

THE PLACE OF GLOTTAL STOP IN TUAMOTUAN

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1.0 Problems Discussed

Tuamotuan is a Polynesian language that has the following sixteen segmental phonemes: /p,t,k, ' (glottal stop); f,h,v; m,n,g (voiced velar nasal); r; i,e,a,u,o / (v. §.3.0)

In spite of the general tendency among Polynesian languages toward fewer phonemes, it is considered that Tuamotuan added a glottal stop /' / to its inventory of consonant phonemes relatively recently. (v. §.4.0) The purpose of this paper is, first of all, to prove this point.

The second purpose of this paper is to point out that there are two different types of glottal stop in Tuamotuan: a systematic glottal stop and a sporadic intrusive glottal stop. (v. §.6.0) The latter type of glottal stop, used utterance-initially in Tuamotuan, is also non-phonemically used in English and presumably in many other languages in a similar environment.

Syllabic structures of Tuamotuan are V, CV, VV, CVV, VVV and CVVV. Being a consonant, glottal stop usually occurs within these syllabic structures. Glottal stop, however, also occurs utterance-finally in exclamations. This type of glottal stop is called extra-systematic glottal stop in this paper. (v. §.7.0)

This study is based upon a corpus of recorded tapes and a subsequent analysis of them during linguistic fieldwork in Papeete, Tahiti, French Polynesia in June-August 1967 with the supervision of Dr Bruce Biggs under the Polynesian Pre-History Program of the Bernice P. Bishop Museum, Honolulu, Hawaii, and also on further study in Laie and Honolulu, Oahu, Hawaii, in 1967-68.

The analysis of phonology presented here is based primarily upon the speech of three informants: Mr Robert Palmer (a half New Zealander informant from the atoll of Takatoa), Mr Tekeheu Munanui (a half Chinese informant from the atoll of Hao) and Miss Marguerite White (a half European informant from the atoll of Hikueru).

2.0 Introduction

Tuamotuan is the first language of nearly 10,000 Polynesians living in the Tuamotuan Archipelago and in Tahiti, both in French Polynesia. In 1967, 6,664 Tuamotuans were reportedly living in the Tuamotuan Archipelago and the number of Tuamotuans living in Tahiti, also in 1967, was estimated at 2,000 to 2,500.¹

From ten to fifteen Tuamotuans are at Laie, Oahu, Hawaii, some 30 miles northwest of Honolulu, Hawaii, either as students at the Church College of Hawaii or as employees at the Polynesian Cultural Center. Both are institutions of the Church of Jesus Christ of the Latter-Day Saints. Some Tuamotuans are married to U.S. citizens and live in the United States as enter-tainers or as housewives. Half of them are in Honolulu, Kaneohe, and Waimanalo, all on the island of Oahu, Hawaii; and according to Tuamotuans in Tahiti, a few live in California and Miami, Florida. At the Church College of New Zealand, some 80 miles south of Auckland, there

¹ Personal communication dated February 15, 1968, from Mr Jean Gasman, administrator of the Tuamotuan Archipelago through Mr Yves Lemaître, then of Lycée Paul Gauguin and now of O.R.S.T.O.M., both of Papeete, Tahiti.

are twenty or so people from Tahiti, some of whom are Tuamotuans.²

The 80 or so atolls, which constitute the Tuamotuan Archipelago, are situated approximately in the middle of the Polynesian Triangle. The geographical location and the life on the Tuamotuan Islands are succinctly described by Edwin H. Bryan, Jr., as below:³

Tuamotuan Islands (also called the Low Archipelago), are a coral island group in the South Pacific Ocean, politically a part of French Polynesia which is a member of the French Community. Situated between latitudes 14' and 25' S. and longitudes 135' and 149' W., the group comprises 75 atolls, scattered over the 1000-mile arc from Makatea (Society Islands) 140 miles northeast of Tahiti, to Mangareva (Gambier Islands). The total land area, all sand and coral, is given as 340 square miles, but it is probably much less. The nickname DANGEROUS ARCHIPELAGO indicates the hazard to ships from many low, poorly charted reefs.

