where [r] would be expected. I follow Robins (1958) then in positing /c/ as a Yurok phoneme.

(20) The distribution of /c/

i. initially	ii. medially	iii. finally
<i>cele?l</i> 'N, kingfisher'	<i>kucos</i> 'N, grandmother'	<i>legec</i> 'N, mudhen'
<i>co:lew</i> 'ADV, below'	<i>pecolo:?</i> 'N, sugar-pine tree'	<i>kelac</i> 'PRO, 2 nd sg (obj.)'
<i>ckem</i> 'noninfl. V, to count'	<i>pecku</i> 'ADV, up river, upstream'	<i>pkenc</i> 'N, pitch'

The glottalized counterpart of /c/ is /c'/. In contrast to /c/, /c'/ is limited in distribution, occurring underlyingly only in the forms listed in (21).⁸

(21) /c'/ in URs

<i>c'ek</i> 'N, wren'	<i>c'uc'if</i> 'N, bird'	<i>c'ewoloh</i> 'to wash by squeezing in water'
<i>c'e?gi?</i> 'N, black oak'	<i>c'wona?</i> 'N, coat'	<i>nowrep'c'oy</i> 'noninfl V, to weed'
<i>c'igol</i> 'N, saliva, foam'	<i>c'i:yo?</i> 'N, locust'	<i>seyep'c'-</i> 'o-trans V, to singe'
<i>c'ifah</i> 'N, dog'	<i>wəyc'ək(s)</i> 'N, puppy'	<i>c'ume?y</i> 'ADV, how!, extremely'
<i>k'ə:c', k'ə:?</i> 'crow'	<i>sra:c'</i> 'N, tanned skin, quiver'	

Semantically related forms with /t/c' correspondences shown in (22) suggest that glottalization may have once played a role in the Yurok sound-symbolism system sketched in (8) (though see section 6 for potential loan sources for some of these).

(22) Evidence for /t/c' grade correspondence

a. /t/ grade	<i>tek^w, tek^we?s</i> 'N, largest size owl, black' [B:217]
/c'/ grade	<i>c'ek</i> 'N, wren'
b. /t/ grade	<i>tewol, tewolew</i> 'Pacific Ocean'
/c'/ grade	<i>c'ewoloh</i> 'to wash by squeezing in water'
c. /t/ grade	<i>təgəs</i> 'N, rat' < *tVs
/c'/ grade	<i>c'ifah, c'if</i> 'N, dog'
d. /t/ grade	<i>təwə:</i> 'N, locust' ⁹ < *tV:
/c'/ grade	<i>c'i:yo?</i> 'N, locust'
e. /t/ grade	<i>tohtet</i> 'eagle', <i>tohtet</i> 'red-tailed hawk'
/c'/ grade	<i>c'uc'if</i> 'N, bird'

As with the grade pairs in (11), in some cases (22c, d) we see an inversion of sound/meaning consonantism. For example, the vocalism and meaning of *təgəs* 'rat' suggest that this is a grade 2 diminutive form, with 'dog' the grade 1 form, and similarly phonologically for (22d.) The problem then, is that there seems to be a sense in which [c'] must be derived, in this case from /t/, but at the same time, certain [c'] forms must be basic to give rise to derived diminutives. One working hypothesis is that the diminutive vocalism is a secondary development associated with the infix *-eg-, and that the asterisked forms in (22c, d) are the base for the c'-grade and the diminutive. One source of Yurok [c'] then would be an earlier diminutive sound-symbolism. One language reported to have a system of C/C' sound symbolism is Wintu (Broadbent and Pitkin 1964:33):

⁸ It should be kept in mind that surface glottalized consonants also arise through regular morphology, e.g. third person marking on e-class and type I o-class verbs involves glottalization of stem-final Cs. while the imperative singular of certain verbs involves glottalization of the stem-final C plus the suffix -es. In this section I discuss instances of /c'/ which do not have a clear source in the inflectional morphology.

⁹ Perhaps at one time the /t/-form referred to a single locust, and the c'-form to a swarm of locusts.

“Consonant ablaut is characteristic of many word families and frequently involves an alternation between a plain stop-consonant in the basic form and a glottalized, voiced, or aspirated homorganic stop in the “augmented” form (e.g. *qan* ‘armpit’, *q’an* ‘wing’; *tipcu* ‘flip it!’, *t’ipcu* ‘untie it!’).”

What distinguishes these sets from others with *t/c* correspondences is not clear.¹⁰ An alternative hypothesis is that the /c/ grade forms in (22) were borrowed, with back-formation of *t*-grades. This second hypothesis receives some support from the loan search in section 5.

A second source of [c'] is assimilation with a preceding ejective, in particular where *p'c > p'c'*, as shown in (23) (cf. Gensler 1986:51-56). Both of the verbs in (23) appear to be derived from the stem /rep'of-/ 'V, to clear land' with syncope of the stem-final vowel, hardening of the sibilant to an affricate, and assimilatory glottalization. Given the meaning of this verb, the /p'/ could well originate from **epʔ* as discussed in section 2.

