

ON SOME PROBLEMATIC PHONOLOGICAL ALTERNATIONS
IN KITSAI TEXTS

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Kitsai is a North American Indian language of the Caddoan family, which includes (?Adai), Arikara, Caddo, Hainai, Skiri and South Band Pawnee, Tawakoni-Waco, and Wichita (Taylor 1963; Parks 1979). The language was last spoken near Anadarko, Oklahoma, and is primarily attested in a corpus of ethnological texts elicited by anthropologist Alexander Lesser from Kai Kai, the last living fluent speaker, during the summers of 1929 and 1930. Kai Kai, a woman then in her eighties, apparently lived until the late 1930s or 1940s, and the language became extinct with her death (Lesser 1977:44). Four of Lesser's total corpus of 25 texts have been published as 'Kitsai Texts' (Lesser 1977 in Parks 1977), and linguistic analysis of the Kitsai language to date is represented by Bucca and Lesser 1977, and by Vantine 1980.

The purpose of this essay¹ is to present philological evidence for my contention that certain phonetic surface phenomena, transcribed in 'Kitsai Texts' (Lesser 1977) as aspiration and palatalization, in fact represent neither of these features, but instead reflect altogether different phonological processes of Kitsai. My intention is to provide other workers with some assistance in their use of these texts, and also to illuminate several aspects of Kitsai phonological and morphological structure.

Unless otherwise noted, all cited Kitsai forms are from Lesser 1977; the only exceptions are a few forms cited in Bucca and Lesser 1969, in transcriptions at variance with forms attested in the published texts. These I have indicated below by 'BL69:___' next to the pertinent forms. Lesser transcribed the texts according to the recommendations of the 1916 committee report of the American Anthropological Association (A.A.A. 1916), and it is that transcriptional system, apart from some minor editorial revisions, which was followed when the texts were published. The only orthographic change from Lesser 1977 has been to indicate aspiration by a raised h instead of an apostrophe, in order to make this feature more salient to the reader.

The segmental and suprasegmental phonemes of Kitsai, set forth in a conventional inventory presentation, are as follows:

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Kitsai Phonemic Inventory²

	Labial	Alveolar	Palatal	Velar	Glottal
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Obstruents

Stops		t		k	ʔ
Affricates		ts			
Spirants		s			h

Sonorants

Nasal		n			
Median	w	r	y		

Vowels

	Front	Back
High	i	u
Mid-Low	e	a

Suprasegmentals

/	Primary Stress
V:	Vowel Length
#	Word Boundary
+	Morpheme/Formative Boundary

Sonorant Aspiration

In the four Kitsai texts published to date (Lesser 1977), a second nasal segment appears in addition to the nasal sonorant n. Although attested in only a few forms, this aspirated n^h occurs in word initial and in intervocalic position:

- (1) nyun^hanáyata 'they (pl.) foot-race'
 n^hun^hea'ta 'gives them in-hand to'
 n^hun^hók^h 'does it'

However, alternant forms are also cited (Bucca and Lesser 1969: 10-11), in which the n^h has been replaced by n without change of meaning:

- (2) n^hon^hok^h / nonok^h 'does it for' (BL69:10-11)
 n^hun^hahé:yu / nunahé:yu 'difficult thing for him' (BL69:10-11)
 n^hun^hana / nunana 'gambles' (BL69:10-11)

In the absence of a semantic difference between the members of these respective sets of forms, I have considered the segments n and n^h as non-distinctive. This is in fact how Bucca and Lesser regard them, i.e., as in free variation (1969:10). Chomsky and Halle observe that, although a contrast between voiced and voiceless nasals is documented among the world's languages, it is rare (1968:316).

