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### Title

The Wappo Glottal Stop

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### Author

Sawyer, Jesse O

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## The Wappo Glottal Stop

Jesse O. Sawyer

University of California, Berkeley

Wappo, like its associate language Yuki, uses the glottal stop and voiceless h to an extent that is surprisingly beyond the level of usage that one would expect of sounds that are generally very low in amplitude. The skewed frequency was noted by Uldall and Kroeber when they first worked on these languages, but nothing has been said about the problem since that time, and whatever grammatical complexities result from the frequency of h and ʔ, no one has either discussed or accounted for the occurrences in Wappo.

The questions a grammarian might ask about the phenomena are particularly these two: (1) are h and ʔ in Wappo each morphemes or are they two or more, and (2) what historical conditions could have combined to bring about such an unreasonably heavy functional load for the laryngeals ʔ and h? It is probably too late to know the exact details leading to the phenomenon, yet there are many tantalizing pieces of evidence. Both h and ʔ have special onset and offglide functions in Wappo. Moreover Wappo has a rich supply of voiceless sounds and limits voice in its phonemes to vowels and the vowel-like sonorants. There are no voiced stops, fricatives, or affricates except for one or two borrowings of Spanish origin. Looked at in another way the Wappo sound system consists of a group of sounds

p t t̥ c ʧ k  
m n l y w

all of which may occur either glottalized or aspirated—that is, with an accompanying ʔ or h. ʔ and h function like free agents which triple the phonemic distinctions made by the language. There are few restrictions on the stop series except for some gaps in syllable final aspiration, but the combinations of glottalization and voicelessness with m, n, l, w, and y are limited to syllable final position. It is also true that the Wappo sound system resembles that of some of its neighbor languages rather closely. None of this answers our question. In fact the over-use of h and ʔ arises out of a variety of pressures, no one of which may have been decisive.

In these notes I will not try to analyze the historical situation. I will limit the discussion to the description of the phenomena of the glottal stop in Wappo, and will consider its morphemic status briefly.

In Wappo the glottal stop may occur initially, medially, and finally: ʔocóniʂ 'acorn bread', ʂíʔe 'grass', and phéʔ 'foot'. To say that ʔ occurs medially is somewhat inaccurate, in that the syllabic canon for roots is most commonly CVC where the ʔ may fill the position of either C. Affixes accompanying the roots have a variety of noncanonical shapes. The glottalized sounds include all of the stops, affricates, and fricatives, as well as the sonorants:

p'	t'	t'	c'	ʂ'	k'
m'	n'	l'	y'	w'	

These are mentioned again here because each of these sounds occurs unglottalized and the pairing, together with the fact that the m', n', l', w', and y' occur only syllable finally suggest that all of the glottalized sounds may have originated particularly out of the environment of

consonants preceded or followed by morphemes beginning or ending with a  $\text{ʔ}$ . Initial  $p'$ ,  $t'$ ,  $\text{t}'$ , etc., could have been generalized by assimilation in the following way: (1)  $\text{CVC} + \text{ʔVC} \rightarrow \text{CVC}' + \text{ʔVC}$ . Then (2)  $\text{C}_1\text{VC}'_2 + \text{ʔVC}_3 \rightarrow \text{C}_1\text{VC}'_2 + \text{C}'_2\text{VC}_3$ . (The + is a word boundary.) The latter formula is unsatisfactory as it does not seem to take care of the highly frequent and various glottalized initial consonants. Those probably arose also out of the following kind of situation: (3)  $\text{CV}' + \text{CVC} \rightarrow \text{CV}' + \text{C}'\text{VC}$ .

If the validity of these formulae can be demonstrated—and I think it can—then it is apparent that all of the glottalized consonants must originally have been clusters of consonants and glottal stops,  $\text{ʔC}$  or  $\text{C}'$ . This argument is hampered by the fact that all intermediate  $\text{*ʔC}$  sequences generated by formula (3) above are realized as  $\text{C}'$ , i.e.,  $\text{C}'$ . The fact is that in Wappo the glottal effect is phased slightly after the consonant.  $\text{*ʔC}$  occurs only across morpheme boundaries as  $-\text{ʔ} + \text{C}-$ , so that the development of the glottalized initials must be viewed rather as a progressive assimilation in which the glottal friction is carried into the following consonant and results finally in a full scale glottalized consonant.