(23) Yurok *p'c > p'c'*

- a. *nowrep'c'oy* 'V, to weed' (cf. *rep'of-* '2nd o-class V, to clear land')
- b. *seyep'c'-* 'V, to singe' (cf. *rep'of-* '2nd o-class V, to clear land')

5. A SOURCE FOR EJECTIVE *t'*. Recall from section 2 that third person *-t- in Proto-Algonquian is cognate with third person stem-final glottalization in Yurok. Third person glottalization in Yurok is regular in third person forms of e-class and type I o-class verbs where stem-final /c, k, k^w, p, t/ become ejectives and stem-final fricatives and sonorants are pre-glottalized. Hence, there are some cases where **t-t > tʔ > t'*. Morpheme-internal **tt* clusters have not been reconstructed for PAR or PA, and syncope in the environment **t t* is so far unattested. For several dozen words then, the source of *t'* is mysterious. An exhaustive list of *t'*-initial words is given in (24). Of the 13 distinct stems represented, the five in (24i) show initial reduplication, with *t'* in both the base and reduplicative prefix; the form in (24ii) has a variant without glottalization; forms in (24iii) have *t'k'*, or one form in *t'* with a related form in *k'*; and word in (24iv) all begin with /t'u-/.

(24) Yurok word-initial *t'*

- i. a. *t'et'oyah* 'noninfl. 'V, to quiver, to scuffle'
- b. *t'laʔt'laʔ* 'to drip'
- c. *t'ot'ot'* 'N, sparks from a fire'
- d. *t'ot'ot'* 'N, mud, swampy ground', *t'ot'ot'-it'* 'noninfl. V, to be muddy'
- e. *t'weʔnt'wenoh* 'V, to (try to) pry up repeatedly'
- ii. f. *t'lewolud*, *tlewolud* 'to fall (water)'
- iii. g. *t'k'eroh(s)-* 'V, to strike with the nail of the index finger, to thump';
 t'kert'k'eroh(s)- 'to thump repeatedly'
- h. *t'yoyk^won-* 'V, to be slippery'
- iv. i. *t'umin-* 'V, to be soft, to be tender, to be rotten'
- j. *t'unow-* 'V, to grow (of plants)'
- k. *t'weyk^won-* 'V, to be straight'
- v. l. *t'p'ot(k^w-)* 'V, to be sensible, to come to one's senses'
- m. *t'roʔt'et'* 'N, an edible plant'

While it is tempting to associate glottalization in (24i) with reduplicative sound-symbolism, there are similar reduplications without glottalization, e.g. *kokonew* 'redheaded woodpecker'; *k^weyk^weyur* 'to whistle', *syewsyew* 'to lap (of small waves), to rattle (of strings

¹⁰ Other potential grade sets include: *k'o:ʔy* 'bluejay' / *k'a:c'*, *k'a:ʔ* 'crow' (where *ʔ < *t* in 'bluejay') and *tegiʔn* 'yellow' / *c'eʔgiʔ* 'N, black oak'.

of shells), *tektekon* ‘to be sticky’, *tek^wtek^w* ‘to chop, to hammer’, *tkartkar* ‘to stick together, to mend’. So, the glottalization must have some other source. The related lexemes in (25) suggest the sequence of developments in (26) for at least some **tk* clusters.

(25) *tk* / *t'k* / *t'* correspondences

- a. *t'k'eroh(s-)* / *tkeroh(s-)* ‘to thump’ (cf. *tkeroh(s-)* ‘to thump’, ‘to thump repeatedly’ *t'k'ert'k'eroh(s-)* / *tkertkeroh(s-)* ‘to thump repeatedly’ (cf. WIY *tkana* ‘breathes’, *tatkarad* ‘beats’)
- b. *t'yoyk^won-* ‘V, to be slippery’; *k'yoykwon-* ‘to be slimy’; *t'ot'ot'* ‘N, mud, swampy ground’; *tkoʔ, tkolon* ‘mud’. (cf. WIY *tukat* ‘is muddy’)

(26) **tk* > *t'k* > *t'k'* > *t'/k'*

Internal evidence, coupled with a potential Wiyot cognate suggests the sound change **tl* > *t'l*, *tl*, possibly in progress. There are no word-initial *tl* clusters in Yurok, with the exception of those shown in (27):

(27) **tl* > *t'l*, *tl*

t'laʔt'laʔ ‘to drip’; *t'lewolut, tlewolut* ‘to fall (water)’; *tla:moks-* ‘to leak’; *tlew* ‘N, waterfall’ [B]; WIY *tolit* ‘falls out, drips’

In summary, the correspondences in sections 2-5 together with Berman (1982a, 1984, 1990) and Goddard’s (1975, 1990) earlier etymologies provide strong support for ejectives or glottalized obstruents as innovations in Yurok. Proto-Algonquian and Wiyot reflect the proto-Algonquian-Ritwan situation, where ejectives were absent. This runs counter to the proposals of Proulx (1984, 1985, 1991, 1992, 1994), where glottalized obstruents are posited for the proto-language, being lost in proto-Algonquian, and in some cases realized as aspirates in Wiyot.

6. LOANS. In this section I investigate possible loan sources for (i) Yurok words with *Ct* clusters which seemingly have not undergone rule (3) (see Appendix I); and (ii) Yurok words with glottalized obstruents /*p'*, *t'*, *c'*, *k'*/ which are not the result of inflectional morphology, and which do not have one of the potential sources discussed in sections 2-5 (see Appendix II). There is good evidence of bilingualism in Yurok and Karok at Wecpus, of Yurok and Tolowa at Requa, and of intermarriage between Yurok and all surrounding tribes throughout the 19th century (Pilling 1978:137).

Words from Appendix I with unaccounted for *Ct* clusters are listed in (28).