One encounters a similar situation with respect to the bilabial sonorant w, which is analogous to n in also having an aspirated alternant in w^h. However, a greater number of forms are attested which exhibit w^h. As in the case of n, w may occur in word initial and in intervocalic position:

- (3) wasá:s 'Osage'
 áw^hna '(3 pl.)go'
 áwita 'wears'
 awítsko 'thinks'

Forms are also attested with w^h in intervocalic position. These w^h likewise appear to represent non-distinctive alternants of w:

- (4) áw^hi 'dwells/sits/grows'
 araxka:w^hi '(pl.) sit inside'
 araxka:wi '(pl.) sit inside'
 kw^hnaraxká:w^hia 'who therein sat (pl.)'
 kwaraxká:wia 'who (pl.) inside sat'
 ayaók^hnahyonaíw^hi 'along with children dwells'
 an^hyaók^hnahyonaíwi 'there along with children dwells'
 kina:w^hi 'somewhere sits'
 okıtawi 'sits up thereupon'

- (4) continued
- | | |
|------------------------------|---------------------------|
| nɛyakíhi:aw ^h aʔá | 'himself disgorges water' |
| nɛ:kíhi:awaʔa | 'vomits himself of water' |

When preceded by a consonant, however, the w is not aspirated:

- (5)
- | | |
|--------------------------|-------------------|
| ayakwíonu | 'where wood sits' |
| kokoyák ^h wia | 'where wood sat' |

Obstruent Aspiration

Of the six obstruents in Kitsai, only k is attested as aspirated. The segment k is consistently indicated as aspirated when followed by t, n, and s, as in these forms:

- (6)
- | | |
|---|--------------------------------------|
| niyasá ^h k ^h tira | 'they (pl.) hunt round about' |
| awá ^h k ^h tek ^h | 'voices (hoots)' |
| ɪstɛrak ^h nayóku | 'let us (in pl.) go in' |
| sɪniwá ^h k ^h ná ^h na | 'is in hand gone about with voicing' |
| ayaók ^h nahyonáiw ^h i | 'along with children dwells' |
| kayak ^h nó ^h kts | 'old man' |
| sitsihoyá ^h k ^h sáxtsko | 'let us (in dual) go seek (him)' |
| atarakwakók ^h sɪkyayu | 'that we (in pl.) fought (ev.)' |

The segment k also aspirates when it occurs before the affricate ts, although the sequence k + ts is rare, and is attested only in the form:

- (7) yaók^htski 'infant'

In addition, k aspirates in word final position, as in these forms below:

- (8)
- | | |
|---|----------------------|
| nutá ^h snayánikok ^h | 'grasps him by feet' |
| sɪnɪxtsá ^h k ^h | 'is shot by' |
| arakɪtskarók ^h | 'takes off rope' |
| ohoyárik ^h | 'stops standing' |

In most instances, word final t is transcribed as palatalized. There is no evidence that palatalization is distinctive in any forms which have been examined thus far; and Bucca and Lesser regard t and tʲ as allophones in free variation (1969:9).

Discussion

Throughout the preceding, I have purposely emphasized the tentative status of aspiration and palatalization as attested in the Lesser texts. My reason for doing so is as follows:

I consider it very probable that segmental aspiration and palatalization are not phonological processes of Kitsai at all. I have already suggested that the 'aspirated' segments n^h and w^h most likely represent devoiced sonorants n and w, respectively. I further suggest that the attested cases of 'aspirated' k^h and 'palatalized' tʲ in turn represent neither aspiration nor palatalization processes operative in the language, but instead reflect the surface phonetic results of an assimilated devoiced vowel when preceded by the voiceless obstruents k and t, respectively. This conclusion, however, is based on morphological evidence.

A number of attested forms with word final k^h possess variant forms containing the sequence vowel + k + vowel in place of the more frequently occurring vowel + k^h. These forms, together with their variants, are given below. The parentheses enclose the morphological analyses; for discussion of the respective underlying and surface representations, see Vantine 1980.

