

## NASALS AND NASALIZATION IN CREEK

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1.1 Creek<sup>1</sup> has three nasal consonants, m, n, and ŋ, but ŋ occurs only before k.<sup>2</sup> However, both m and n also occur before k so ŋ cannot be dismissed simply as a conditioned variant of one of the other two. Examples:

- (1) a. hámkín one. b. opánka a dance. c. cáŋki my hand.

Still, because of the constraints upon its occurrence, it is obvious that it must have some relationship to one of the other two nasals, and indeed it does. The relationship is between ŋ and m and this is revealed in dialectal variation and in etymological connections, as in

- (2) a. yalómka root. b. yalónka root.  
(3) a. hámkín one. b. ahaŋkatíta to count. Also:  
c. ahomkatíta. d. ahoŋkatíta.

This and other evidence shows us that whenever we have Creek ŋ, a related or earlier form with m can be assumed. But this should not be allowed to obscure the fact that many words with ŋ show no variation.

Creek nasals occur phonetically in both voiced and voiceless varieties. The voiced nasals m and n occur in all positions except before hC, while the voiceless nasals fill the gap by combining with hC. Since the voiced nasal ŋ occurs only before k, the voiceless nasal ŋ represents ŋh before k. Examples of voiced nasals:

- (4) a. mamíta to pick (apples, etc.). b. hatám again.  
c. hompitá to eat. d. lámhi young bald eagle (syllabified as lám-hi).  
(5) a. niní road, trail. b. yahán wolf (obj.). c. wánhi firm, hard.

Examples of the voiceless nasals are:

- (6) a. camhcá·ka [caMca·ka]<sup>3</sup> bell. b. kimhki·kitá [kiMki·kitá] to rumble, make a rumbling noise. c. hamh·ha·kitá [haMha·kitá] to imitate the cry of an owl. d. kamh·talá·ko [kaMtalá·ko] peanuts. e. wánhka [waNka] thirst.  
kanhtalá·ko [kaNtalá·ko] peanuts (archaic var. of d).  
f. móghko·s [móŋko·s] it's not.

1.2 The nasals *m* and *n* enter freely into two-consonant combinations in medial position. In other words, they occur before or after a stop, a spirant, or another sonorant. Tables 1 and 2 below show the actually attested combinations.

Table 1.

|   | <u>m precedes</u> | <u>n precedes</u> |   | <u>m follows</u> | <u>n follows</u> |
|---|-------------------|-------------------|---|------------------|------------------|
| p | +                 | -                 | p | -                | -                |
| t | +                 | +                 | t | -                | -                |
| c | +                 | +                 | c | -                | -                |
| k | +                 | +                 | k | +                | +                |
| f | +                 | +                 | f | -                | +                |
| ʃ | +                 | +                 | ʃ | +                | +                |
| s | -                 | +                 | s | +                | +                |
| h | +                 | +                 | h | +                | +                |
| m | +                 | -                 | m | +                | -                |
| n | -                 | +                 | n | -                | +                |
| l | -                 | +                 | l | +                | -                |
| w | +                 | +                 | w | -                | -                |
| y | -                 | +                 | y | +                | +                |

The only two-consonant medial combinations that are lacking in the data are: *ms*, *mn*, *ml*, *my*, *np*, and *nm* (with nasal preceding) and *pm*, *tm*, *cm*, *fm*, *nm*, *wm*, *pn*, *tn*, *cn*, *mn*, *ln*, and *wn* (with nasal following). It is clear that only two identical nasals are allowed in medial position; hence *\*mn* and *\*nm* are nonoccurring. An assimilation rule also precludes the occurrence of *\*np*. The nonoccurrence of *w* before either nasal is bound up with the fact that *w* is extremely rare in syllable-final position; hence *w* is nonoccurring before many other consonants besides the nasals. Why nasals appear only after *k* in the stop-affricate set is not entirely clear. The liquid *l* likewise does not combine freely with the nasals, since *ml* and *ln* are lacking. Among the spirants, the nasals combine freely only with *ʃ* and *h*, less freely with *f* (*mf* is lacking) and *s* (*sm* is lacking). Or, to put it in another way, *n* combines freely with all the spirants, but *m* does not precede *f* or follow *s*. It should be pointed out, however, that except for the lack of *\*mn* and *\*nm*, the other gaps are in a sense fortuitous. The rules of reduplication would turn up the missing items if there were stems of the type *sVm-*, *lVm-*, *mVp-*, *mVt-*, *mVc-*, *nVp-*, *nVt-*, *nVc-*, and *nVl-*. Examples of the medial two-consonant combinations involving nasals are given in the following paragraphs.