Tuamotuan is one of the five Polynesian languages spoken in French Polynesia, the other four languages being Tahitian, Marquesan, Mangarevan and (the language of) Austral (Islands).

"...Tuamotuan...is clearly an east Polynesian language..." says Biggs (1965: 378). All other specialists in Polynesian and Oceanic linguistics the world over seem to agree on this point as may be seen in Walsh and Biggs 1966, Elbert 1953, Emory 1963, Green 1966 and Pawley 1966.

Due to Tahiti's political and economical superiority, not only those Tuamotuans living in Tahiti but also those living in the Tuamotuan Archipelago, especially those living on western atolls, are bilingual in both Tuamotuan and Tahitian. Furthermore, in Tahiti and also on some Tuamotuan atolls close to Tahiti, it is not infrequent to encounter Tuamotuan youngsters who speak only Tahitian and no Tuamotuan.

To Tuamotuans of today, their land is / tua+motu / and the language and the people are / pa'u+motu /.

Education is given all in French by French and Polynesian teachers both in the Tuamotuan Archipelago and in Tahiti. No Tuamotuan nor Tahitian is being taught at schools either in the Tuamotuan Archipelago or in Tahiti in spite of the fact that Tahitian, for example, is still the first and everyday language of practically every person born and raised in Tahiti.

Current Tahitian-Tuamotuan orthographies are based upon the Tahitian Bible and the Tahitian version of *The Book of Mormon*. They vary from one mission group to another, especially with regard to their use of diacritics, and, like orthographies for a great majority of the languages of the world today, none of them is phonemic.

² A personal communication dated March 31, 1968, from Dr Chris Corne of the Department of Romance Languages, University of Auckland, mentioned "about twenty" from Tahiti, most of whom were Tuamotuans. As a result of a trip made to the Mormon College in Temple View, Hamilton, by the author of this paper in mid-August 1969 after his arrival in New Zealand, however, it was found out that there were then more than twenty students from French Polynesia at the Church College but that only five of them were Tuamotuan-speaking.

³ Bryan 1965.

No systematic grammar has so far been published for Tuamotuan. There are a few sketchy notes on Tuamotuan such as Audran 1917, 1918, 1919a, 1919b, 1922, 1929, 1930 and Rey-Lescure 1954, but they are all very short, frequently comparative, or else contain partial lexical information. Klieneberger (1957: 131) lists several other similar works published in English, French, and German.

There are hundreds of pages of texts in Tuamotuan compiled earlier in this century. The most voluminous of all are the 262 pages of texts by Caillot 1914, 1932 and 317 pages of texts by Stimson 1933a, 1933b, 1934. It is believed that there are some partial texts elsewhere under the heading of folklore, etc., as in Henry 1928, especially in old issues of BMB and BSEO.

Tregear 1893-95 is the first and the oldest Tuamotuan lexicon known. The number of entries is small (76 pages) and it is not too informative. For one thing, a long vowel is not so marked. Equally small is White (n.d.), but it is excellent, first of all in that each entry has at least one sample sentence. Long vowels are also correctly marked for the most part.

A voluminous 623 page dictionary of Tuamotuan was published in 1964. Stimson 1964 under discussion, however, has already been reviewed by at least four authorities in Polynesian linguistics, i.e. Biggs 1965, Elbert 1965, Hohepa 1966 and White 1965.

3.0 Summary of Phonology

A phoneme is a class of phonetically similar and non-contrastive phones. Usual tests of complementation and contrast yield the following phonemes.

3.1 Inventory of Phonemes

3.1.1 Segmental Phonemes

(a) consonants

stops /p,t,k, '(glottal stop)/

fricatives /f,h,v/

nasals /m,n,g/

median⁴ /r/

(b) vowels:

TABLE 1

TUAMOTUAN VOWEL PHONEMES

	front unrounded	central unrounded	back rounded
high	/i/		/u/
mid	/e/		
low		/a/	/o/

⁴ For a definition of a median, see Gleason 1961: 252.