(13)	ók ^h	'is'
	w ^ɛ rasnyúk ^h	'bad is'
	w ^ɛ rasnyúku	'bad is' (w ^ɛ rasn(i) 'bad' + uk/uku 'is')
	kanyúk ^h /kanyók ^h /kaniók ^h	'is not' (kan(i)-(neg.) + ok 'is')
	kaʔanyóku	'may not be' (kaʔan(i)- 'may not' + ok 'is')
	araxkósik ^h	'picks them up' (a- (durative) + rah (pl. obj.) + stem)
	ʌsnakósiku	'you (pl.) pick up (!)' (ʌ- (imper.) + s-(2 p.) + na(pl. obj.) + stem)

In these forms above, the word final sequence vowel + k^h # alternates with vowel + k + u#. Previous morphological analysis of these forms has not provided any evidence that vowel + k^h # and vowel + ku # are morphem-

ically distinct, and I conclude that they are in free variation. Moreover, the forms in word final vowel + ku # above are the only attested forms showing this alternation.

Additional evidence can be adduced from the three sets of forms below:

(14)	ók ^h	'is'
	ó:ki	'are'
	ɫtskorók ^h	'good is'
	ɫtskoró:ki	'good are'
	ahanók ^h	'(3 sg.) plants'
	ahaxkó:ki ^x	'the (things) planted'

In the first two sets of forms above, one observes minimal pairs distinguished by the respective presence of the Singular and Plural morphemes. The last set is not a minimal pair, but appears in any case to contain, in the form ahaxkó:ki^x 'the (things) planted', the plural formative ó:ki 'are' which is readily seen in the first two sets above, and is attested elsewhere in the texts. It is not at present certain that the form ahanók^h '(3 sg.) plants' contains the formative ók^h 'is', but I believe that this is likely, in spite of the morphological opacity of both forms in the third set above.

What is clear, however, is that these plural forms in (14) above, together with the alternating forms wɛrasnyúk^h/wɛrasnyúku 'bad is' and kaniók^h/kanyók^h/kanyúk^h 'is not', and also ka?anyóku 'may not be' from (13) above, permit the reconstruction of the form 'is/be' as # uku #. These forms thus provide additional support for my contention that word final vowel + k^h # actually represents the sequence vowel + k + vowel #, and, moreover, that the vowel following k is, at least for the forms which have been examined, a devoiced u. The sequence vowel + k + vowel # should, therefore, be read as vowel + k + U #. (The basis for positing u in the underlying representation, and the rule lowering u to o are given in Vantine 1980:29-39).

Furthermore, the reconstruction of the form for 'is/he' as # uku # in turn allows one to set up the following morphological opposition for the respective singular and plural forms for the verb 'be':

(15)	# uku # 'is/be'	: Singular
	# u:ki # 'are/be'	: Plural

The following set comprises the only forms which show the alternation of word final t^y # with tu #, that is, the alternation of vowel + t + u # with vowel + t^y #. This alternation is attested only once:

- (16) sakorahonát^y '(du.) be lost us (du.)'
 (sa-(du.) + ko-(obj.) + ra- (pl.) +
 honat (stem))
- sasakorahonátu '(du.) will be lost us (du.)'
 (sa-(du.) + s(a)- (fut.) + ko-(obj.) +
 ra- (pl.) + honat (stem))

This set is almost a minimal pair; the only morphological difference between the two forms is the additional future prefix s(a)- in the second form. Once again, the word final alternation of t^y # with tu # does not appear to mark a semantic distinction between the forms.

Several forms, attested once each in the texts, show anomalous transcriptions (indicated by the raised symbols) which may lend some additional support to the argument for segmental devoicing in Kitsai.