A very common kind of medial two-consonant cluster in Creek is the geminate cluster<sup>4</sup> and *m* and *n*, like all other Creek

consonants except ŋ and w,<sup>5</sup> occur frequently as geminates, e. g.

- (7) a. immá·hi his father-in-law. b. hamma·kitá to say this. c. hónna dress. d. fikhonnítá to stop.

Some examples of other two-consonant combinations containing nasals are provided in (8), showing examples with nasal preceding (see Table 1), and (9), showing examples with nasal following (see Table 2).

- (8) a. sámpa basket  
 b. tilimtikí· fine, pulverized (pl.)  
 c. camcapí· sweet (pl.)  
 d. ímka gift  
 e. timfaccítá to enter into an agreement with  
 f. a·lamleycítá to open the eyes  
 g. acimhokíta two to climb  
 h. imwo·hkitá its (dog's) bark  
 i. a·cínta diamond rattlesnake  
 j. afincá· hornet  
 k. afankítá to kiss  
 l. cafonfáski gig; bayonet  
 m. ânława wilderness  
 n. insámpa his basket  
 o. wánhi· hard, firm  
 p. inlitkitá to run from  
 q. mihínwa truth  
 r. inyiklitá to pinch for
- (9) a. tilíkmi· fine, pulverized (sg.). Contrast (8) b.  
 b. mi·łmi·yítá to flop, flap, flutter  
 c. mismí·cítá to flutter the eyelids  
 d. ohmisi·tteycítá to blink, wink at someone  
 e. talmocási New Town (a Creek town)  
 f. má·keymác I said (III)<sup>b</sup>  
 g. cafíkni· well (sg.)  
 h. páfni· fast (sg.)  
 i. isnafkitá to hit someone with something  
 j. ilnisíta to go and buy something  
 k. akwá·hna willow  
 l. kofêneys I thumped something with fingernail (I)

1. 3 Medial three-consonant clusters are relatively rare and most of these contain a sonorant plus h plus another consonant. Some examples involving nasals are illustrated above in (6) a, b, c, d, e, and f. These show the nasal as the first consonant and

a stop or h as the third consonant. For whatever reason, m is much more common as the nasal in such a combination. Moreover examples of a nasal as the second of three consonants do not exist and those of a nasal as the third consonant are extremely limited:

(10) a. seyhnitá [seYnitá] to leak. b. fayhnitá [faYnitá] to run (of liquid), to flow. (Note the similarity of phonetic shape and meaning.)

Some medial three-consonant clusters containing nasals are the result of vowel loss, e. g.

(11) ónckis you do. Contracted from o·míckis. Cf. examples in (12) a, b, c, and d.

1.4 Final consonant clusters are also very rare and are usually the result of vowel loss. In such clusters a nasal may precede but not follow a stop, as in (12) a, b, and c, though it may follow a nonnasal sonorant (12) d.

(12) a. ístónt whatever it is. From ísto·mít.  
b. má·ho·kánk that's what they used to say (IV). From \*má·ho·kantís. c. mōŋks no. From mō·miks. d. (i)stamêyn where.

2.1 Metathesis is relatively common in Creek. There are two types, one of which is sporadic and the other of which is entirely regular. Sporadic metathesis involves adjacent or consecutive consonants and nasals are not infrequently involved. This type can signal a difference between dialects, or at least idiolects. The interchange is usually  $l \sim n$  or  $l \sim n$ , e. g.

