

The Shifting Status of Initial Glottal Stop in Barbareño Chumash

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The phonetic difference between words beginning with a vowel (#V-) and those beginning with a glottal stop plus vowel (#ʔV-) is a fine one, one that we might not expect to be exploited in many languages. Indeed, many languages simply contain no vowel-initial words at all. Initial glottal stops, like other consonants, are an integral part of the morphemes in which they occur, and remain in all contexts. Such glottals can be seen in the Central Pomo verb root ʔa- 'gather'.

(1) Central Pomo (Frances Jack p.c.)

<i>ʔáw</i>	[ʔáw]	'gather (something)'
<i>ša-ʔáw</i>	[šaʔáw]	'gather up (in sweeping motion)'

In many other languages, vowel-initial words are automatically pronounced with a laryngeal onset, like the glottal stop in the Mohawk below. The fact that the initial glottal is not a basic part of the word is shown by the fact that it fails to appear utterance-internally.

(2) Mohawk (Josie Horne p.c.)

<i>ʔhú·neweʔ</i>	[ʔhú·neweʔ]	'they will arrive'
<i>y-ʔhú·neweʔ</i>	[yʔhú·neweʔ]	'they will arrive there'

In the Chumash languages, glottalization plays a number of roles. One intriguing question is its status in word-initial contexts. In his recording of Barbareño Chumash over the first half of this century, John Peabody Harrington systematically distinguished vowel-initial words from those with a glottal onset.

(3) Barbareño Chumash: John Peabody Harrington from Mary Yee

<i>awiš</i>	'to fix'	<i>ʔawax</i>	'jug basket'
<i>ačis</i>	'beard'	<i>ʔapʰan</i>	'to build'
<i>eqwel</i>	'to make'	<i>ʔel</i>	'necklace'
<i>isawus</i>	'sweat'	<i>ʔip</i>	'to say'
<i>ušʰo</i>	'to leave'	<i>ʔuwas</i>	'grapes'

Since Harrington was a careful phonetician, and extremely knowledgeable about Chumash, we cannot attribute the variation to inaccurate transcription nor to inconsistencies in level of representation. In fact, he often draws attention in his notes to the specific presence or absence of glottal stop. Individual roots are transcribed consistently. (Glottal stop does not appear word-initially before consonants in the language.)

It is interesting that a phonetic distinction as subtle as initial glottalization before vowels could carry such a functional load. In what follows, we will show that its distribution is not random. In fact, the pattern suggests possible explanations of how it came to be established in the language. All material cited here is drawn from Harrington's fieldnotes taken during work with Mary Yee.

1. The Verb-Noun Asymmetry

The majority of vowel-initial words in the Chumash languages, including Barbareño, are verbs, while the majority of glottal-initial words are nouns.

(4) Verb roots versus noun roots

<i>awiš</i>	'to fix'	ʔ <i>awax</i>	'jug basket'
<i>eqwel</i>	'to make'	ʔ <i>eneq</i>	'woman'
<i>ixip</i>	'to finish'	ʔ <i>xpaniš</i>	'acorn'
<i>oqmol</i>	'to spit'	ʔ <i>oʔ</i>	'water'
<i>ušpak</i>	'to pick up'	ʔ <i>uwaš</i>	'pipe'

Reasonable explanations for this modern state of affairs can be inferred from a reconstruction of the development of the morphology.

2. Verbs

In the modern Chumash languages, verb roots rarely occur in word-initial position. They are normally preceded by a pronominal prefix specifying their subject, or by a prefix that nominalizes or subordinates the verb.

(5) Subject pronominal prefixes: root *eqwel* 'make'

<i>k-eqwel</i>	'I made'
<i>p-eqwel</i>	'you made'
<i>s-eqwel</i>	'he or she made'
ʔ <i>al-eqwel</i>	'(that) made'

Verb stems thus always appear with a prefix, except in imperatives. Most noun roots, by contrast, usually appear unprefixed. The correspondence between lack of initial glottal stops in verb roots and the usual word-internal position of the roots suggests two possible scenarios.