Short vowels contrast with identical long vowels. Thus, vowel length is phonemic. Since a number of non-identical vowel pairs occur in Tuamotuan, long vowels are interpreted as pairs of identical vowels and are presented by doubling the vowels in all cases (v. Pike 1947: 61a).

3.1.2 Suprasegmental Phonemes

Besides the above-mentioned sixteen segmental phonemes, there are the following five suprasegmental phonemes:

(a) junctural phonemes

/ # /	final juncture
/ // /	non-final juncture
/ + /	plus juncture
/...../	hesitation

(b) other suprasegmental phoneme

/ ✓ /	phrase stress
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4.0 Tahitianization of Tuamotuan

“Even a hundred years ago, many Tuamotuans could speak Tahitian and used many Tahitian words in everyday speech,” says White (1965:520). Many Tuamotuans are now bilingual or nearly bilingual in both Tuamotuan and Tahitian.

In his review of Stimson 1964, Elbert (1965:1021) states: “Probably a truly contemporary Tuamotu (sic) dictionary would have to include much of Tahitian; this would have been a formidable task as there is no adequate Tahitian dictionary...”

Elbert's last comment quoted above is not only correct, but it may also be further stated that all Tahitian words are potential Tuamotuan words in contemporary spoken Tuamotuan whether or not they are actually used as part of contemporary Tuamotuan vocabulary among speakers of Tuamotuan.

Thus, from the point of view of vocabulary, it may not be an overstatement to say that contemporary Tuamotuan is probably one of the richest Polynesian languages in existence, at least potentially, having all Tahitian words as potential or actual Tuamotuan words. In this respect, contemporary Tuamotuan is somewhat parallel to contemporary English in that it has a double vocabulary system, as is illustrated by the following examples, which might be multiplied indefinitely:

(Indigenous Tuamotuan)⁵

/vae+vae/

(Tahitian-derived Tuamotuan)⁵

/'avae / 'foot & leg below knee'

⁵ Indigenous Tuamotuan words and Tahitian-derived Tuamotuan words are those which are regarded by native speakers of Tuamotuan as indigenous Tuamotuan and Tahitian-derived Tuamotuan words, respectively. It has been pointed out by Dr Biggs that at least some cases of the above-mentioned Tahitian-derived Tuamotuan words such as /nao+nao/, /matau/ and /taane/ are usual Polynesian words that can be reconstructed as Eastern Polynesian or even proto-Polynesian words and that they might be archaic indigenous Tuamotuan forms. My personal speculation on the basis of the contemporary native reaction is that it is most likely that the Tahitian-derived Tuamotuan words listed here are recent borrowings from contemporary Tahitian, although they might have existed in Tuamotuan itself as indigenous forms centuries ago.

/kope /	/upe'a /	'net for fishing'
/komo /	/pape /	'water'
/namu /	/nao+nao /	'mosquito'
/kanehu /	/matau /	'fish hook'
/kore+reka /	/hu'a /	'a little bit (of a thing)'
/kaefa /	/taane /	'husband'

(v. Stone 1964: 191-202 for further examples).

Even more numerous than these formally quite different Tahitian synonyms used in contemporary spoken Tuamotuan in free variation with original Tuamotuan forms, are the Tahitian words which are cognates with original Tuamotuan forms and differ only with regard to their use of /' / (glottal stop) instead of /k/ or /g/ (voiced velar nasal):

(Tuamotuan) ⁶	(Tahitian-Tuamotuan) ⁶	
/koe/	/'oe/	'you, singular'
/kere+kere/	/'ere+'ere/	'black'
/raa+kau/	/raa+'au/	'tree'
/tagata/	/ta'ata/	'person, man'
/mago/	/ma'o/	'shark'
/matagi/	/mata'i /	'to blow (said of wind)'

and hundreds of others.

There is strong evidence that the phoneme /' / (glottal stop) is a recent addition to Tuamotuan due to Tahitian influence.