(28) Monomorphemic *Ct* clusters in Yurok

- a. *hoktk-* ‘V, to butcher, to cut up’ (cf. *hokck-* ‘to chip arrowheads’) [B:200]
- b. *hək^wtəks* ‘N, small basket used as drinking cup’ (cf. *hek^wc* ‘eating basket’)
- c. *keptoh* ‘N, horse neck, Washington clam’ (cf. *kepse-* ‘V, to lie in ambush’)
- d. *lek^wtemet(-)* ‘V, to dig’ (cf. *rek^wcem-* ‘V, to hollow out’)
- e. *leptenok* ‘N, cloud’ (cf. WIY *laptohw* ‘cloud’)
- f. *mek^wtaʔ* ‘N, stump’ (cf. *məkəʔəkəʔ* ‘N, hip’, but *lepoh* ‘hip’ [B:205])
- g. *nektoʔ* ‘V, to collide, bump into’ [B:209] (cf. *nekcen-* ‘V, to meet’)

In section 2 I commented on some of these in the context of the diminutive sound symbolism. Loans can be integrated into the system of sound symbolism (e.g. *ʔəpləs* ‘apple’), so the fact that all words in (28) appear to have multiple grades does not argue for their inherited status. And there are no clear Wiyot cognates for the forms in (28) either, with the exception of (28e), and possibly (28c): WIY *katbohy* ‘quahogs’ is similar to *keptoh* (28c), though the normal YUR/WIY correspondence is *m/b*, and an irregular metathesis is

also needed. All are potential loans then, and a search has been made for possible source forms in neighboring languages.

Yurok's immediate neighbors were: Tolowa to the north along the coast; Karok to the northeast and east; Hupa to the southeast; Chilula to the south just inland; and Wiyot to the south along the coast. An initial search involved Tolowa, Hupa and Karok. A second search involved working outwards from these areas to Shasta, Chimariko, and Klamath. None of these searches yielded positive results, with one exception shown in (29). However, given the number of related forms in (11b), and the lack of Hokan cognates for the Chimariko form, it is likely that this word was borrowed from Yurok or Wiyot into Chimariko.

(29) YUR *leptenok* 'N, cloud', *lapsuway-* 'to be covered in mist'; WIY *laptohw* 'cloud', CHI *a:ptum* 'fog' (cf. 11b).

If the clusters in (28) are inherited from **Ct* and are exceptions to (3), then their exceptionality appears to be related to the transparent relationship between the two grade forms, with (3) either blocked in **Ct* due to sound symbolism, or restored there via analogy.

The majority of other forms in Appendix I with *Ct* clusters involve morpheme boundaries and are assumed to have evolved after the sound change in (3). In particular, out of the 19 remaining words, 5 involve initial CVC- reduplication, which appears to be a Yurok innovation within Algic. Some of these may be based on borrowed stems, for example (30).

(30) Stem loan from Karok (Hokan), with Yurok CVC- reduplication

YUR *tek+tekon-* 'V, to be sticky'; Karok *if-tákan* 'to stick, adhere' (Haas 1980:71).

Sources for Yurok /c/, k', k^w, p', t/ have been proposed. In Appendix II, all words with initial, medial and final ejectives are listed, where it is clear that the ejective is not a result of inflectional morphology. Forms with potential sources discussed earlier are noted. The residue have no obvious source. Of these, many have Wiyot cognates, as noted, and hence, are unlikely loans.¹¹ What remains are ejectives with potential loan sources. There are no apparent loans from the Athapaskan languages, Tolowa and Hupa. However, some Hokan and Penutian sources are possible, as suggested by the resemblances in (31) and (32).¹²

(31) Hokan resemblances

Abbreviations and data sources: SH Shasta (Silver 1964); K Karok (Bright 1957); CH Chimariko (Dixon 1910); EP Eastern Pomo (McClendon 1964)

<u>Yurok</u>	<u>Resemblant forms</u>
a. <i>c'ifah</i> , <i>c'if</i> 'dog'	SH <i>c'i:wa</i> 'dog' K <i>cisi:h</i> 'dog'
b. <i>c'uc'if</i> 'bird'	SH <i>c'i:c'a:x</i> 'bird' K <i>acvi:v</i> 'bird' * <i>c'iwita</i> (McLendon 1964:129)
c. <i>sra:c'</i> 'N, tanned skin, quiver'	EP <i>fī:c'</i> 'rabbit-skin blanket'

¹¹ Though it is always possible that the word was first borrowed into both languages, with an ejective in Yurok and without one in Wiyot. However, where sound correspondences between the two languages appear to be regular, I disregard this possibility for the moment.

¹² Yurok alveopalatal affricates /c, c'/ are represented as in other languages in (31-32) to assist in comparison. For Chimariko, I do not currently have access to Edward Sapir or John P. Harrington's field notes, in which ejectives are transcribed; forms included are from Dixon (1910) which does not transcribe ejectives.

(32) Penutian resemblances

Abbreviations and data sources: KL Klamath (Barker 1963); Ph Hill Patwin; W Wintu ; Phr Hill Patwin and River Patwin (Broadbent and Pitkin, 1964).