One possibility is that vowel-initial words were automatically given a default glottal onset. Since verb roots seldom appear word-initially, due to the usual presence of a pronominal prefix or nominalizer, they would rarely occur with the default glottal. Since noun roots usually do appear word-initially, they would generally be pronounced with the default glottal. At a certain point, the default glottal stops could have been reanalyzed as an integral part of the basic form of the noun roots with which they usually occurred.

A second possibility is more complex but also more compelling. At an earlier time, before the development of pronominal prefixes in Chumash, all words may have been characterized by a consonantal onset, as in Central Pomo. Among the consonants was glottal stop. The glottal may itself have originated as a default onset, but acquired the status of a basic consonantal element of the lexical items by this point.

(6) Hypothesized point of departure

<i>*ʔawiš</i>	‘to fix’	<i>ʔawax</i>	‘jug basket’
<i>*ʔeqwel</i>	‘to make’	<i>ʔeneq</i>	‘woman’
<i>*ʔixip</i>	‘to finish’	<i>ʔixpaniš</i>	‘acorn’
<i>*ʔoqmol</i>	‘to spit’	<i>ʔoʔ</i>	‘water’
<i>*ʔušpak</i>	‘to pick up’	<i>ʔuwaš</i>	‘pipe’

The grammaticization of the pronominal prefixes *k-*, *p-*, and *s-* would have created clusters *kʔ-*, *pʔ-*, and *sʔ-* at the beginning of verbs like those in (6). We know that frequently occurring forms are typically subject to phonological attrition. The grammaticization of the obligatory pronominal prefixes with verbs would have set the stage for the simplification of the marked obstruent-glottal clusters to plain obstruents. Once the simplified forms had become well established, the verb roots were reanalyzed as vowel-initial, yielding the modern forms.

(7) Cluster simplification and reanalysis

<i>*k ʔeqwel</i>	>	<i>*k-ʔeqwel</i>	>	<i>keqwel</i>	>	<i>k-eqwel</i>	‘I made’
<i>*p ʔeqwel</i>	>	<i>*p-ʔeqwel</i>	>	<i>peqwel</i>	>	<i>p-eqwel</i>	‘you made’
<i>*s ʔeqwel</i>	>	<i>*s-ʔeqwel</i>	>	<i>seqwel</i>	>	<i>s-eqwel</i>	‘s/he made’

Reanalysis need not have occurred simultaneously in all forms. Sally Thomason (p.c. 1993) points out that the initial *sʔ* cluster might have been less stable than the initial *kʔ* and *pʔ*, which could have been pronounced as ejectives *ḳ* and *p̣*. The cluster simplification and subsequent reanalysis could thus have originated in the third person singular forms, then

been generalized to other persons and numbers. In any case, a parallel process would not have occurred with nouns like those in (6), because they usually appeared unprefixes.

There is, however, a small set of verb roots that do contain initial glottal stops. The glottal stops appear not only in the word-initial imperative forms, but word-internally, following the pronominal prefixes.

(8) Glottal-initial verb roots I: phonology

<i>ʔip</i>	'say, call, think, guess'
<i>k-ʔip</i>	'I said'
<i>p-ʔip</i>	'you said'
<i>s-ʔip</i>	's/he said'
<i>ʔes</i>	'to weave'
<i>ʔuqš</i>	'to stink, be rotten'
<i>ʔuw</i>	'to eat, suck, bite'

These exceptions share a notable phonological characteristic: they all consist of a single syllable. This exception is difficult to explain under the first scenario described above, whereby glottal onsets were assigned to full words complete with pronominal prefixes. It is more easily understood under the second scenario, involving cluster simplification and subsequent reanalysis; the initial erosion would have occurred only in words with a substantial phonetic substance: two or more syllables.

A second set of glottal-initial verbs share a different characteristic.

(9) Glottal-initial verb roots II: morphology

<i>ʔapʰan</i>	'to build'
<i>ʔašiš</i>	'to sit on'
<i>ʔawini</i>	'to be half'
<i>ʔaxič</i>	'to wage war'
<i>ʔeleč</i>	'to wear a necklace'
<i>ʔiwin</i>	'to cut'
<i>ʔoč</i>	'to be wet'
<i>ʔuniwineč</i>	'to get married'

These verbs share a morphological property; they are derived from nouns.