First of all, an extremely high degree of fluctuation is observed between /k/ and /' / and also between /g/ and /' / in contemporary spoken Tuamotuan, as the above examples suggest. Further investigation reveals the fact that these two fluctuations occur when the Tuamotuan words containing /k/ or /g/ also occur in Tahitian with a simple mechanical replacement of the /k/ or /g/ by the glottal stop /' /.

On the other hand, the Tuamotuan /k/ and /g/ do not usually fluctuate with /' / when the Tuamotuan words do not have regularly corresponding cognate forms in Tahitian.⁷ A good

⁶ As is always the case with any other languages with a double vocabulary system, closer scrutiny of the areas of meaning of the pairs of Tuamotuan words and their Tahitian cognates, reveals a slightly more complicated state of affairs. This point will be discussed on some other occasion in detail.

⁷ The fluctuation between /k/ or /g/ and /' / does occur to a certain degree in Tuamotuan lexical items not shared by Tahitian. The reason is a carryover of the above-mentioned Tuamotuan-Tahitian phonemic correspondence or a case of so-called folk etymology or is sometimes a slip of the tongue.

example is the Tuamotuan word /haga/ (both 'a nominalizing suffix' and 'a plural marker'), which in Tahitian has the functional equivalents of /ra'a/ as a nominalizer and /mau/ as a plural marker. The Tuamotuan /haga/ thus never fluctuates with /ha'a/.

Finally, the most convincing evidence for the hypothesis that the Tuamotuan /' / may be a recent addition to contemporary Tuamotuan is the fact that /k/ and /' / or /g/ and /' /, do not occur together within a single lexical item anywhere in my corpus from Tahiti. The Tuamotuan word "to blow", for example, is either /paka+kina/ or /pa'a+'ina/ (but never * /paka+'ina/ nor */pa'a+kina /), as in the following examples:

- 1.) / #ua+paka+kina // te+matagi# /
 - 2.) / #ua+pa'a+'ina // te+mata'i# /
 - 3.) / #ua+pa'a+'ina // te+matagi# /
 - 4.) / #ua+paka+kina // te+mata'i /
- "The wind has blown"

In spite of the general tendency among Polynesian languages toward fewer phonemes, it is considered that Tuamotuan added a glottal stop /' / to its inventory of consonant phonemes relatively recently. Texts compiled by Stimson and Caillot a few decades ago more or less testify to this fact. Also, both Tuamotuans and Tahitians share the opinion that Tuamotuan possesses /k/ and /g/, although this sort of native opinion is oftentimes not thoroughly reliable.

Hatanaka (1967: 188) mentions Old Tuamotuan and New Tuamotuan and states, "..... Father Victor is thoroughly versed in Old Tuamotuan and New Tuamotuan....." etc. Unfortunately, Old Tuamotuan is not defined by her, but at least from the viewpoint of lexical items, there is no doubt that Tuamotuan has undergone considerable change during the past century or so. An example is * /ua/ 'rain' as listed in Caillot 1914 which is exclusively /toiti/ in contemporary spoken Tuamotuan. There are many words in older texts as in Caillot 1914 that are not intelligible to young Tuamotuans today.⁸

Unfortunately, texts compiled in the first three decades of this century are not thoroughly phonemic in that a phonemic glottal stop, as well as phonemically long vowels, are not so marked.

5.0 Glottal Stop as a Phoneme

The syllabic structures of Tuamotuan are V, CV, VV, CVV, VVV and CVVV. /' / (glottal stop), which is a consonant, usually occurs within these syllabic shapes of Tuamotuan.

/ 'ete/	'basket'
/ 'oe/	(in free variation with /koe/) 'you'
/ 'ori/	(in free variation with /kori/) 'dance'
/o'e/	(in free variation with /oge/) 'famine'
/va'u/	'eight'
/ho'e/	'one'
/tia'a/	'shoes'

⁸ Personal conversation with Mr Tekehehu Munanui in August 1968, in Honolulu and Laie, Oahu, Hawaii.

