

## ALAMBLAK ALVEOPALATALS - DEAD PORTMANTEAUS

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### 0. INTRODUCTION

Alamblak<sup>1</sup> alveopalatals are neither clearly contrasting with nor in clear complementation with their corresponding alveolar stops or nasals. Because of this the alveopalatals are a special feature to consider in Alamblak phonology. Historical change related to alveopalatals is evident by comparing the phonologies of the Sepik Hill languages.<sup>2</sup> While some comparative data is included in this study, a thorough comparative study of the Sepik Hill Family would no doubt facilitate a clearer historical perspective of Alamblak alveopalatals. The analysis supporting the conclusion that Alamblak alveopalatals<sup>3</sup> contrast with their alveolar counterparts is presented in this study.

Initial examination of Alamblak phonology suggests that contiguous to alveopalatals the high front close vowel /i/ has an allophonic variant [ɨ]. On the one hand this concise allophonic statement appears to adequately describe the data. There are, however, several serious objections to such a statement and these will be discussed in the conclusion of this paper.

The premise of this paper is that historically a phonemically distinct \*ɨ fused with alveolars resulting in a phonemic alveopalatal series coupled with a neutralization of the close-open contrast of the high front vowels. Thus [i] and [ɨ] are allophones of a single phoneme and alveopalatals are full phonemes. Describing the alveopalatals as originating from the fusion of alveolars with a high front open vocoid explains irregularities with less difficulty than appears possible with other descriptive statements.

## 1. ALVEOLAR /t/ AND ALVEOPALATAL /s/

The following pairs of words illustrate contrast between /t/ and /s/ in minimal and analogous environments.

/tuim/	['tuim]	<i>eyebrows</i>
/suim/	['šuim]	<i>grass skirt</i>
/töhkföt/	['tëḡkbët]	<i>to stand</i>
/suhkföt/	['šuhḡkbët]	<i>to fall</i>
/nakutr/	[na'kut <sup>^</sup> ḡ]	<i>he yelled</i>
/kusr/	['kuš <sup>^</sup> ḡ]	<i>blackbird</i>
/mitat/	['mitat]	<i>variety of snake</i>
/masat/	['mašat]	<i>much</i>
/yöfhat/	['yëḡḡat]	<i>betelnut</i>
/höfhas/	['xëḡḡaš]	<i>black cockatoo</i>
/mart/	['maḡt]	<i>sun</i>
/bars/	['baḡš]	<i>hornbill</i>

Some cases of apparent contrast may be explained in terms of a fused sequence of [ɪt] manifested as /s/. Noun class S roots<sup>4</sup> take /-s/ as a third order person-number-gender suffix. When roots of this class are affixed with the second order derivational copulative suffix /-e/<sup>5</sup> the fused components of the /s/, the high front vowel of the stem, /i/, plus the third order person-number-gender suffix, alveolar /t/, can be observed separated by the copulative suffix.

/yaus/	['i <sup>u</sup> au-š]	dog -3.s.fem	+ /-e/ →	['i <sup>u</sup> a <sup>u</sup> i-ε -t]	dog -is-3.s.fem	<i>it is a dog</i>
/höfhas/	['xëḡḡa -š]	<i>bl. cockatoo</i> -3.s.fem	+ /-e/ →	['xëḡḡa <sup>l</sup> -ε -t]	<i>bl. cockatoo-is</i> -3.s.fem	<i>it is a black cockatoo</i>
/bars/	['baḡ -š]	<i>hornbill</i> -3.s.fem	+ /-e/ →	['baḡi -ε -t]	<i>hornbill-is</i> -3.s.fem	<i>it is a hornbill</i>
/döbs/	['dëḡb -š]	<i>falcon</i> -3.s.fem	+ /-e/ →	['dëḡbi -ε -t]	<i>falcon-is</i> -3.s.fem	<i>it is a falcon</i>

The preceding examples indicate that word-final /s/ may be considered a fusion of the sequence /it/. The sequence /it/ does, however, occasionally occur word-finally. Following /r/, /s/ contrasts with the sequence /it/. Compare:

/barit/	['bařit]	<i>lake</i>
/bars/	['bařš]	<i>hornbill</i>
/bubuwrit/	[bu'bu <sup>u</sup> řit]	<i>red grass</i>
/buburs/	[bu'buřš]	<i>swamp bog</i>

A plausible solution to the problem is suggested after comparing the data with the smaller Kuvenmas dialect. A preliminary comparison of the dialects indicates that the Kuvenmas sequences [is] and [ɪs] correspond to the Karawari sequences [it] and [š] respectively (see footnote 2, examples 4 and 5). Thus it may be postulated that Karawari /s/ [š] is a portmanteau phone representing the sequence [ɪt].