(10) Nominal bases of derivation

<i>ʔap</i>	'house'
<i>ʔas</i>	'mat, seat, chair'
<i>ʔawini</i>	'side'
<i>ʔaxič</i>	'war'
<i>ʔel</i>	'necklace'
<i>ʔiwíʔ</i>	'knife'
<i>ʔoʔ</i>	'water'
<i>ʔuniwí</i>	'spouse'

The existence of the glottal-initial derived verbs indicates that the erosion of root-initial glottals from verbs was a historical process, one no longer active in the language.

Finally, a third set of glottal-initial verb roots shares a quite different characteristic.

(11) Glottal-initial verb roots III: origin

<i>ʔakawayu</i>	'to be on horseback'
<i>ʔalasál</i>	'to pray'
<i>ʔalèl</i>	'to read'
<i>ʔuntal</i>	'to grease'

These verbs are Spanish loans, which would have been first heard without pronominal prefixes. Both verbs (*untar* > *ʔuntal* 'to grease') and nouns (*aguja* > *ʔawuxa* 'needle') were systematically borrowed from Spanish with initial glottals, sometime after the founding of the Santa Barbara mission in 1786.

(12) Spanish sources of glottal-initial verb roots

a caballo
a rezar
a leer
untar

3. Nouns

As noted earlier, most glottal-initial words in Barbareño are nouns. A small set of nouns appear with initial vowels, however.

(13) Vowel-initial noun roots: semantics

<i>a'cis</i>	'beard'
<i>ahaš</i>	'soul'
<i>antik</i>	'spirit'
<i>ašhunač</i>	'ruler, boss'
<i>ičč</i>	'younger sibling'
<i>isawus</i>	'sweat'

As can be seen, these nouns share a semantic characteristic: they refer to entities that would normally be possessed, or inalienable. They take on full meaning only in relation to another entity. Such nouns are normally preceded by a pronominal prefix (of the same form as the subjective prefixes on verbs) indicating the possessor. Such inflected nouns would have been subject to the same process of cluster simplification as the verb roots with subject prefixes, resulting in the loss of initial glottal stop: **k-ʔa'cis* > *ka'cis* 'my beard'.

Interestingly, Harrington provides glottal-initial counterparts to some of these vowel-initial inalienable nouns. These are just the kind of objects that occur as either alienable or inalienable possessions.

(14) Doublets

<i>a'cis/ʔa'cis</i>	'beard, silk (of corn plant)'
<i>ahaš/ʔahaš</i>	'spirit, soul (of a person)'
<i>ašhunač/ʔašhunač</i>	'rule, ruler, boss'

Harrington does not always specify differences in meaning between the forms, but their use indicates that they differ in alienability. The meaning of a derived form of 'spirit' was described as in (15).

(15) *kahašʔš*
k-ʔahašʔš
1-spirit

'my ghost that I see out of the window walking around but not my ghost, just as one says our moon, though we do not really own it'

Like monosyllabic verbs, monosyllabic noun roots retain their original glottals.

(16) Monosyllabic inalienable nouns

<i>ʔik</i>	‘mouth’
<i>ʔil</i>	‘leg, foot, paw’

Just as noun roots retain their basic glottal-initial forms under verbalization, we might expect vowel-initial verb roots to retain their basic forms under nominalization. Interestingly, this does not appear to be the case.