Glottal stop /ʔ/ causes what I call laryngealization of its neighboring vowels ($[\square^{\text{?}}\text{V}]$)⁹, usually those directly following it, although the exact phonetic feature of what I call laryngealization is yet to be investigated. This laryngealization, however, is non-phonemic. More than one vowel may be affected by /ʔ/ and laryngealized.¹⁰

e.g. /toʔ oe/ 'your (intrinsic possession)
 /taʔ oe/ 'your (extrinsic possession)
 /haʔ a+piʔ i+raʔ a / 'school, study'

Articulation of the glottal stop /ʔ/ at utterance-initial position is acoustically weaker than in utterance-medial position, and is occasionally hard to detect.

Utterance-medial glottal stop is stronger than the utterance-initial one, but it occasionally diminishes so much that its presence can be detected only by the presence of the following laryngealized vowel.¹¹

e.g. /faʔ aʔ a/ 'a place name, i.e. the airport of Tahiti'

6.0 Glottal Stop as an Intrusive

6.1 Problem

The occurrence of glottal stop in utterance-initial position in Tuamotuan poses some problems. In the first place, although a relatively large number of words¹² begin with glottal stop, it is clearly audible only in slow deliberate speech, and its presence is not always easy to detect in natural speech.¹³ For example, both /ʔaore/ and /aore/ forms have been recorded in my transcriptions for 'not, no; there is no...'

⁹ The phonetic symbolization used in this paper follows Smalley 1964.

¹⁰ In Tahitian, the frequency of occurrence of the glottal stop /ʔ/ is higher than in Tuamotuan. An impressionistic statement I was tempted to make upon our arrival in Tahiti in the summer of 1967 was that speakers of Tahitian were constantly choking themselves when they spoke Tahitian and that Tahitian was very Arabic.

¹¹ According to Miss Marguerite White, people from the atoll of Reao in the Tuamotuan Archipelago do not have the glottal stop /ʔ/ at all in their speech.

¹² If morphophonemics is defined as "the study of the replacements, losses, and additions of phonemes in the morphology of a language" (v. Pike 1947: 242), discussion of intrusives should perhaps properly belong to morphophonemics. Mention of intrusives, however, may be made here because syllabic structures, whose mention is an inevitable part of a well-conceived phonology of a language, seems to be responsible for some morphophonemics of Tuamotuan. In this section I use such terms as *word* and *morpho* (eme) for the reason stated above, although strictly speaking this might be considered a mixing of levels.

¹³ Three styles of speech are distinguished in this paper: namely, slow deliberate speech, fast deliberate speech and natural speech. Robert Palmer, for example, patiently gave me hundreds of basic words and sentences using the words in the so-called citation form, repeating any word and any sentence three times each. The type of speech of an informant session is defined as deliberate speech. Two different subtypes of deliberate speech were further distinguished. Occasionally, certain ways of articulation were observed only during our informant sessions. This type of slower deliberate speech, which reveals several crucial points of Tuamotuan phonology most clearly, is designated as slow(er) deliberate speech. Deliberate speech occasionally approached natural speech, especially after several repetitions of a given word or a sentence. In other words, ways of articulation at times approached or became identical with those of natural speech. The latter type of deliberate speech is referred to as fast(er) deliberate speech in this paper. Natural speech is the type of speech often referred to as fast speech by other linguists. It is better referred to as natural speech, at least to my mind, because it sounds fast only to a non-native speaker. If a language a linguist has worked on for a year or two still sounds fast to him after the informant period, his work may not be too reliable.

e.g.

- / #'aore+e+paru+too+reu+reu// i+te+haga+hana# /
 'There are no big fish these days.'
- * / #'aore+koe//e+ta 'a+ee//noo+hea+mai//teie+haga+manu+manu# /
 'You do not know where these insects come from.'

In such cases, however, informants are always sure that glottal stop should be present. Moreover, such words are frequently borrowings from, or have cognates in Tahitian with glottal stop. In other cases, the glottal stop varies freely with /k/ or /g/ in certain words regarded as originally Tuamotuan by Tuamotuans. This kind of glottal stop is called a *systematic* glottal stop.