In the preceding paragraphs I have stated enough of the distribution of the glottal activity in Wappo that the reader need not be surprised by such forms as  $\text{ʔotf'ahkhiʔ}$  'drowned',  $\text{ʔoʕ'óp'taʔ}$  'finished', or  $\text{k'óm'i'hiʔ}$  'is it boiling? is it cooking?' The simple fact of frequency, however, does not alone exhaust the complexity of the glottal stop in Wappo.

The glottal is used in a variety of forms which in the usual grammatical analysis would result in its being assigned morpheme status and

given a meaning. The meanings, however, are various and confusing and the distributions are regular in some ways and highly irregular in others.

In a few cases the fruit or seed of pines is marked with the ʔ. Thus náyo 'digger pine' consists of a root náy- and the suffix -o 'tree', an ancient contraction of hol, the generic term for all 'trees, wood, sticks'. The pine nut of this pine is náy'. The glottalization of the root is the sole addition or difference.

Or take the case of the vocative. 'Father' is ʔáya, but if you wish to call him, you call ʔáyaʔ. Just as the glottalization of the y or náy- 'digger pine' produces the pine nut, here the added ʔ produces the vocative. The use is complicated by the fact that not all kinship terms can be used vocatively. One assumes that the restriction, however, is one of politeness, of cultural rather than linguistic limitation.

The most pervasive use of the glottal stop is in the verb. All verbs end in a glottal stop: for example, ʔèyk'i tháí·ʔeʔ 'The baby is squalling!' There is only one exception. If verbs are strung together into one compound form, only the last in the series has the final ʔ. For example: ʔathikéywiʔ ʔàh tè hòl mehyasepéhlekhyamíʔ literally 'tomorrow I him tree up-climb-watch-will-verb'; 'Tomorrow I'll watch him climb the tree'. If mehyáseʔ 'climbing up' occurred as the sole verb in a sentence, it would, of course, have the concluding ʔ. As a member of a compound verb it does not have it. A further fact: although word order is largely nonfunctional in Wappo, the verb with its ultimate ʔ is normally the last word in most sentences.

Related to the ʔ marking of the verb is a somewhat different phenomenon in which demonstratives become verbs by the simple addition of

the ʔ. Thus cé 'that' becomes céʔ 'that is'. cèʔ čhúya 'That's the house' becomes a sentence although it does not contain the usual verb. cè čhúya is 'that house'. The expected surprise here is that the make-do status of the céʔ 'that is' is emphasized by the fact that the ceʔ does not occur at the sentence final as the verb should. It keeps the place before the noun that it normally holds as a demonstrative.

Still another aspect of the verb final ʔ exists in a set of deverbal nouns which have such a ʔ. nahčíliʔ 'wheel' seems to carry its idea of motion into its nominal state by retaining the unusual-for-a-noun final ʔ. I find in my notes a plaintive complaint that a "number of games include a final -iy". It is the verb-like nature of games and game names, I suppose, that is involved. The note was attached to nah-túyhiy'seʔ 'plays tag' which is marked as a verb by its -se- and -ʔ but carries with it a further almost-verb-marker in the glottalization of the y of nah-tuyhiy' 'the game of tag'.

Another unusual use of ʔ appears in names in which the ʔ is inserted at the end of the descriptive part of the name. ʔunu'cáwa is the gloss for the common toyon and it occurs as part of the name for the last settlement the Wappo have had, the rancharia above Geyserville, which they called ʔunu'cawaʔhólmanoma literally 'toyon-woods-camp'. A handful of surviving names incorporate this appearance of -ʔ.

McLendon has discussed (1969) another use which the Wappo share with most of their neighbors: loan words are marked with a final -ʔ. The Wappo use the device for loans from Spanish, of course, as in káltuʔ 'soup, stew', Sp. caldo, but also on words they have borrowed from other groups. híwhol' Sp. 'frihol' was borrowed from their neighbors as was čaʔ 'tea', ultimately from Russian, and both probably had the final -C'

or -ʔ at the time of borrowing. t'úkuʔ 'sack, bag' may not have had the -ʔ before it was borrowed. Its origin is obscure. In any case the native speaker is usually aware that these words are borrowed and will tell you that the word is not really Wappo. The signal that marks these forms seem to be the -ʔ. The number of such words in the vocabulary is quite large. One of the surest marks of very ancient borrowings in Wappo is the absence of the final ʔ on a form which you know to be borrowed. The spread of -ʔ may be of relatively recent origin.