(13) a. ka·łoníta  $\sim$  ka·nołíta to shoulder, carry on the shoulder. b. haloníski  $\sim$  hanolíski devil's shoestring (an herb used for fish-poisoning). (Also hanoníski.)  
c. simaló·ni (rare) (from Spanish cimarron)  $\sim$  simanó·li Seminole. The metathesized variant is also the source of the English loan.

Regular metathesis involves a stem ending in k followed by m, n, l, or s in the singular form. The plural form is constructed by interchanging the k with the m, n, l, or s before infixing the reduplicated element (the first CV of the stem) between them. Examples showing the treatment of k plus a nasal are:

(14) a. tilikm- in tilíkmi· fine, pulverized (sg.);  
tilim-ti-k- (reduplicated element -ti-) in tilimtikí· (pl.)

- b. cafikn- in cafíkni· well (sg.); cafin-ca-k- in cafincačí· (pl.)  
 c. cičíkni· globular (sg.); cičincikí· (pl.)  
 d. cofókni· pointed (as needle) (sg.); cofoncokí· (pl.)

2.2 It has been shown in (2) a, b, and (3) a, b, c, d, above that m can vary with ŋ before k. In some cases the assimilation of m to ŋ before k is required as part of the regular morphophonemic rules. Thus the prefix im- (its shape before vowels) which is used as the third person alienable possessor before nouns and as the third person indirective/benefactive before verbs regularly changes to iŋ-before stems beginning in k,<sup>7</sup> as in:

- (15) a. iŋká·pa his coat. Cf. immí·kko his chief.  
 b. iŋkosapítá to implore someone. Cf. immamíta to pick (apples) for someone.

The same prefix appears as in- before all alveolars and, with many speakers, also before all labials except m. Thus:

- (16) a. innafkitá to hit someone for someone. b. inwi·sitá to fan (corn). (But imwi·sitá for some speakers.)  
 c. infollitá their ways, customs. (But imfollitá for some speakers.)

There are clearly two sets of rules for this prefix. In the one case im- is prevocalic and prelabial (with prevelar showing iŋ-) while in- is used elsewhere. In the other case in- is preconsonantic except before m and k, while im- remains prevocalic. These differences are dialectic.

Nasal assimilation also occurs in contracted forms. The combination V·miC# or V·miCC- loses the final vowel with resultant assimilation of m to n if the following C is t or c, e.g.

- (17) a. ci·mít ~ cínt you (subj.). b. i·mít ~ ínt he, she (subj.). Cf. anít ~ ánt I (subj.).

Such contractions are common in verbal paradigms also, e.g. ónckis you do (< o·míckis), as shown in (11) above.

3.1 Nasalization plays a prominent role in Creek phonology. There are, however, two functionally distinct and entirely unrelated kinds of nasalization. The first kind is simply another instance of contraction through a nasal, as in:

- (18) a. ô·mi·s, ô·<sup>n</sup>s, ô·s there is. b. ískała·nís, ískała·<sup>n</sup>s he will drink.

In addition there are a few dialectal forms in which VnC is replaced by V·C, e. g.

- (19) a. insá·pa ~ i·sá·pa garfish. b. inhalíwa ~ i·halíwa provisions. Also i·hálwa.

These variants develop when C is a spirant.<sup>8</sup> We can assume an intermediate form with a nasalized vowel, viz., \*i·<sup>n</sup>sá·pa and \*i·<sup>n</sup>halíwa. These examples, then, are similar to those illustrated in (18) a, b, except that in these cases the uncontracted form has a short vowel. In both cases denasalization is the end result.

3.2 The second kind of nasalization is quite distinct morphologically. It functions indeed as a kind of infix and is used in the same way as vowel length and the falling and high (rising) tonal accents are used in the formation of aspectually differentiated stems derived from a single root (Haas 1940), thus:

- (20) a. ní·<sup>n</sup>síckis you keep buying it. nis- (root) to buy.  
Derived stems: nis- (infinitive), níhs- (first past tense completive), nf·s- (completive in other past tenses), ni·s- (progressive), and ní·<sup>n</sup>s- (intensive or continuative).  
b. hí·<sup>n</sup>hi· good. hił- (root).  
c. ná·<sup>n</sup>fkeys he kept hitting him (I). nafk- (root).  
d. hokkó·<sup>n</sup>la both. hokkol- (root).

