

Another Look at Tunica Vowels

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1.0 Introduction

In several publications on Tunica, an extinct language once spoken in Louisiana, Mary Haas (1950, 1944) presents a vowel inventory which consists of seven phonemes:

	-back		+back
		-round	+round
+high	i		u
-high			
-low	e		o
+low	ε	a	ɔ

A close study of the morphophonemic alternations within the language suggests that there were only five underlying vowels and that the occurrence of [ε] and [ɔ] was predictable. In this paper, I will attempt to demonstrate that [ε] and [ɔ] are derived in two ways: (1) vowel coalescence and (2) assimilation. I will discuss the effects of each of these processes separately.

2.0 Vowel Coalescence

In "A Grammatical Sketch of Tunica" (1944), Professor Haas presented the following rules for vowel contraction:

- | | | |
|----------------------|-------------------------------------|-------------------------------------|
| 1) i, e or ε + a > ε | /militani/
[milɛni] ¹ | 'red + quotative enclitic' |
| 2) i + e > e | /?i+ehtini/
[?ehtini] | 'my + it is ... 's'
'it is mine' |
| 3) u + a > ɔ | /molu+tani/
[molɔni] | 'full + quot. enc.'
'it is full' |
| 4) u + e > o | /?u+ehtini/
[?ohtini] | 'his + it is ... 's'
'it is his' |

The generalization implicit in these four individual statements is that when two vowels coalesce, the resultant vowel maintains the backness and roundness of the first vowel and the height of the second. This fact can be adequately stated by means of the following rule:

Rule 1: Vowel Coalescence

$$\begin{array}{ccc}
 V & + & V & > & V \\
 [\alpha \text{ back}] & & [\beta \text{ high}] & & \begin{bmatrix} \alpha \text{ back} \\ \beta \text{ high} \end{bmatrix}
 \end{array}$$

There is, however, one complication to this rule which arises when two high vowels coalesce. The resultant vowel is [i], e.g.

- 5) u + i > i

(b)	/ho + was/	'out + ...'
Rule 3	o	
	[howas]	'outside'

It has not been possible to find examples similar to this, i.e. where a prefix ending in /e/ or /o/ alternates with [ɛ] and [ɔ] respectively, but there are a number of verb stems where only [ɛ] occurs in the surface forms, e.g. [peka] 'to hit', [wesa] 'to jump' and [ʔema] 'to burn'. I claim that these are phonemically /peka/, /wesa/ and /ʔema/ respectively based on 'Principle X' of Zwicky (1975:159) which states;

If some occurrences of a segment X are derived from a remote representation distinct from X, then all occurrences should be derived from remote representations distinct from it.

If one wishes to give [ɛ] phonemic status from these forms, Rule 3 would have to be modified so that only the vowel [a] conditions the lowering of mid vowels. If the rule was not changed, we would expect the form for 'he jumped out' to be *[hɔwesaweni] and not [howesaweni]. Thus, granting phonemic status to [ɛ] would seem to be an unnecessary complication of the phonological system.

3.2 Progressive Assimilation

The conditional marker in Tunica has the form /-ʔanč/. Note the variation in the following three forms:

(a)	[kanarapʔanč]	'if I kill something'
(b)	[kanalapuyukʔənč]	'if I cook something'
(c)	[tanehtalimašʔonč]	'if I make the bed'

The variation in the vowel of the suffix is conditioned by the final vowel of the verb stem. The conditioning factors are obscured by a rule that deletes a vowel before a glottal stop across a morpheme boundary. More formally this latter rule can be stated as:

Rule 4: Vowel Deletion

V ---> ∅ / ___ + ʔ

The rule which accounts for the vowel alternation is:

Rule 5: Progressive Assimilation

V ---> $\left[\begin{array}{l} \alpha \text{ back} \\ \beta \text{ round} \end{array} \right]$ / $\left[\begin{array}{l} \alpha \text{ back} \\ \beta \text{ round} \end{array} \right]$ V C $\left[\begin{array}{l} \alpha \text{ back} \\ \beta \text{ round} \end{array} \right]$ [+ low] _____

The underlying forms of (a), (b) and (c) are /kana+rapa+ʔanč/, /kana+lapu+yuki+ʔanč/ and /tanehtali+mašu+ʔanč/ respectively, the stems being /rapa/, /yuki/ and /mašu/. Compare these with the following forms:

[rapawihč]	'he would kill'
[yukitihč]	'she had cooked'
[tanehtalimašutihč]	'she had made the bed'

From these examples the underlying final stem vowel is obvious.