The term *systematic* used to describe the consistent word-initial glottal stop requires further explanation, since it simply means that the 'systematic glottal stop' occurs *relatively* consistently as compared to the sporadic glottal stop to be discussed later. It does not mean, however, that the systematic glottal stop occurs in all environments regardless of the speed of speech and is clearly audible at all times. On the contrary, it is sometimes difficult to detect its presence. As was explained in the section on phrase stress, its presence occasionally is predictable only by the laryngealization of an immediately following vowel/vowels.(v. § 5.0).

Secondly, there are words where glottal stop varies with its absence utterance-initially. Such words are considered by informants to begin with a vowel, and I regard the glottal stop as intrusive. It is, therefore, called an *intrusive* glottal stop. Examples are:

- /inu/ ~ */'inu/¹⁴ 'to drink'
 /i+hea/ ~ */'i+hea/ 'where (past)?'
 /ei+hea/ ~ */'ei+hea/ 'where (future)?'

6.2 Intrusive Glottal Stop

First, the concept of *intrusives* needs to be illustrated with some examples from English.¹⁵

English has the so-called hiatus such as /ie/ (as in /krieyt/ 'create'), and /ui/ (as in /tuiyt/ 'to eat'), which native speakers of English tend to avoid by using semi-vowels /y,w/, as in:

- /krieyt/ 'create'
 /tuwiyt/ 'to eat'
 /ðiyeynjel/ 'the angel'
 /drɔwawt/ 'draw out'

¹⁴ An asterisk means that the following form in phonemic writing is not a correct phonemicization of the particular word following the asterisk.

¹⁵ Phonemicization of English is that of American English by Dr Akira Oota as presented in Oota (1959, especially p.162). Also see Jones (1960: 759-761: 197: 198) et al.

or by using the intrusive /r/, as in:

/əmerikəriz/	'America is...'
/lɔrənd..../	'law and order'

Although a glottal stop is not a phoneme in English, many speakers of English use it in some marginal words, namely interjections such as negative grunts. In the speech of many English speakers, it is also an allophone of /t/ (v. Smalley 1964: 102, Jones 1960: 1950-152, Trager-Smith 1951: 1.5, et al.).

Smalley (1963:102) further states that:

"Many speakers of English use the glottal stop.... frequently also as an 'attack' or 'opening' for words beginning with a vowel phoneme."

English syllables without an initial consonant or consonant cluster are rather rare. Although it is not impossible to articulate, a sequence of two full vowels is probably felt to be somewhat clumsy by speakers of English. It is at least harder to pronounce. It is considered that for this very reason many speakers of English avoid hiatus by using intrusives.

Tuamotuan also has the intrusives [y], [w], /' / (glottal stop) and probably also /r/. It is considered that they are used by Tuamotuans probably because there is slight preference for (if not structural pressure working toward) the shape CV(V(V)) over the shape V(V(V)).

Although a glottal stop in Tuamotuan is a phoneme, the occurrence of the sporadic glottal stop is parallel to that of the intrusive /r/ as in /rake/ whose meaning is identical with that of /ake/. Thus the inconsistent sporadic glottal stop is interpreted as an intrusive /' / (glottal stop). In phonemic writing, the intrusive /r/ in /rake/ need not be marked. Similarly, there is no need for the intrusive /' / (glottal stop) to be marked in any way.

This analysis of the second type of word-initial glottal stop places the sporadic glottal stop in the same class as the intrusive [y], [w] (and probably also /r/).¹⁶

It seems valid to state, in terms of general articulatory phonetics, that it is very difficult for some speakers of at least some languages of the world to start out any utterance with a monophthongal vowel.¹⁷ This seems to be one of the basic reasons why various on-glides, phonemic or non-phonemic, are observed in many languages. Hence also the Tuamotuan intrusive /' /.