In the examples shown in (20) a, b, c, and d above, the intensive stem is formed by vowel-lengthening as well as nasalization and high (rising) tonal accent. But vowel-lengthening is blocked in the case of stems whose last vowel is followed by a sonorant (m, n, -ŋ-, l, w, y) and another consonant. In this situation the intensive stem is marked by nasalization and high (rising) tonal accent only. The nasalization affects the vowel plus sonorant but is particularly noticeable on the sonorant in the case of l, w, and y, as shown in (21) a, b, c, and d. When the sonorant is a nasal, the nasalization has the affect of extra lengthening even if the nasal is already geminated, as in (21) g.

- (21) a. háł·<sup>n</sup>wósi· extremely high, really high. halw- (root).  
b. láw·<sup>n</sup>kósi· extremely deep, really deep. lawk- (root).  
c. yahăy·<sup>n</sup>keys he kept on singing (I). yahayk- (root).  
d. hōy·<sup>n</sup>hkáyeys I was continually calling him (I).  
hoyhk- (root).  
e. háł·<sup>m</sup>kósi· just one of a kind. Cf. háł·<sup>n</sup>kósi· one of a kind. hamk- (root).

- f.  $s\check{a}m^m$ hkis it keeps buzzing away. samhk- (root).  
 g. fikh $\check{o}n^n$ neys he was continually stopping (I). fik-  
 honn- (root).  
 h. caw $\check{a}n^n$ hkeys I was continually getting thirsty (I).  
 wanhk- (root).

This concludes the examples of nasals and nasalization in Creek. The following section is devoted to a discussion of the significant facts disclosed in the data.

4.1 Recently a considerable body of literature on nasals and nasalization has been developing (e. g., Ferguson, Hyman, and Ohala 1975). In particular there has been some interesting discussion on how to classify nasals from the point of view of language universals (Crothers 1975, Ferguson 1975). Salient features with regard to Creek nasals and nasalization are as follows:

(a) Creek agrees with the majority of the world's languages in having contrasting labial and dental nasals. However, there is in addition a velar nasal  $\eta$  which has some special characteristics:

i. It contrasts with the other two nasals in only one position, namely before the velar stop k. It is therefore what I have in an earlier work called a 'defective' phoneme (Haas (1940).

ii. It arose from m through assimilation to k. In some circumstances its use is invariant (e. g.  $i\eta$ - before k as alienable prefix with nouns and as indirective/benefactive with verbs). In all other circumstances it frequently varies with m, particularly in different dialects or idiolects.

(b) Creek nasals are basically voiced. They are voiceless only when combined with h before another consonant. They share this feature with the semivowels w and y which occur voiceless in exactly the same circumstances, e. g. akc $\acute{a}w$ hko [akc $\acute{a}W$ ko] least bittern (bird), payhkit $\acute{a}$  [paYkit $\acute{a}$ ] one to whoop; payhhokit $\acute{a}$  [paYhokit $\acute{a}$ ] two to whoop; seyhnit $\acute{a}$  [seYnit $\acute{a}$ ] to leak. However, the liquid l, alone of the sonorants, does not occur voiceless, but this is probably because a hypothetical combination \*lh (in \*lhC) has been replaced by the spirantal voiceless lateral  $\check{t}$  which belongs strictly to the class of spirants along with f, s, and h.

(c) Creek nasals have many features which place them in the class of voiced sonorants, viz. m, n, - $\eta$ -, l, w, y:

i. Creek voiced sonorants occur voiced in all positions except in combination with h before C, as shown

above. In this combination all sonorants except l occur voiceless.

ii. Only short vowels occur before a sonorant, including l, plus a C. In other words, vowel-lengthening is blocked in these circumstances.

There are virtually no features which place the nasals in the class of voiceless stops beyond position of articulation, viz. p t k alongside m n -ŋ-. There are even less features which would place them in the class of voiceless spirants since they have even less in common in regard to place of articulation (f s ʃ h).