As the rule stands, it also predicts that there will be an assimilation across an [h] as well. This appears to be the case as seen from the following examples with the negative marker /-ʔaha/.

- (d) /mili + ʔaha/ 'red + not'
 Rule 5 ε ε⁵
 Rule 4 ∅
 [milʔehε] 'It's not red'
- (e) /molu + ʔaha/ 'full + not'
 Rule 5 ο ο
 Rule 4 ∅
 [molʔohο] 'It's not full'

Rule 5 also shows some interaction with Rule 1, Vowel Coalescence.

- (f) /ti + ahaya + ku/ 'her + brother + m.sg.suff.'
 Rule 1 ε
 Rule 5 ε
 [tcheyaku] 'her brother'

4.0 Rule Ordering

In the above sections, five rules have been proposed to account for the vowel alternations in the language. These are:

- (1) and (1a) Vowel Coalescence
- (2) h - Insertion
- (3) Regressive Assimilation
- (4) Vowel Deletion
- (5) Progressive Assimilation

As pointed out in Section 2.0, h - Insertion is crucially ordered before Vowel Coalescence to prevent the coalescence of mono-syllabic stem vowels with suffixes, e.g. /ma + at/ ----> [mahat] but not *[mat]. It is also evident from (f) that Vowel Coalescence must precede Progressive Assimilation as well.

- | | |
|---|--|
| /ti + ahaya + ku/
Rule 1 ε
Rule 5 ε
[tcheyaku] | /ti + ahaya + ku/
Rule 5 ---
Rule 1 ε
*[tchayaku] |
|---|--|

(d) shows that Progressive Assimilation precedes Vowel Deletion, Rule 4.

- | | |
|--|---|
| /mili + ʔaha/
Rule 5 ε ε
Rule 4 ∅
[milʔehε] | /mili + ʔaha/
Rule 4 ∅
Rule 5 ---
*[milʔaha] |
|--|---|

Insofar as can be determined, the two assimilations do not have any effect upon each other. However, it was not possible to find an example which demonstrates this fact. The following hypothetical example should show that either ordering, i.e. Progressive Assimilation before Regressive or vice versa, would predict the proper surface form.

/kipe + ?aha/			/kipe + ?aha/		
Rule 3	ε		Rule 5	ε	ε
Rule 5		ε ε	Rule 3	ε	
Rule 4	∅		Rule 4	∅	
	[kip?εhε]			[kip?εhε]	

From this example, then, it is clear that we can group the two processes of Assimilation together for the purposes of rule ordering giving us the order: h - Insertion

- Vowel Coalescence
- Vowel Assimilations
- Vowel Deletion

5.0 Conclusion

In this brief sketch of several phonological rules and their interactions in Tunica, I have shown that the occurrence of [ε] and [ɔ] is predictable and therefore they should not be granted phonemic status. Unfortunately for this analysis, this or any hypothesis is untestable since the language is extinct and the intuitions of the speakers can therefore not be tapped.

It is possible that the language at the stage reported was in a restructuring period where [ε] and [ɔ] were acquiring phonemic status due to the environments for their derivation gradually being obscured. If this is the case then these rules merely show the development. The other possibility, and this is my position, is that these were ongoing, productive rules in the language and that there was only a five vowel underlying system. Only further study into more forms of the language will provide evidence in favour of one argument or the other.⁶

Footnotes

¹I have not included stress placement in this paper.

²See Section 3.2 for the explanation of the occurrences of [ɛ] in this word.

³p. Msg. smf. = third person, masculine singular, semelfactive. See Haas (1944:349) for an explanation of semelfactive.

⁴From the occurrence of [ɛ] in this position, the rule of Progressive Assimilation may have to be changed to:

$$\begin{array}{ccccccc} V & \text{--->} & V & / & \text{---} & C & C & V \\ [- \text{high}] & & [+ \text{low}] & & & [\alpha \text{ cont}] & [- \alpha \text{ cont}] & [+ \text{low}] \end{array}$$

This will account for the occurrence of [ɛ] in other words such as [hensa] and the non-occurrence of [ɔ] in [tonmahonšeman].

⁵The application of this rule is from left to right in all environments which match the environment of the rule.

⁶There are a number of forms in the language which I can not as yet account for. Some of the forms, e.g. [čoha], may be lexical exceptions but others cannot be explained in such simple terms. These exceptions will be the prime area of my future work in this language.

Bibliography

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