<u>Yurok</u>	<u>Resemblant forms</u>
a. <i>c'ek</i> 'wren'	KL <i>c'ik'as</i> , /c'ik'-/ 'bird' KL <i>c'ikdo</i> 'marsh hawk' KL <i>c'iq-t'i:t'i</i> 'tule wren' KL <i>c'eqs</i> 'Brewer's blackbird'
b. <i>c'ewoloh</i> 'to wash by squeezing in water'	Ph <i>c'ewayho</i> 'soup paddle' KL /c'iwl/ 'puts liquid on top of' KL <i>c'iw'a:l'a</i> 'puts liquid on the end of' KL <i>c'iwlo:la</i> 'takes liquid off the top of'
c. <i>wəyc'ək(s)</i> 'puppy' (DIM of * <i>wayc'ak</i>)	KL <i>wac'a:k</i> 'dog' /wac-'a:k/
d. <i>k'ə:c', k'ə:ʔ</i> 'crow'	KL <i>q'e:c</i> 'magpie, <i>Pica melanoleus hudsonica</i> '
e. <i>t'et'oyah</i> 'to quiver, scuffle'	W <i>t'or</i> 'to rattle', <i>,(ete:ra</i> 'to shiver' KL /t'iw / 'shiver from palsy or old age' KL <i>t'iw't'iw'a</i> 'shivers, trembles'
f. <i>t'ot't'ot</i> 'N, mud, swampy ground'	KL /t'o-/ 'mud'?? KL <i>t'obo:q</i> 'mud' KL <i>t'op'es</i> 'mud, a muddy place' KL <i>t'oho:</i> 'mudhen' Ph <i>ʔ'opa</i> 'mud'
g. <i>t'k'eroh(s)-</i> 'to strike with the nail of the index finger. to thump'	W <i>t'aka:</i> 'to pound' Ph <i>t'ake</i> 'to pound' Ph <i>t'ak'a</i> 'to slap'
h. <i>ket'oks, ketoks</i> 'to be flat'	Phr <i>t'ekel</i> 'palm of hand' KL <i>t'aq'taq'ant</i> 'in the flat, where it's flat, bare'
i. <i>ket'etew</i> 'palm of hand'	Phr <i>t'ekel</i> 'palm of hand' KL <i>t'aga:q</i> 'sole of the foot'
j. <i>kət'əʔ</i> 'N, bald person'	KL /t'aq'-/ 'be bare, bald, grassless' KL <i>t'aq'taq'i</i> 'bare, smooth, grassless' KL <i>st'aqcwo:latk</i> 'bald'

Sound symbolism involving word-initial /t'/ with possible reduplication may be a feature borrowed from Penutian (32e-i above).¹³

In sum, there is a suggestion here that most if not all cases of word-initial /c'/ and /t'/ in Yurok are the result of borrowing.

¹³ Callaghan (1964:47, fn.6) lists four roots in Lake Miwok with potentially similar origins: *t'áka-ti* 'to slap'; *t'áp-šetuka* 'to click'; *t'íp-t'ipiši* 'to flip (said of a fish)'; *t'úp-šetji* 'a short piece' (cf. Bodega Miwok *túp-kuŋi* 'to break off', possibly associated with the sound of breaking something off). And, compare Karok *ti:pti:p* 'chain fern, *Woodwardia radicans*: said to be named from the noise made in a game involving it'.

REFERENCES

- BARKER, M. A. R. 1963. Klamath dictionary. UCPL 31. Berkeley and Los Angeles: University of California Press.
- BERMAN, HOWARD. 1982a. Two phonological innovations in Ritwan. *IJAL* 48.412-20.
- BERMAN, HOWARD. 1982b. A Supplement to Robin's Yurok-English Lexicon. *IJAL* 48.197-241.
- BERMAN, HOWARD. 1984. Proto-Algonquian-Ritwan verbal roots. *IJAL* 50.335-42.
- BERMAN, HOWARD. 1990. New Algonquian-Ritwan cognate sets. *IJAL* 56.431-34.
- BERMAN, HOWARD. 1986. A Note on the Yurok Diminutive. *IJAL* 52.419-31.
- BLEVINS, JULIETTE. 2001. *Nhanda: An Aboriginal language of Western Australia*. Oceanic Linguistics Special Publications in Linguistics, Number 30. Honolulu: University of Hawai'i Press.
- BRIGHT, WILLIAM. 1957. The Karok language. UCPL 13. Berkeley and Los Angeles: University of California Press.
- BRIGHT, WILLIAM. 1964. The phonology of Smith River Athapaskan (Tolowa). *IJAL* 30.101-08.
- BROADBENT, SYLVIA AND HARVEY PITKIN. 1964. A comparison of Miwok and Wintun. *Studies in Californian Linguistics*, ed. by William Bright. UCPL 34.19-45. Berkeley and Los Angeles: University of California Press.
- DIXON, ROLAND B. 1910. The Chimariko Indians and language. *UCPAAE* 5(5).295-380.
- GENSLER, ORIN. 1986. Phonology of Yurok. Unpublished ms, HCILP. University of California, Berkeley.
- GODDARD, IVES. 1975. Algonquian, Wiyot, and Yurok: proving a distant genetic relationship. *Linguistics and Anthropology: In Honor of C. F. Voegelin*, ed. by M. Dale Kinkade, Kenneth L. Hale, and Oswald Werner, 249-62. Lisse: Peter de Ridder Press.
- GODDARD, IVES. 1990. Algonquian linguistic change and reconstruction. *Linguistic Change and Reconstruction Methodology*, ed. by Philip Baldi, 99-114. Berlin: Mouton de Gruyter.
- GOLLA, VICTOR. 1970. Hupa grammar. University of California, Berkeley dissertation.
- HAAS, MARY R. 1958. Algonkin-Ritwan: the end of a controversy. *IJAL* 24.159-73.
- HAAS, MARY R. 1964. California Hokan. *Studies in Californian Linguistics*, ed. by William Bright, 73-87. UCPL 34. Berkeley and Los Angeles: University of California Press.
- HAAS, MARY R. 1970. Consonant symbolism in northwestern California: a problem in diffusion. *Languages and Cultures of Western North America: Essays in Honor of Sven S. Liljeblad*, ed. by Earl H. Swanson, Jr., 86-96. Pocatello: Idaho State University Press.
- MCLENDON, SALLY. 1964. Northern Hokan (B) and (C): A comparison of Eastern Pomo and Yana. *Studies in Californian Linguistics*, ed. by William Bright, 126-44. UCPL 34. Berkeley and Los Angeles: University of California Press.
- MCLENDON, SALLY. 1975. A grammar of Eastern Pomo. UCPL 74. Berkeley and Los Angeles: University of California Press.
- OSWALT, ROBERT L. The Hokan word for 'tongue': the Pomo evidence. In *Proceedings of the 1976 Hokan-Yuman languages workshop*, ed. by James E. Redden, 69-78. Carbondale: Southern Illinois University.
- PITKIN, HARVEY. 1963. *Wintu Grammar*. Berkeley: University of California dissertation.
- PROULX, PAUL. 1984. Proto-Algic I: phonological sketch. *IJAL* 50.165-207.
- PROULX, PAUL. 1985. Proto-Algic II: verbs. *IJAL* 51.59-94.
- PROULX, PAUL. 1991. Proto-Algic III: pronouns. *Kansas Working Papers in Linguistics* 16.129-70.
- PROULX, PAUL. 1992. Proto-Algic IV: nouns. *Kansas Working Papers in Linguistics* 17.11-57.
- PROULX, PAUL. 1994. Proto-Algic V: doublets and their implications. *Kansas Working Papers in Linguistics* 19.115-82.
- ROBINS, R. H. 1958. *The Yurok Language, Grammar, Texts, Lexicon*. UCPL 15. Berkeley and Los Angeles: The University of California Press.
- SAPIR, EDWARD. 1913. Wiyot and Yurok, Algonkin languages of California. *American Anthropologist* 15.617-46.