A most important point to be borne in mind about this discussion is that the phoneme /' / (glottal stop) appears to be a recent addition to Tuamotuan due to Tahitian influence.

¹⁶ It is worthwhile to note that Chomsky and Halle (1968: 307 and 315-316) recognise that glottal stop functions as both a stop and a glide. In light of this information, the intrusive glottal stop of Tuamotuan may well be considered a phonetic glide, like the non-phonemic [y] and [w] rather than a sporadic occurrence of the phonemic glottal stop (/'/). In a different framework, the intrusive /r/ might also similarly be treated as a glide.

¹⁷ One of my informants, Marguerite White, once surprised me very much by making a similar comment in her own lay terms, when I was double-checking whether there was an *uh* sound before words beginning with a vowel.

By a monophthongal vowel is meant a vowel in utterance-initial position not preceded by any intrusives.

Certain shorter preposed minor morphemes (or grammatical words occurring before content words) which are made up only of a vowel/vowels, occur with this intrusive /ʔ/ (glottal stop) very frequently because they typically occur in utterance-initial position.

Some examples are:

/e/ ~ * / 'e/	'a/an (indefinite article) (as in example no. 1 below)
/ua/ ~ * / 'ua/	'perfective' (as in example no. 2 below)
/a/ ~ * / 'a/	'imperative (verbal particle) (as in example no. 3 below)
/i/ ~ * / 'i/	'past (verbal particle) (as in example no. 3 below)

no. 1) * / # 'e+pepenu+gutu+roa+toona# /

'His head is full of fleas.'
(lit. 'His is a very flea-head.')

no. 2) * / # 'ua+kii+roa+i+te+roe# /

'It (house) is full of ants.'

no. 3) * / # a+tahi(+)¹⁸ra+vau// 'a+kite+ai// 'i+te+ 'oo+fii# /

'This is the first time for me to see a snake.'

6.3 Systematic Glottal Stop

It was noted above that initial glottal stop is difficult to hear. Informants themselves, even those who know what is meant by the term *glottal stop* are sometimes momentarily uncertain as to whether or not it is present initially in a given item. They avail themselves spontaneously of the following three tests:

- (a) the presence or absence of a word pair contrasting minimally in the presence of absence of an initial glottal stop;

/ata/	'cloud; shadow'
/'ata/	(in free variation with /kata/) 'to laugh'

¹⁸ Non-phonemic stress occurs predictably on a vowel penultimate to any one of the junctures; i.e. final, and plus (i.e. / #, //, + /). Plus juncture is sometimes lost in well-defined environments, which changes the above-mentioned stress pattern. The lost plus juncture in such a case is marked by /+ / in parentheses.

For further details on stress in Tuamotuan, see "Predictability of Stress in a Polynesian Language: Stress Patterns in Tuamotuan" by the author of this paper to be published in the next issue of "Oceanic Linguistics" of the University of Hawaii.

/oa+oa/	'narrow'
/'oa+'oa/	(in free variation with /koa+koa/) 'happy'
/oe/	'bell'
/'o'e/	(in free variation with /koke/) 'sword'
/ori /	'wander(ing)'
/'ori /	(in free variation with /kori/) 'danc(ing)'
/ana/	'cave'
/'ana/	'coconut-grater'
/apu/	'to seize (usually said of a big fish attacking a smaller fish)'
/'apu/	(in free variation with /kapu/) (1) 'the shell of a coconut after it is grated.' (2) 'palm of the hand.'
/ava/	'a pass or channel in a reef suitable for large vessels'
/'ava/	'a variety of native plant'
/ho'e+a+huru/	'the same (thing)'
/ho'e+'ahuru/	'ten'

(b) the possibility of a parallel form (in what informants regard as original Tuamotuan) with /k/ or /g/;

(Some examples of the word-initial glottal stop which is in free variation with /k/ (or /g/) have already been given in the preceding paragraph. Further examples are:)

e.g.