4.2 Nasalization of vowels is very special in Creek. We cannot speak of a class of nasalized vowels because such a class does not exist. Instead nasalization is a feature superimposed upon a long vowel of any quality in two special circumstances:

(a)  $V_1 \cdot NV_2 S > V_1 \cdot {}^n S$  (N = nasal, S = spirant). This type of nasalization is unstable and is, in the speech of many, replaced by complete denasalization, as in (18) a.

(b) The second type of nasalization is one of a bundle of features comprising a complex prosody which serves to characterize the intensive aspect of the Creek verb. The other features are (1) vowel-lengthening (except before a sonorant plus C) and (2) a special tonal accent, high (rising) which is used only in combination with the other features. However, vowel-lengthening is not distinctive in the formation of any particular aspectual stem, but turns out to be required in the formation of several of them, as shown in (20) a. Hence the two unique features for the intensive aspect are nasalization and high (rising) tonal accent. In spite of this double marking, there is no evidence that nasalization is losing ground in these circumstances.

We conclude from this that the first type of nasalization will disappear sooner or later (sooner in some dialects, later in others). The second type of nasalization, however, seems firmly entrenched and will probably remain a characteristic of the language for a long time to come.

4.3 This study of Creek nasals and nasalization is intended as a prelude to the study of these same features in the other Muskogean languages (for a historical perspective) and also in the other languages of the Southeast (for an areal perspective).

## Footnotes

<sup>1</sup>Creek is a Muskogean language, now spoken in eastern Oklahoma in the old Creek Nation. Most of my data was collected in the course of several field trips between 1936 and 1940 under the auspices of the Department of Anthropology, Yale University, the committee on Research in American Native Languages, and the American Philosophical Society (Penrose Fund). Some points were rechecked during a more recent visit to Oklahoma in 1969. Grateful acknowledgment is made to the Committee on Research, University of California, Berkeley, for financial aid used to provide clerical assistance needed in typing and filing my extensive collection of materials.

<sup>2</sup>The consonant phonemes of Creek are: voiceless unaspirated lenis stops and affricate p t c [č] k; the voiceless spirants f [ɸ] ʃ s h; the voiced nasals m n -ŋ-; and the voiced semivowels and lateral w y l. Voiceless variants of the nasals are discussed in the second paragraph of this section and voiceless variants of the other sonorants are discussed in 4.1(b).

The vowels of Creek are short and long i iː; a aː; o oː. The combination ey also occurs, often in dialectal or idiolectal variation with ay. There are also three tonal accents: ˊ(level), ˋ(falling), and ˋ̂(extra high or rising). See Haas 1977.

<sup>3</sup>In the phonetic system being used here, capital letters are used to indicate voicelessness; hence M is voiceless m.

<sup>4</sup>The geminate clusters (always medial) are: pp, tt, cc, kk, ff, ʃʃ, ss, hh, mm, nn, ll, and yy.

<sup>5</sup>The nasal -ŋ- is not found geminated because it occurs only before k or hk. The semivowel w, on the other hand, does not occur geminated because of a gap in the system. However, in at least one dialect of Creek there is a geminate w in such words as iwwiːsitá to fan (corn) where other dialects have imwiːsitá or inwiːsitá. The dialect with the geminate w reflects a Koasati or Alabama substratum since these languages regularly have geminate w in these circumstances.

<sup>6</sup>Creek has four past tenses (Haas 1940). These are distinguished in translation by the use of the Roman numerals I, II, III, and IV for the first, second, third, and fourth past tenses respectively.

<sup>7</sup>The prefix im- is one of a set of four distinguished for person and number, viz. am-, first person singular; cim-, se-

cond pers. sing.; im-, third pers. sing.; and pom-, first pers. plural. All have variants with n and -ŋ- in accordance with the rules mentioned in this section and in reference to example (16) a.

<sup>8</sup>In Koasati the prefix im- (and other members of its set) has as one of its variants a long nasalized vowel before spirants.

<sup>9</sup>In Koasati both voiceless l[L] and voiceless spirantal ɬ are found in word-final position. But [L] in this position is an allophone of voiced l and has no relationship to ɬ.

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