- SAPIR, EDWARD. 1917. The position of Yana in the Hokan stock. University of California Publications in American Archaeology and Ethnology, 13.1-34.
- SILVER, SHIRLEY. 1964. Shasta and Karok: a binary comparison. Studies in California Linguistics, ed. by William Bright, 170-81. Berkeley: University of California Press.
- SILVER, SHIRLEY. 1966. The Shasta language. Berkeley: University of California dissertation.
- SILVER, SHIRLEY. 1974. Some Northern Hokan plant-tree-bush forms. Journal of California Anthropology (Riverside: Malki Museum Press) 1.102-109.
- TEETER, KARL V. 1964. The Wiyot Language. UCPL 37. Berkeley and Los Angeles: University of California Press.
- TEETER, KARL. 1974. Some Algic etymologies. IJAL 40.197-201.
- TEETER, KARL V. AND JOHN D. NICHOLS (EDS.). 1993. Wiyot Handbook. Vols. 1 and 2. Algonquian and Iroquoian Linguistics Memoir 10. Winnipeg.

APPENDIX I

Yurok *Tʔ* clusters. *Tʔ* an obstruent (stems with *Tʔ* are not multiply listed)

Where obvious, morpheme boundaries are marked with ‘-’;
 reduplicative boundaries are marked with ‘+’.
 asterisked forms look like exceptions to the sound change in (3);
 other forms are assumed to have derived clusters which post-date the change in (3).

- **hoktk-* ‘V, to butcher, to cut up’ (cf. *hokck-* ‘to chip arrowheads’) [B:200]
- **həkʷtəks* ‘N, small basket used as drinking cup’ (cf. *həkʷc* ‘eating basket’)
- kep-ten-* ‘V, to sing a lullaby’ (cf. *kepturʔ* ‘lullaby’) [B:201] (cf. *ten* ‘much, many’, *woʔkegep* ‘cricket’ with noninflected intensive form *kegep*)
- **keptoh* ‘N, horse neck, Washington clam’
- kikʷ-ten* ‘N, moss, rotten wood’ (cf. *kekʷsah* ‘N, apron of bark’, *ten* ‘much, many’)
- **lekʷtemet(-)* ‘V, to dig’ (cf. *rekʷcem-* ‘V, to hollow out’)
- **lepten-ok* ‘N, cloud’ (cf. WIY *laptolhw* ‘cloud’)
- **mekʷtaʔ* ‘N, stump’ (cf. *məkcaʔəkət* ‘N, hip’)
- nek-tey* ‘V, to admire the cleverness of a person’ (cf. *nekomy* ‘ability’)
- **nektəʔ* ‘V, to collide, bump into’ [B:209] (cf. *nekcen-* ‘V, to meet’)
- pu:k-tek* ‘N, deer’ [B:212] (cf. *pu:k* ‘deer’)
- swe-(h)oktk-elo:ʔwey-* ‘V, to be warty’ (compound with *hoktk-* as 2nd member)
- sʔok-toy* ‘V, to be light brown’ (cf. *se-wom* ‘brown acorn’)
- tek+tekon-* ‘V, to be sticky’ (cf. Karok *if-tákan* ‘to stick, adhere’)
- tek-tes-* ‘V, to be angry’
- tek-tet-* ‘V, to build, erect’ [B:217]
- tek-tey* ‘N, stomach’ [B:217]
- tek-(toy-)* ‘V, to be situated, to grow (plants)’
- tkək+tkekoh(s-)* ‘V, to jab repeatedly’ (cf. *tkekoh(s-)* ‘to jab, pierce’) [B:218]
- tok+toh* ‘V, to be of a certain size, of a round object’ [B:218] Robins (1958:257) identifies *tok-* as a reduplicative prefix.
- tək+tək* ‘N, mallard’ [B:218] (from English ‘duck’ ?)
- təkʷtəm* ‘N, dentalium shell’ (Robins 1958:259 notes this is a plural bound form.) (cf. 12a)
- təkʷtəp* ‘N, ax’ (diminutive NOM of *tekwš-* ‘to cut, to fell’)
- tu:p+tu:p* ‘N, swordfern’
- wik-tuʔ* ‘ADV, inside’ (cf. *wik* ‘ADV, there’)