The choice of [ɪt] rather than [it] nicely explains the otherwise arbitrarily-established noun classes based on the two allomorphs, -t ~ -s, of the third person singular feminine suffix. In this case noun class S results from the phonological process of fusion of [ɪ] with the suffix /-t/.

In addition, there is also support for the conclusion that [š] is a fusion of [ɪt] rather than [it] from within the phonological system of the Karawari dialect. The following examples suggest the presence of [ɪ] root-finally. The noun cited is the only noun observed in which the [ɪ] is manifested root-finally in the dual and plural forms of the noun. Furthermore the manifestation of [ɪ] is optional. Although the examples are at best residual, nevertheless they are indicative of a vestigial root-final high front open vowel.

[bu'buřš]	<i>swamp bog</i>
[bu'buřš] ~ [bu'buřɪš]	<i>swamp bogs (dual)</i>
[bu'buřm] ~ [bu'buřɪm]	<i>swamp bogs (plural)</i>

Even though *swamp bog* is usually reacted to as a consonant-final root, the derived copulative form reveals the root-final vowel, e.g., [bu'buřm] + /-e/ → [bu'buřɪem] *they are swamp bogs*. Although the vowel is usually lost by the processes of fusion and deletion, the derived copulative form suggests that it is covertly a part of the root.

Interpreting /s/ as a portmanteau phoneme of the posited sequence [ɪt] does not, however, solve all of the problems. If /s/ is to be considered as a portmanteau phoneme, one would expect /s/ to be the fused sequence of two phonemes (/ɪt/) either in complementary distribution with the sequence or actually functioning as a sequence of the two phonemes (Pike, 1967:318). The vocoid [ɪ], however, does not command phonemic status in the phonology; only in the two variant forms of *swamp bogs* does [ɪ] occur in environments resulting in contrast with [i], e.g., [bu'bu<sup>u</sup>řim] *red grasses*, [bu'buřɪm] *swamp bogs*. In all other third person dual and plural

forms of nouns in which [ɪ] would be expected to be manifested, [i] occurs instead. For example *lake* and *hornbill* are homophonous in all forms except third person singular feminine. Compare:

	/barit/ <i>lake</i>	/bars/ <i>hornbill</i>
masculine	['bařɪʔ]	['bařɪʔ]
feminine	['bařit]	['bařɪʔ]
dual	['bařiɸ]	['bařiɸ]
plural	['bařim]	['bařim]

Therefore, since [ɪ] is essentially non-contrastive with [i], to postulate /s/ as a portmanteau fused sequence which is phonemically written /ɪt/ is unwarranted.

It may be argued that syllable patterning favors interpreting /s/ as functioning as a sequence. Such an interpretation would retain the same syllable pattern in all forms of a word such as *hornbill*. However, if it seems best to sacrifice symmetry at this point, there are many examples of the CVCC syllable pattern which would support the interpretation: /bars/ *hornbill*, e.g., /gurt/ *she beat (the drum)*, /kaht/ *fire*.

So within the phonological system of the Karawari dialect of Alambak, alveopalatal /s/ is phonemic. It is plausible that historically [i] and [ɪ] did in fact contrast as they apparently still do in the Kuvemas dialect, but that this contrast has been virtually neutralized in non-alveopalatal environments. Only one exception has been observed (*swamp bogs*). This solution allows noun classes which are defined according to two allomorphs of the third person singular feminine suffix. The origin of the smaller noun class S may be explained by the fusion of the sequence of two phones, one of which is non-phonemic.