(17) Nominalization

<i>apit</i>	‘to climb’	<i>ʔapitʔ</i>	‘ladder’
<i>astipil</i>	‘to be thick’	<i>ʔastipilaš</i>	‘thickness’
<i>axiyep</i>	‘to cure’	<i>ʔaxiyep</i>	‘medicine, a cure’
<i>axtawayan</i>	‘to feel refreshed’	<i>ʔaxtawayanpi</i>	‘shade’
<i>axʔukay</i>	‘to contain’	<i>ʔaxʔukay</i>	‘a container’
<i>eqwel</i>	‘to make’	<i>ʔeqweleš</i>	‘shape, appearance’
<i>išóʔ</i>	‘to roast’	<i>ʔišóʔš</i>	‘roast, barbecued meat’
<i>iqip</i>	‘to close, lock’	<i>ʔiqip</i>	‘cover, lid’
<i>ixtil</i>	‘to cover’	<i>ʔixtiʔš</i>	‘roof, awning’
<i>iwon</i>	‘(animal) to sound’	<i>ʔiwonuš</i>	‘a sound’
<i>oxoxon</i>	‘to cough, catch cold’	<i>ʔoxoxočʔúʔš</i>	‘a cold’
<i>uškal</i>	‘to be strong’	<i>ʔuškališ</i>	‘strength’

This pattern could be the result of two possible sequences of events.

i. The nominalization may have occurred before the fusion of pronominal prefixes, and thus before the erosion of verb-internal glottal stop.

a.	<i>*ʔišóʔ-š</i>	=	<i>ʔišóʔš</i>
	to.roast-NOM		‘a roast, barbecued meat’
b.	<i>*š-ʔišóʔ</i>	>	<i>šišóʔ</i>
	3.SUBJECT-to.roast		‘s/he is roasting’

ii. Alternatively, speakers may have begun to notice the general pattern of vowel-initial verbs versus glottal-initial nouns at some point, perhaps even reanalyzing the initial glottals of nouns as nominalizers.

Sequence ii in fact seems likely to us, given the apparent productivity of nominalization following this pattern in Harrington's notes. Not only do derived nouns appear with the glottalization, but also nominalized clauses.

(18) Nominalized clause

... *isiy'expenus^haʔš*
 hi *s-iy-ʔ-expen-us-saʔš*
 DET 3-PL-NOM-sing-3.BEN-NOM
 '[and they responded] to their being sung to.'

Of course it is quite possible that both sequences of events took place, the first creating earlier nominalizations, the second the more modern nominalizing process.

4. Conclusion

The Chumash distinction between vowel-initial and glottal-initial roots can thus be understood as the consequence of a development in the morphology: the grammaticization of pronominal prefixes. The fact that verbs and inalienable nouns normally appear with prefixes allowed the distinction to remain robust in the language, since those roots normally occur word-internally and automatic onsets would not appear. Other nouns appear most often utterance-internally as well, since basic word order is verb-initial, and nouns are often preceded by an article. The bond between the article and the noun is not as strong as that between pronominal prefixes and roots, however, so erosion of initial glottals is less likely to occur.

There was probably little phonetic distinction between basic vowel-initial words and basic glottal-initial words. As in many languages, there may have been an automatic utterance-initial glottalic onset even in modern Barbareño. In his earlier transcriptions with Mary Yee's grandmother, Luisa Ygnacio, Harrington included initial glottals before all vowels. In the later work, the only context in which vowel-initial verb roots occur phrase-initially, in imperatives, they were recorded with a glottal: *ʔeqwélus* 'make it for him!'. Finally, a note from Harrington is indicative:

(19) The glottal stop occurs:

Before the initial vowel of many words, but not all words. A convenient test to prove its occurrence is to call for a possessive form, (1st, 2nd or 3rd person sing.) of the word. Thus:

<i>ʔap^a</i>	'house';	<i>kap^a</i>	'my house'
<i>ekwel</i>	'to make;	<i>kekwel</i>	'I make'

Interestingly, strikingly similar patterns appear among the Yuman languages. Yumanists have carefully recorded distinctions between vowel-initial and glottal-initial roots: Halpern 1946 on Yuma, Langdon 1970 on Mesa Grande Diegueño, Munro 1974 on Mojave, Gordon 1986 on Maricopa, and Miller 1990 on Jamul Diegueño. Munro 1981 discusses the distinction in Yuman generally.