APPENDIX II

Yurok ejectives /c', k', kʷ, p', t'/ which are not the obvious result of inflectional morphology

/e'/

i. initial

- c'ek* 'N, wren' (20a)
- c'eʔgiʔ* 'N, black oak' (footnote 8)
- c'igol* 'N, saliva, foam' (cf. WIY *bicot* 'N, saliva')
- c'ifah* 'N, dog' (20c)
- c'i:yoʔ* 'N, locust' (20d)
- c'uc'if* 'N, bird' (20d)
- c'wonaʔ* 'N, coat' (cf. *twegoh* 'coon, raccoon')
- c'ewoloh* 'to wash by squeezing in water' (20b)
- c'umeʔy* 'ADV. how!, extremely' (cf. *tuʔ* 'ADV and, but')

ii. medial

- c'uc'if* 'N, bird' (20d)
- nowrep'c'oy* 'noninfl. V, to weed' (21a)
- seyep'c'* 'o-trans V, to singe' (21b)
- wəyc'ək(s)* 'N, puppy' (cf. *teykelut-* 'to be a biter [of a dog]')

iii. final

- k'ə:c', k'ə:ʔ* 'crow' (footnote 8)
- sra:c'* 'N, tanned skin, quiver' (cf. *srahkʷoh* 'loincloth'; *srekʷahpi:t* 'breechcloth', *-slekʷ* 'clothes')

/k'/

i. initial

- k'ep'ew* 'inal. N, grandchild' (see also *-k'ep'*, *-k'ep'c'em* 'inalian. N, daughter-in-law')
- k'epuloyoh* 'mythological character, son of wohpekumew'
- k'errep* 'widow' (see also *k'ewen* 'widow who has cut her hair as a sign that she will not marry again')
- k'etk'et* 'sweet coltsfoot'
- k'ewet-* 'e-class trans., to wash, to dye'
- k'irwəʔəʔəy* 'to be gray-haired'
- k'limow-* 'to feel ill'
- k'loyk-* 'to wilt' (see also *k'lo:w-* 'to die down (of a fire), to be drowsy')
- k'nek'nek'* 'V, to pulse, to beat (of the heart)'
- k'nə:k-* 'V, to wilt'
- k'oho:* 'unmarried mother'
- k'oho:lop'* 'N, a liquid in the process of solidifying'
- k'o:k's-* 'to cut up, to split (fish, etc.)'
- k'o:ʔy* 'blue jay'
- k'ə:c', k'ə:ʔ* 'crow' (footnote 8)
- k'yow* 'swan'
- k'yoykʷon-* 'to be slimy' (cf. *t'yoykʷon-* 'to be slippery') (23b)

ii. medial

- Vk's, -ok's* 'CLASS suffix, flat things'
- cek'or* 'N, periwinkle' (12a)
- hək'əy-* 'e-class intran. V, to hide'
- mek'oh* 'noninfl. V, to hit right in the center (e.g. in target shooting)' (5a)
- mik'olum-* 'e-class trans V, to swallow, to gulp down'
- pek'ew-* 'V, to have something stuck in one's throat'
- pek'onoc-* 'to set on fire' (see also *pək'ək'* 'N, kindling wood')
- pənek'əh* 'hand length' (cf. *pənək* 'N, hand measure')
- rek'i:n-, rek'i:now-* 'pl. V, to sit'
- ri:k'ew* 'shore'
- t'k'eroh(s)-* V, to strike with the nail of the index finger, to thump'; (23a)
- tok'olew* 'noninfl. V, to coo (of a baby)'

ʔek'eroʔ 'N. lamp; noninfl. V to light'

ʔuk'irʔuʔ 'N. salmonberry juice'

iii. final

-Vk', ek' 'CLASS suffix, long thin things (worms, ropes, etc.)' (also *-Vk''*)

cek'cek' 'N. small brown bird with sharp nose' [Kr] (cf. *tək+tək* 'N. mallard')

megi:gonemek' 'e-class trans. V. to poke a fire'

na:na:k' 'N. ring of black and white dots round the bottom of a basket'

stohstek' 'small fir tree'

wenoʔomek' 'N. point at which another rib is added in a basket frame'

/k''/

i. initial (unattested)

ii. medial

cek''eL 'N. flat place in front of a cliff' [B:198], see also *cik''ar* 'N. chair, stool'

-cnewk''os 'inalien. N, son-in-law'

corek''ik 'N. hell'

cyu:k''en- 'e-class intr. V. to sit' (see also *cyu:k''ec-* 2nd o-class trans. V. to steer [a boat])

hək''əh 'N. rabbit' (5c)

kenik''ec(-) 'V. to steer (a boat)' (cf. *cyu:k''ec-* 2nd o-class trans. V. to steer [a boat])

keromek''oyS 'V. to control water. to turn off' (cf. *keromekin* 'to twist, lock')

lek''oh 'to drag oneself along, to crawl' [B:204]

mek''oh 'N. pus'

nek''ohs- 'e-class intr. V. to dry surf fish'

no:loyk''el- 'e-class intr. V. to be feeble, to be weak'

rek''oy 'river mouth, Requa' (cf. *ri:k'ew* 'N. shore, sandbar')

slu:k''oh 'N. space at the foot of the sweathouse ladder'

srek''ahpi:t 'N. breechcloth' (cf. *srek''wepi:t* 'diaper')

sru:k''i 'N. columbine flower'

syuk''əc- 'V. to stretch one's legs'

tkek''e:l, tkek''eʔr 'N. pot'

iii. final

-Vk'' classifier suffix (long, thin things)