## 2. /d/ AND /j/

The following pairs of words illustrate contrast between /d/ and /j/ in analogous environments:

/dugo/	['dugo]	<i>nearly</i>
/jubt/	['jubt]	<i>child's bow</i>
/dift/	['dift]	<i>white soil</i>
/jingt/	['jingt]	<i>insect basket</i>
/nandömr/	[nan'dëm <sup>^</sup> ʔ]	<i>snake</i>
/najömr/	[na'jëm <sup>^</sup> ʔ]	<i>older brother</i>
/kadikö/	[ka'dikë]	<i>you (pl) be quiet</i>
/gajem/	['gajëm]	<i>they are chairs</i>

There are cases of apparent contrast that may be explained in terms of a fused sequence [ɪd] manifested as /j/. Compare the following pairs of two-word clauses:

/bari dohretet/	['bari doḡ'ʔetɛt]	<i>it is without a lake</i>
/bar johretet/	['bar joḡ'ʔetɛt]	<i>it is without a hornbill</i>
/fawi dohretet/	['pa <sup>u</sup> i doḡ'ʔetɛt]	<i>it is without an outlet</i>
/yau johretet/	['i <sup>u</sup> au joḡ'ʔetɛt]	<i>it is without a dog</i>

While the roots of *lake* and *hornbill* are homophonous (['bari]), the above examples of clauses indicate that there is an underlying difference. The root-final vowel of *lake* does not fuse with /d/ of /dohretet/ *it is without*, whereas the root-final vowel of *hornbill* does fuse with the /d/ to produce an alveopalatal. The conclusion of Section 1 is paralleled here. The stem-final [ɪ] of *hornbill* fuses with alveolars and is neutralized with [i] elsewhere (cf. comparison of *lake* with *hornbill* p.93).

The case of *outlet* vs. *dog* is similar. The two root-final vowels ([i]) appear to be identical. Compare:

['pa <sup>u</sup> i -ɛ -t]	['i <sup>u</sup> a <sup>u</sup> i -ɛ -t]
<i>outlet-is-3.s.fem</i>	<i>dog -is-3.s.fem</i>
<i>it is an outlet</i>	<i>it is a dog</i>

In other forms, however, the [i] of *outlet* remains unchanged whereas the [i] of *dog* fuses with alveolars and is lost in other environments.

Compare:

['pa <sup>u</sup> im]	<i>outlets</i>
['i <sup>u</sup> aum]	<i>dogs</i>

Evidence of morpheme-medial fusion of [ɪd] or [dɪ] → [j] occurs in /najömr/ [na'yëm<sup>h</sup>ʔ] *older brother* and /gajr/ ['gaʔʔ] *chair*. The following ordered rules are relevant to understanding this fusion.

- 1a) [aɪ] + [ʔ] → [aʔɪ]  
 e.g. ['ʔaɪ] + [ʔ] → ['ʔaʔɪ] *ironwood tree (masc)*
- 1b) [aʔɪ] + C<sub>alveolar stop or nasal</sub> → [aʔ] + C<sub>alveopalatal</sub>  
 e.g. [a'gaʔɪ] + [nëm] → [a'gaʔnëm] *let him give (something) to us*
- 2) [aɪ] + C<sub>alveolar</sub> → [a] + C<sub>alveopalatal</sub>  
 e.g. ['ʔaɪ] + [t] → ['ʔaʔ] *ironwood tree (fem)*
- 3) [aɪ] + C<sub>non-alveopalatal</sub> → [ɛ] + C<sub>non-alveopalatal</sub>  
 e.g. ['ʔaɪ] + [p] → ['ʔɛp] *ironwood trees (dual)*

Rule 2 suggests that /a/ + /j/ as in *older brother* and *chair* may represent /a/ plus a fusion of the sequence [ɪd]. There is, however, nothing within the system to verify that such a fusion has taken place in these cases. Only by comparing these words with the Kuvemas dialect can a plausible conclusion be drawn. This procedure brings us to differing conclusions for *older brother* /najömr/ and *chair* /gajr/.