/'opani/	(in free variation with /kopani/) 'to close (a door, etc.)'
/'ee+'ee/	(in free variation with /kee+kee/) 'armpit'
/'ere/	(in free variation with /gere/) 'nothing'

(c) the knowledge that the equivalent item in Tahitian has a glottal stop,

e.g.

/‘uri+ta‘ata/	‘monkey’
/‘uo+‘uo/	‘white’
/‘uiti/	‘wick of a lamp’
/‘ana+vai+komo/	‘river’

Unlike Tuamotuan which has /k/, /g/ and /‘/ (glottal stop), Tahitian has no */k/ nor */g/, but /‘/ (glottal stop) only. Thus, the frequency of /‘/ (glottal stop) is extremely high in Tahitian. A number of Tahitian words begin with glottal stop. Only a few words (such as /uu/ ‘milk’ and /ufa/ ‘female of an animal’, both of which are also shared by Tuamotuan) begin with an initial vowel.¹⁹

As was described earlier, a great many Tahitian words constitute part of contemporary Tuamotuan vocabulary. Thus, the systematic word-initial glottal stop occurs in a great many Tuamotuan words that are also shared by (and are probably loans from) Tahitian.²⁰

7.0 Extrasystematic Glottal Stop

A glottal stop occasionally occurs where it would not normally occur in terms of the Tuamotuan canonical forms. A brief mention of it might also be conveniently made here in connection with a similar case in English.

Although a glottal stop is not a phoneme in English, it occurs in a number of marginal words such as negative grunts and exclamations as was pointed out earlier. (v. Smalley 1963: 102). Similarly, a glottal stop, which is a phoneme in Tuamotuan, occasionally occurs at *word-final* position where no other consonant ever occurs in marginal words, as in:

/‘aue‘/	‘ouch!’
and:	
/a‘/	‘and then’

¹⁹ In this respect, praise is due to Andrews 1944 who marks not only the word-medial glottal stop, but also the word-initial glottal stop most accurately. The only deficiency is failure to note almost all phonemic long vowels. Example is /‘oo+fi / ‘snake, serpent’ which is listed as / ‘ofi / (v. Andrews 1944: 98). An occasional error about the occurrence of the glottal stop is also observed as in / raot ‘ere / ‘leaf (of a plant/tree)’, which is listed as */ra‘oere/ (Andrews 1944: 134). The fact remains, however, that this is the best of all Tahitian dictionaries ever published in English or in French.

²⁰ A word for ‘river’ in Tahitian, for example, is / ‘ana+vai+pape /. There is no river on any of the Tuamotuan atolls. Tuamotuans thus see a river for the first time in their life when they come up to Tahiti. /komo/ and /pape/ are regarded by native speakers of Tuamotuan as original Tuamotuan and Tahitian words for ‘water’, respectively.

as in the second sentence below:

/ # haga+raa+tou//i+te+haa+veke//peini+pau+roa+pate// e...ta'amu//te+kiato+pau+roa # /
 'They build a canoe, paint it all, apply the putty, and...tie all the arms together.'

/ #ia+oti//a'//haga+te+tee+tee# /

'When it is finished, THEN they make a basket.'

/a' 'and then' given above is a word of very high frequency in Tuamotuan conversation and story-telling. It contrasts with /a/ (without word-final glottal stop) 'imperative verbal particle', as in:

/ #a+haere+noa+koe # / 'Just come!'

A strong glottal stop with an emphatic meaning sometimes occurs before a word beginning with a vowel.

e.g.

/ #'ua+kite+vau//i+aana# / 'I CERTAINLY saw him/her.'

which in a way contrasts with:

/ #ua+kite+vau//i+aana# / 'I saw him/her.'

e.g.

/ #'ia+haere+(a)nake+koe+i+te+oire // hoko+mai+te+tahi+fara+oa# /

'IF you SHOULD EVER go to the town, buy some bread (for me/us, etc.)'

which in a sense contrasts with:

/ #ia+haere+(a)nake+koe+i+te+oire// hoko+mai+te+tahi+fara+oa# /

'When you go to the town, buy some bread.'

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