/p'/

i. initial (unattested)

ii. medial

ckip'ət 'N. a plant (sp. ?snowdrop)'

ck''ep'orit- 'e-class intr. V. to be brushy' (cf. *ka:p'et* 'brushwood', *ka:p'olit-* 'to be brushy', *tkwep'olit-* 'V. there is low scrub', *cewitkep'-* 'to clear an area' [B:198], *sloytkep'-* 'to sweep clean' [B:215])

curp'əy 'noninflected V. to comb' (cf. *curp'əʔy* 'N. comb')

hop'ew 'N. (site of) Klamath'

hoyp'if- 'e-class intr. V. to have in itch'

həp'əʔn '4p, inalien. noun. nose' (cf. *ʔup'əʔn* 3p pron. prefix form)

hup'o: 'N. Hupa' (cf. *hup'o:laʔ, hup'o:la:ʔ* 'N. Hupa Indian')

kep'eyt 'V. to be deaf'

kep'et 'N. hole in a tree, hole in the ground, house pit' (cf. *kep'oks* 'N. opening'; *kep'ot* 'a hollow, a clearing, a space')

kep't'oh 'V. to feed an infant soft food'

kleʔup'oh 'N. clover'

lep'ew 'V. to tidy up' (cf. *lesep'ew* 'N. storage place'; *rep'of-* 'V. to clear land')

ʔmeyep'iʔr 'N. rattlesnake'

-ʔp'et 'inalien. N, eyelash'

mep'oc 'N. beard, mustache, whiskers'

nowrep'e'oy 'noninfl. V. to weed' (2 1a)

rup'kah 'noninfl. pl. V. to gang up on'

skep'ol 'N. *wyethia angustifolia*'

so:nep'- 'to arrange'

wo:p'i. *wo:p'ik* 'ADV out in the water (of an island)
?ahkecoyp'et 'N, mass of briar bushes' (cf. *?ahkecoyp* 'N, thorn, prickle')
?ep'eL 'CONJ if; ADV should'
?up'es 'backbone of fish (taken out and dried)'
?up'Eh 'N, backbone'

iii. final

cokco:p' 'drum' (cf. *cokco:p'a?r* 'N, drumstick; noninflected V, to drum')
 -*ep* 'NUM suffix for growing things' (cf. *co:p'* 'NUM, 2nd element in compound NUMs, growing things'; *wetowoyp'* 'NUM, ten (growing things)'). Vowel assimilates to preceding vowel in:
ka:p' 'N, leaf, leaves, greenery, brush, grass' [B:201] (cf. *ka:p'et* 'N, brush, vegetation');
me?ykwelu:p' 'N, poison oak'; *nəhpəyu:p'* 'N, huckleberry bush'; *pa?a:p'* 'N, ladyfern (dyed in alder juice and used in basket making)'; *pya:p'* 'N, manzanita tree' (cf. *pyah* 'N, manzanita berry'); *?wəhtu:p'* 'N, Indian greens' (cf. *se?repcu:p'* 'N, shavings', *?ahkecoyp* 'N, thorn, prickle') (see section 2).
?ko:p' 'N, slime'
mətələp' 'nasal mucus' (cf. *?əkəyəp'*)
re?ep' 'noninfl. V, to be concentrated in a given direction, of a wish or a prayer; to be tossed in a given direction in the stick game; to point in a given direction, of a person'
scep' 'V, to land, of a boat' [B:214]
stek'wop' 'noninfl. imp. V, to reach a crest of high water, to reach the highest point of the tide'
?wə:p' 'N, butterfly' [B:220]
 -*?rep'* 'N, eyebrow' [B:222]
?əkəyəp' 'noninfl. V, to flow slowly, of something thicker than water (e.g. blood, slime)'

ʔ'

i. initial

t'et'oyah 'noninfl. V, to quiver, to scuffle'
t'k'eroh(s)- 'V, to strike with the nail of the index finger, to thump'; (23a)
t'lewəhət, t'lewəhət 'to fall (water)'. *t'la?t'la?* 'to drip' (25)
t'ot'ot 'N, sparks from a fire'
t'ot'ot 'N, mud, swampy ground'. *t'ot'ot-it* 'noninfl. V, to be muddy' (23b)
t'ro?t'et' 'N, an edible plant'
t'p'ot(kʷ-) 'V, to be sensible, to come to one's senses'
t'weykʷon- 'V, to be straight'
t'we?nt'wenoh 'V, to (try to) pry up repeatedly'
t'yoykʷon- 'V, to be slippery' (23b)
t'umin- 'V, to be soft, to be tender, to be rotten'
t'unow- 'V, to grow (of plants)'

ii. medial

ka?mt'em 'N, basket for valuables'
kep't'oh 'noninfl. V, to feed an infant soft food'
ket'etew 'N, palm of hand' [B:202] [4]
ket'oks, ketoks 'noninfl. V, to be flat' (cf. *ketoksit* 'N, a level place', *kət'ə?* 'N, bald person')
ket'ey 'noninfl. V, to park, to moor'
ket'oh 'noninfl. imp. V, there is a lagoon' (cf. *ket'ul-* 'e-class intr. V, to form a pool, to form a lake' *tewol, tewolew* 'Pacific Ocean'; *ket'op-* 'to be in a pot (food), to be barked (shins)')
kitwət'əyf' 'ADV, very, excessively'
kot'uskini 'CONJ however, whatever'
tʃkʷət'ə:? 'noninfl. V, to pass gas through the vagina' (cf. *tʃkʷ'et, -ykw'et* 'penis'; *tʃkʷətəkʷs* 'to spring back, to be supple')
nohpət'ekʷs 'N, bug'

iii. final (unattested)