It is assumed that rule 2 does not apply in the Kuvemas dialect because there are no alveopalatal contoids in that dialect. Consequently the following two forms are a result of the last two rules applied to the hypothetical form \*[naɪ'dɛ̃m^ʌʁ] *older brother*.

$$*[\text{na}\text{ɪ}'\text{d}\text{ɛ̃}\text{m}^{\text{ʌ}}\text{ʁ}] \begin{array}{l} \text{older.brother-3.s.masc} \\ \text{-}^{\text{ʌ}}\text{ʁ} \end{array} \rightarrow \left\{ \begin{array}{l} [\text{na}'\text{j}\text{ɛ̃}\text{m}^{\text{ʌ}}\text{ʁ}] \text{ (Karawari) (rule 2)} \\ [\text{nɛ}'\text{d}\text{ɛ̃}\text{m}^{\text{ʌ}}\text{ʁ}] \text{ (Kuvemas) (rule 3)} \end{array} \right.$$

Other similar parallels exist between the two dialects.

Regarding /gajr/ *chair*, comparison with the Kuvemas dialect ['gadɪʁ] indicates that /j/, rather than being a fusion of [ɪd], is possibly a fusion of [dɪ].

While neither a contrastive nor a portmanteau analysis of /j/ proves to be conclusive, the conclusions arrived at in Section 1 seem to follow here. The sequences [ɪd] and [dɪ] (which were possibly phonemic sequences historically) have fused into the alveopalatal phoneme /j/.

### 3. /n/ AND /ñ/

The following pairs of words illustrate contrast between /n/ and /ñ/ in analogous environments.

/nugr/	['nuŋg^ʁ]	<i>sand</i>
/ñungramt/	[ñuŋg^ramt]	<i>throat</i>
/nungwar/	['nuŋgwaʁ]	<i>bird</i>
/ñungwor/	['ñuŋgwoʁ]	<i>he sounds</i>
/wania/	['wania]	<i>come</i>
/wawañña/	[wa'wañña]	<i>listen to me</i>

There are cases of apparent contrast that may be explained in terms of a fused sequence [ɪn] manifested as /ñ/.

/nandömr/	[nan'dɛ̃m^ʁ]	<i>snake</i>
/nañjört/	[nañ'jɛ̃ʁt]	<i>May fly</i>

/htirnöm/	[x <sup>^</sup> ti <sup>^</sup> rñēm]	/harñöm/	['xəřñēm]		
(/hti-Ø	-r	-nöm/)	(/ha -Ø	-r	-ñöm/)
see-near.past-3s.masc-1.pl		give-near.past-3s.masc-1.pl			
he saw us		he gave us (something)			

A comparison of /nandömr/ *snake* and /nañjört/ *May fly* with the Kuvemas dialect ([nan'dēm<sup>^</sup>ř] *snake* add [nɛn'děřt] *May fly*) indicates that the alveopalatal nasal in /nañjört/ may be the result of a fusion of a high front vocoid plus alveolar nasal. *Snake* is identical in both dialects. The difference between *May fly* in both dialects is best described in terms of the operation of rules 2 and 3 (see Section 2) upon the hypothetical form \*[naınděřt]. Thus \*[aɪn] becomes [ɛn] in Kuvemas [nɛn'děřt] *May fly* and [añ] in Karawari [nañ'jěřt] *May fly*.

In the case of ['xəřñēm] *he gave us* the vowel component of the fused sequence phoneme /ñ/ is manifested in other forms of the verb, e.g., ['xəřim] *he gave them*. As is the case with the other alveolars /n/ sometimes appears to fuse with /i/ and sometimes it remains in sequence, e.g., as in [x<sup>^</sup>ti<sup>^</sup>nēm<sup>^</sup>m] *we put them*. The historical contrast between the high front vowels in /htinömm/ *we saw them* and \*/harim/ *he gave (to) them* has been neutralized; the present manifestations of the high front vowel is identical in both words, e.g., [x<sup>^</sup>ti<sup>^</sup>nēm<sup>^</sup>m] *we saw them*, ['xəřim] *he gave (to) them*.

There are no data in the Karawari system which suggest a fusion underlying the alveopalatals in ['ñiñm] *centipedes*. A comparison of the Kuvemas dialect, however, suggests the possibility of the fusion of [nɪ] (cf. footnote 2 example 10).