- (17) ára^xwi '(pl.) sit (grow)'
- káw^hi 'crow (?)'
- t^ənatsihunitó^w^h 'sings of himself'
- ahaxkó:ki^x 'the (things) planted'

The raised x preceding the w in the first form suggests that the w may be voiceless. In the second form, the 'aspirated' w^h is followed in turn by a raised i, which suggests that the (devoiced) w has reduced and possibly also devoiced the i. In the third form, the word final o is followed by a raised w^h, which suggests that the underlying u has devoiced and lowered to o. The last form, cited in (14) above in connection with the discussion of the plural form ó:ki 'are', shows a raised x following the word final i. I interpret this as an indication that, as in the case of the second form above, the i has been reduced and devoiced. Although these conclusions are tentative, it is of some interest that two of the four transcriptional anomalies directly involve the segment w, and one a word final o, probably derivable from underlying u. And all four anomalous transcriptions suggest that segmental devoicing has in fact taken place.

It also appears at least plausible to posit a rule of vowel devoicing for Kitsai on comparative grounds. Although a discussion of the evidence from the cognate languages is beyond the scope of this essay, it should be noted that vowel devoicing has been reported for Arikara (Parks, Beltran and Waters 1979:14-15) and also for Wichita (Rood 1976:1,243).

Finally, an additional point, and one of philological interest, remains. If one extends the foregoing analysis somewhat, and interprets certain attested occurrences of word medial k^h as k followed by a voiceless vowel, it may be possible to reconstruct at least one Kitsai form

in a way which illuminates its true surface phonetic representation, and thereby its underlying phonological representation as well. Consider the form:

(18) yaók^htski 'infant'

in which the final CV sequence ki # is readily analyzable as the diminutive suffix -ki, also seen in such forms as:

(19) wí:tɛki 'youth' (cf.: wi:ta 'man')
 atsútski 'old woman'
 tsotské:ki 'boy'
 tsakútski 'girl'
 iʔyɛniki 'brother'

By re-analysis of medial k^h as kU (where U = voiceless u), the form yaók^htski 'infant' is reconstructible as *yaókUtski. By so doing, this form is immediately seen to bear a striking resemblance to these other forms, each of which is marked, overtly (with -ki #) or covertly, as semantically diminutive:

(20) atsútski 'old woman'
 írvt̩si/irútsi 'pup'
 tsotské:ki 'boy'
 cf: *yaókUtski 'infant'

The reconstructed form *yaókUtski 'infant' now shares with each of these other forms the internal sequence uts; and the medial o in tsotské:ki 'boy' is derivable from underlying u, as noted earlier above (Vantine 1980: 29-39).

Alternatively, if one re-analyzes the medial k^h in the attested form yaók^htski as kI (where I = voiceless i), and then reconstructs this form as *yaókItski 'infant', another resemblance is seen:

(21) tsakútski 'girl'
 cf: *yaókItski 'infant'

Admittedly, the morphological status of the respective sequences uts and its in these forms in (20) and (21) above has not been determined as yet. However, it is remarkable that each of the proposed alternative reconstructions of yaók^htski creates a quasi-parallel in phonological shape between that form

and other diminutive forms. Whether or not these suggestive resemblances indicate potentially significant derivational relationships, however, can only be determined by further study of the texts, both published and unpublished.

NOTES

1 This paper is an expanded version of a paper read at the 7th Annual Meeting of the Missouri Philological Assn., Westminster College, Fulton, Missouri, 26 February 1982. That paper was in turn based on my M.A. thesis 'Aspects of Kitsai Phonology' (Unpub. MS., Dept. of Anthropology, University of Manitoba, Winnipeg, Canada, 1980). I wish to thank Dr. Kenneth L. Miner, Dr. Robert L. Rankin, and fellow students John McLaughlin and Hiroshi Nara, all of the Dept. of Linguistics at the University of Kansas, and Phil Mansfield of the Dept. of Germanic Languages and Literatures, University of Kansas, for their useful comments. The responsibility for the result is my own.

2 ts is the monosegmental t^s or c; x is a conditioned allophone of h and also of n; n may be a conditioned allophone of r; y may be a conditioned allophone of i; o is a conditioned allophone of u; ɬ, ɮ, ɛ, ɛ̃, are allophones of i, u, e, a, respectively. For discussion, see: Bucca and Lesser 1969; Vantine 1980.

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