REPORT 11

**SURVEY OF CALIFORNIA AND
OTHER INDIAN LANGUAGES**



**PROCEEDINGS OF THE MEETING OF THE
HOKAN-PENUTIAN WORKSHOP**

**June 17-18, 2000
University of California at Berkeley**

**Laura Buszard-Welcher, Editor
Leanne Hinton, Series Editor**

REPORT 11

**SURVEY OF CALIFORNIA AND
OTHER INDIAN LANGUAGES**

**PROCEEDINGS OF THE MEETING OF THE
HOKAN-PENUTIAN WORKSHOP**

**June 17-18, 2000
University of California at Berkeley**

Laura Buszard-Welcher, Editor

Leanne Hinton, Series Editor

Copyright © 2002
by the Survey of California and Other Indian Languages
cover design by Leanne Hinton (Santa Barbara Chumash rock painting)

PREFACE

The year 2000 was the 30th anniversary of the first Hokan languages conference. That first conference was imagined, planned and run by Prof. Margaret Langdon at the University of California at Berkeley, with the assistance of Prof. Shirley Silver of California State University at Sonoma. Almost every year since then, Hokan workshops and then Hokan-Penutian workshop in the previous few years had been either very small or even cancelled due to the lack of a sufficient number of people submitting paper titles. There was some thought of abandoning the Hokan-Penutian workshops altogether. Margaret felt that it would be a shame for this long tradition to end without a last hurrah, and so I offered to hold a Hokan-Penutian Workshop at Berkeley in conjunction with the “Breath of Life” Language Workshop for California Indians. The Breath of Life Workshop is a biennial gathering of California Indians here at Berkeley, and is designed primarily for people whose languages have no speakers left. We give them tours of the campus archives and show them how to use publications, fieldnotes and recordings of their languages for their own purposes – primarily language learning and teaching. I felt it would be a good thing to show the linguists who spent their careers working on these endangered languages to see the use their work is being put to by the descendents of the very people they worked with years ago. Therefore, the first session of the Hokan-Penutian Workshop consisted of presentations by the participants in the Breath of Life Workshop. The anticipation of this treat may have played a role in bringing a relatively large crowd here in 2000, perhaps along with billing the workshop as “The (Last?) Hokan-Penutian Workshop.” Sixteen papers (not counting the Breath of Life presentations) were given at the workshop, eight of which are published in this volume.

With both the Hokan and Penutian hypotheses in doubt, there is always a question as to which languages should be included at the workshop. Although my sympathies are with the “splitter” camp in linguistics, I’m definitely a social lumpener. Therefore, for purposes of the workshop I chose to define “Hokan” and “Penutian” as rubrics rather than language stocks, and advertised the workshop as being “for any language that has ever been hypothesized to be Hokan or Penutian.” We thus have papers ranging from Tsimshianic to Zuni, and—oh, well – we even accepted Juliette Blevin’s excellent paper on Yurok, an Algic language, which has never been hypothesized as either Hokan or Penutian.

At the business meeting held at the end of the Hokan-Penutian workshop, no-one wanted to say that this was the last one. Instead, we voted to continue with the workshops on a biennial basis, to be held here at Berkeley from now on, overlapping with the Breath of Life Workshop as it did in 2000. As I write this preface, the two years have already passed, and we are preparing for the 2002 Breath of Life Workshop, which this year will overlap with – not the Hokan-Penutian Workshop – but the 50th Anniversary Celebration of the Survey of California and Other Indian Languages. The upcoming conference for the Celebration subsumes participants in Hokan-Penutian Workshops. I imagine that our biennial gathering will continue on; whether it will be a Hokan-Penutian workshop in 2004 or something broader than that remains to be seen.

Leanne Hinton
Director of the Survey of California and Other Indian Languages

**PROCEEDINGS OF THE MEETING OF THE
HOKAN-PENUTIAN WORKSHOP**

June 17-18, 2000
University of California at Berkeley

Juliette Blevins <i>Notes on Sources of Yurok Glottalized Consonants</i>	1
Catherine Callaghan <i>Problems of Writing a Historical Grammar</i>	19
Victor Golla <i>The History of the Term "Penutian"</i>	24
Anthony Grant <i>Fabric, Pattern, Shift and Diffusion: What Change in Oregon Penutian Languages Can Tell Historical Linguists</i>	33
Margaret Langdon <i>The Story of Johnny Bear: A European Tale in 'Iipay Kumeyaay</i>	57
Lynn Nichols <i>Two Zuni Passives</i>	72
Marie-Lucie Tarpent <i>Tsimshianic l-Initial Plurals: Relics of an Ancient Penutian Pattern</i>	88
Esther Wood and Leanne Hinton <i>A Report on George Grekoff's Collection of Chimariko (and Other) Materials</i>	109
Leanne Hinton <i>The Proceedings of the Hokan-Penutian Workshops: A History and Indices</i>	115