#### 4. CONCLUSION

The following process may be abstracted from conclusions reached in each preceding section.

$$C_{\text{alveolar}} + [ɪ] \rightarrow C_{\text{alveopalatal}}$$

The high front open vocoid [ɪ] is not considered phonemic in the Karawari dialect. Nevertheless, the underlying effect of the [ɪ] is observable in the above process. This conclusion describes the alveopalatals as fused sequences of two phones. At the same time it avoids postulating two phonemes /i/ and /ɪ/ which contrast only residually due to phonemic overlap and fusion. If this conclusion is in fact true, then Alamlak alveopalatals have resulted from a portmanteau fusion of two phonemes. Now, however, they are described simply as segmental phonemes.

This solution requires the following postulate to explain the irregularities in the system: the Karawari dialect exhibits a systemic pressure

to neutralize the close-open contrast between high front vowels. Thus [ɨ] fuses with alveolars, is lost in the environments V\_C and uC\_C word-finally, and shifts to the /i/ norm elsewhere. Thus:

['buɨ]	→	{ ['buš] ['bum]	<i>rain</i> <i>rains</i>
['bařɨ]	→	['bařim]	<i>hornbills</i>
[bu'buřɨ]	→	[bu'burm] ~ [bu'buřim]	<i>swamp bogs</i>

The alternative solution mentioned in the introduction (/i/ → [ɨ] juxtaposed with alveopalatals) would likewise require certain postulates to explain the irregularities of loss, fusion, limited distribution, and residual contrast within the resulting system.

1) The loss of the root-final high front vowel in some words and not in others, and the fusion of the final vowel of those same words with alveolars producing alveopalatals are grammatically defined processes operating on class S nouns. Compare:

['pa <sup>u</sup> ɨet]	<i>it is an outlet</i>	→	['pa <sup>u</sup> im]	<i>outlets</i>
but ['i <sup>a</sup> ɨet]	<i>it is a dog</i>	→	['i <sup>a</sup> um]	<i>dogs</i>
[bu'bu <sup>u</sup> řɨet]	<i>it is an edible grass</i>	→	[bu'bu <sup>u</sup> řim]	<i>edible grasses</i>
but [bu'buřɨet]	<i>it is a swamp bog</i>	→	[bu'buřm]	<i>swamp bogs</i>
['bařim]	<i>lakes</i>	→	['baři dog'řetɨt]	<i>it is without lakes</i>
but ['bařim]	<i>hornbills</i>	→	['bař jog'řetɨt]	<i>it is without hornbills</i>

2) Alveopalatals are extremely limited in distribution. For example, compare the distribution of /s/ and /t/ word-finally. The phoneme /t/ follows every phoneme except semi-vowels, alveopalatals and /d/. Alveopalatal /s/ follows /i/ and alveopalatals, and other vowels (/a, u/) and consonants (/b, r/) only when the high front vowel has been lost or fused. The distribution of alveopalatal /s/ word-finally, more than in other positions, adds to the evidence that alveopalatal /s/ occurs as a result of phonetic conditioning.

3) There is a residual contrast between /i/ and /ɨ/, e.g., [bu'bu<sup>u</sup>řim] *edible grasses* vs. [bu'buřm] ~ [bu'buřim] *swamp bogs*.

The two solutions briefly discussed here differ on the point of the origin of alveopalatals. Both, however, affirm the phonemic status of alveopalatals and the non-phonemic status of the high front open vocoid [ɨ] in the Karawari dialect.



## N O T E S

1. The Alamlak language is spoken by 1128 people living in the East Sepik District of Papua New Guinea, according to the 1973 Amboin patrol report. It is the easternmost language of the Sepik Hill Family (Dye, et al., 1968). The Karawari dialect with three-fourths of the population is located along the Karawari and Wagupmeri Rivers. The Kuvenmas dialect is located along the shores of Kuvenmas Lake and eastward. The larger Karawari dialect is described in this paper.

The patient assistance of the Amongabi villagers as well as helpful comments of colleagues of the Summer Institute of Linguistics during the preparation of this study is gratefully acknowledged. This research has been supported in part by the Papua New Guinea Research Fund of the Summer Institute of Linguistics.

2. From a brief comparison of seven of the eastern languages of the Sepik Hill Family, correspondences between alveopalatals and alveolars from one language to another is detectable.

The data used for comparing the two Alamlak dialects were collected by the author in 1970-74 while based at Amongabi village periodically during that time. Wordlists obtained by Dye, Townsend, and Townsend were used for comparing the remaining languages. The sequency ny as written in their transcription is regarded as [ñ].