The majority of the vowel-initial roots they provide are verbs, while the majority of glottal-initial roots are nouns: Yuma *aθá* 'to gather greens', *ʔa·vé* 'snake' (Halpern 1946: 275, 252). Among nouns, the glottal-initial roots tend to be alienable, while vowel-initial roots tend to be inalienable (*ʔi·θó* 'willow', *i·θó* 'tooth' (1946: 264, 263). The mystery here, seems deeper. Although Yuman languages contain pronominal prefixes referring to their subjects, third person subjects of verbs and third person possessors of inalienable possessions are unmarked, or represented by zero.

Halpern remarks, however, that 'initial vowels are pronounced with an aspirated attack' (1946: 252), rather than glottalization. Munro (1974: 2) notes a similar automatic aspirated onset in Mojave. The aspirated onset would have served to distinguish basic glottal-initial words from vowel-initial forms. Gordon and Miller note that in Maricopa and Jamul respectively, however, initial vowels are automatically preceded by initial glottal onsets. Miller reports that 'When words are spoken in isolation, it is difficult to distinguish an initial sequence of glottal stop followed by vowel from an initial vowel not preceded by glottal stop. (This is because initial vowels lack the aspirated onset found in some other Yuman languages.) In connected speech, however, initial glottal stops are usually heard. Stem and initial glottal stops are always recoverable when a stem is prefixed (1990: 10).' In the absence of a third person pronominal prefix, and an aspirated onset, it could be difficult to maintain the glottal distinction. Miller provides an interesting note: 'In Mrs. Dumas' speech, word-initial glottal stops appear to have been lost' (Miller 1990: 10).

Note

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References

- Gordon, Lynn 1986. *Maricopa morphology and syntax*. UCPL 108.
 Halpern, Abraham 1946. Yuma. *Linguistic structures of Native America*. 249-88.
 Langdon, Margaret 1970. *A grammar of Diegueño: The Mesa Grande dialect*. UCPL 66.
 Miller, Amy 1990. *A grammar of Jamul Diegueño*. Ph.D. dissertation, University of California, San Diego.
 Munro, Pamela 1974. *Topics in Mojave syntax*. Ph.D. dissertation, University of California, San Diego.
 Munro, Pamela 1981. Vowel-initial roots in Yuman. *Proceedings of the 1981 Hokan Languages Workshop and Penutian Languages Conference, Sonoma State University*. Occasional Papers on Linguistics 10, Department of Linguistics, Southern Illinois University at Carbondale. 24-36.

REPORT 8

SURVEY OF CALIFORNIA AND OTHER INDIAN LANGUAGES



**Proceedings of the Meeting of
the Society for the Study of the
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July 2-4, 1993

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**This volume is dedicated to
JAMES E. REDDEN
on the occasion of his retirement
for his enduring commitment to the publication
of the results of research on Yuman, Hokan, Penutian and
other American Indian languages
and also
for his contributions to the
documentation of the Hualapai language**

INTRODUCTION

This volume includes a number of papers presented in conjunction with the 1993 Linguistic Institute at Ohio State University in Columbus, Ohio, at two conferences on American Indian Languages: the meeting of the Society for the Study of the Indigenous languages of the Americas, held July 2-4, 1993, and the meeting of the Hokan-Penutian Workshop, held on the morning of July 3, 1993.

This continues a tradition initiated during the Linguistic Institute at the University of Arizona in 1988, of offering conferences on American Indian languages during the summer Linguistic Institute of the Linguistic Society of America, which is held every two years on the campus of the host institution. The interaction thus afforded between students and faculty of the Institute and specialists in American Indian languages has proved mutually profitable.

We gratefully acknowledge the dedication of Catherine Callaghan in making these meetings thoroughly enjoyable, as well as the hospitality of Ohio State University.

The Hokan-Penutian Conference has a tradition of meetings dating as far back as 1970, when the first Hokan Conference was hosted by Margaret Langdon at UCSD. Since 1976, the Hokan (and later Hokan-Penutian) Conference proceedings were published most years by James Redden, as part of the series *Occasional Papers on Linguistics*, out of the department of Linguistics at Southern Illinois University at Carbondale. Beginning this year, with James Redden's retirement, the reports of these conferences are being published as part of the *Survey Reports* out of the Survey of California and Other Indian Languages at the University of California at Berkeley.

Margaret Langdon
Volume Editor

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