Finally there is a group of words which probably contain the final -ʔ, but which do not fall easily into any of the several categories I have described. Examples are khón' 'said, heard, reported' and táw' 'way, tradition, custom'. There are a number of others!

These examples serve to establish the unusual quality of -ʔ in Wappo. It occurs in the fruit of pines, in the vocative, as a verb marker, in deverbals and verbs made from demonstratives, as a mark of loan words, and as a special mark in names. Its distribution is disturbing in that it occurs as a final in most of the grammatical categories of the language. Chafe 1959 discusses similar problems in Seneca and suggests possible solutions. The most obvious question still remains. Can one place all of these forms especially in view of the grammatical categories involved in one morpheme? I believe that the -ʔ is indeed one unit and that it means something like 'assertive, assertion' or 'verb, verblike'. I leave to the reader, however, the final choice!

There may be a solution to the problem. Chafe argues convincingly for including as elements in one morpheme morphs that have very wide ranging meanings. He does not suggest, however, abandoning Harris's and Hockett's nonuniqueness of the total range of environments, but he does

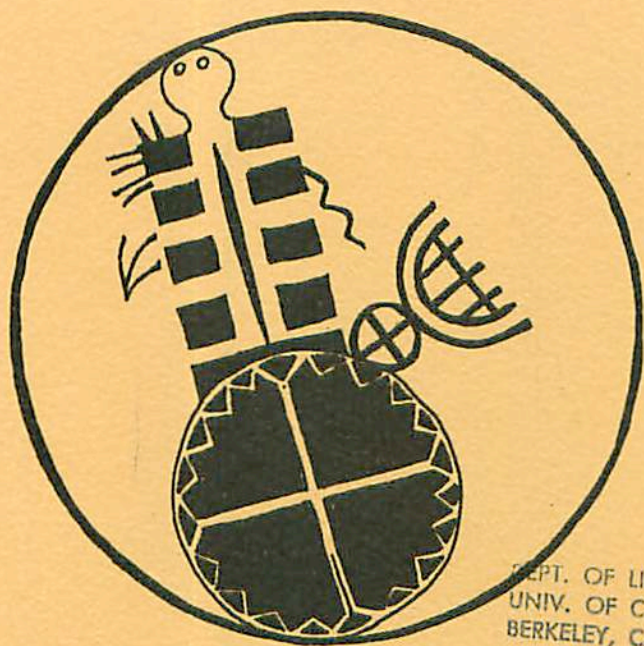
suggest that the nonuniqueness criterion, while desirable, should not be part of the definition of the morpheme (1959:2). In the case of Wappo -? we have not only widely ranging meanings but also a unique set of environments. The Wappo -? appears with nouns, nouns of address, demonstratives, verbs, exclamations, and a few unclassifiable particles. No other morpheme in the language has such a distribution. If a morpheme is not allowed such a unique distribution, then the -? of Wappo would have to be assigned to two or more morphemes.

There is one condition, however, in which the uniqueness becomes much less focal. Our position in this paper has been that Wappo is a language having nouns, verbs, particles, possibly adjectives, and adverbs, exclamations, a whole panoply of Indoeuropean categories. We seem to be viewing the language through the glass-eye of classic grammar, darkly. And we may be wrong. Like many American languages, this one shows strong evidence of consisting of a series of CVC roots and CVCV stems in which a former monosyllabic state is only a short time away. I suppose we could say that Wappo is far along the process of developing a large set of grammatical categories. Nevertheless it still has not smoothed out, eradicated, lost the evidence of its former state. For a language of roots, stems, and modifying particles, there is no particularly surprising uniqueness in the distribution of the Wappo -?. Such a solution and the description of this morpheme suggest that in some cases a language can be in the middle of a vast reformation that makes the selection of a grammatical model difficult.



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