Though the data are too scant to provide conclusive evidence in all cases, a tentative listing of the correspondences of alveopalatals to alveolars is given in Table 1. The data show no example of the Sumariup /d/ corresponding to alveopalatals; since /j/ does not appear in the Sumariup data, Sumariup has been placed in the alveolar list. The data are likewise inconclusive regarding the status of alveopalatals and alveolar nasals of Sumariup, Kapriman, and Mari. Both nasals occur in Sumariup and Kapriman, only the alveolar occurs in Mari. (See Dye, et al., 1968 for the geographical distribution of these languages.)

TABLE 1

Alveopalatals	Alveolars
[ʃ]	[s]
Alamblak (Karawari)	All of the others
[j]	[d]
Alamblak (Karawari)	Alamblak (Kuwenmas)
Kapriman	Sumariup
Watakataui	Kaningara
	Bisis
	Mari
[ñ]	[n]
All of the others	Alamblak (Kuwenmas)
	Mari

A selective list of relevant words from the Karawari and Kuvenmas dialects of Alamblak is given in Table 2.

TABLE 2

English	Karawari	Kuwenmas
1. <i>I fall</i>	[ʃuɣwa]	[tʰuɣwa]
2. <i>guardian spirits</i>	[naʃuŋ'gwaɾm]	[nɛsuŋ'gwaɾm]
3. <i>forehead</i>	[ñɫm'bikt]	[nɫm'bigʃ]
4. <i>hand drum</i>	['watit]	['watis]
5. <i>falcon</i>	['dɛbʃ]	['dɛbɫs]
6. <i>chair</i>	['gaʃʃ]	['gadɫs]
7. <i>child's bow</i>	['jʊbt]	['dʰubs]
8. <i>older brother</i>	[na'jɛm^ʃ]	[nɛ'dɛm^ʃ]
9. <i>snake</i>	[nan'dɛm^ʃ]	[nan'dɛm^ʃ]
10. <i>centipedes</i>	['ñɫm]	['nɫm]
11. <i>let's go</i>	['añɛm]	['aʰnɛm]
12. <i>May fly soup</i>	[nañ'jɛɾpam]	[nɛn'dɛɾbam]

3. The segmental phonemes of the Karawari dialect of Alamblak are given in Table 3.

TABLE 3

## Consonants:

	Bilabial	Alveolar	Alveopalatal	Velar
Stops				
voiceless	p	t		k
voiced	b	d		g
Fricatives				
voiceless	f		s	h
voiced			j	
Nasals	m	n	ɲ	
Vibrant		r		
Semi-vowels	w		y	

## Vowels:

	Front	Back
High	i	u
Mid	e	o
Low	a	ö

Non-phonemic stress ['] is indicated immediately preceding the stressed syllable. Raised vowel symbols, e.g. [<sup>i</sup>], indicate non-syllabicity. (See Bruce, 1974.)

4. There are two noun classes in Alamblak morphology based on the allomorphs -t ~ -s of the third person singular feminine person-number-gender marker {-t}.

5. In the data used in this paper the suffix /-e/ occurs only with /i/-final roots. The following forms illustrate /-e/ affixed to a variety of roots.

[<sup>i</sup>ɛ̃bga -ε -t]  
*betel.nut-is-3.s.fem*  
*it is a betel nut*

[<sup>i</sup>o<sup>u</sup> -ε -t]  
*mosquito-is-3.s.fem*  
*it is a mosquito*

[<sup>i</sup>maʔ-ε -ʔ]  
*sun -is-3.s.masc*  
*it is the sun*

## BIBLIOGRAPHY

BRUCE, L.P.

1974 *Alamblak Phonology*. Manuscript.

DYE, W., TOWNSEND P. and TOWNSEND W.

1968 'The Sepik Hill Languages: A Preliminary Report', *Oceania*, 39(2):146-56.

LAYCOCK, D.C.

1973 *Sepik Languages Checklist and Preliminary Classification*. *Pacific Linguistics*, Series B.25.

PIKE, K.L.

1967 *Language in Relation to a Unified Theory of the Structure of Human Behavior*. The Hague: Mouton & Co.