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INCORPORATION IN MUSKOGEAN

Karen M. Booker

Abstract: Each modern Muskogean language contains a number of verbal prefixes, many of which are cognate across the languages. A good number of these, however, reconstruct as independent roots rather than affixes. This incorporation of earlier pre-verbal roots as prefixes is parallel to the previously reported grammaticalization of post-verbal auxiliaries as suffixes. These two phenomena taken together illustrate an overall Muskogean tendency for independent roots to be fused to the main verb.

Introduction

The grammatical relationships encoded in the Proto-Muskogean (PM)¹ verb phrase are, for the most part, signaled either by suffixes or infixes. Verbal prefixes other than the pronominal prefixes are uncommon. Yet, the daughter languages all include a number of non-pronominal verbal prefixes, many of which can be shown to have developed from earlier independent roots. These elements typically fall into three categories: incorporated body-parts, prefixes marking static location, and those indicating directional motion.

Incorporated Body-parts

The presence of derived verb stems² formed by compounding a noun with a verb was first pointed out for Muskogean by Mary R. Haas (1941b). She states that noun incorporation exists as a survival only and is not a productive process in any one of the modern languages. Nevertheless, the data, as presented in her article, contain only one incorporated element, *nok- 'neck', which is found in both Eastern and Western Muskogean. Consideration of a wider range of lexical material provides evidence for reconstructing several other elements as well.

Haas lists three nouns which occur in incorporated form in the Eastern languages. The prefix nok- 'neck, throat' is found in all three branches. In addition, cok- 'mouth' is listed as occurring in Creek and Koasati. The third, fik- 'heart', is found only in Creek. The one incorporated Choctaw form cited by Haas is nok-; she finds no Western cognates for either cok- or fik-.

The problem of identifying incorporated elements in Muskogean is compounded by the fact that often the language which retains the incorporated form has replaced the unincorporated independent noun with a different lexical item. Haas notes quite appropriately that were it not for evidence from the Eastern languages, the Choctaw prefix nok- could

not have been easily identified, since the modern Choctaw word for 'neck', ikq:la, is unrelated to nok-. And without the Choctaw cognate, one would be unable to establish the existence of noun incorporation in the proto-language. With the availability of more lexical information, it is now possible to point out other cognates which occur as bound forms in one language and independent nouns in another.

As just mentioned, the one incorporated element Haas finds in both the Eastern and Western branches is nok- 'neck, throat'. Each Eastern language retains nok- in the independent noun root, making the relationship between the two forms transparent. The modern words for 'throat' and 'neck' are enumerated in (1).³

(1)	A.	nokbi	throat	KJL
	K.	no:bi	neck	MRH2
	H.	nokp-i	neck	MRH2
	M.	nokb-i	throat	FN
		nokb-a:p-i	neck	FN
		(cf. a:p-i 'stalk, stem')		
	Cr.	nók-wa	neck	FN
		nok-fíhpa	throat	LH
		(cf. fíhpa 'musical instrument')		
	S.	nók-wa	neck	MN

As incorporated elements, reflexes of PM *nok can be readily identified in several stems where the reference to the neck or throat is clear, such as those illustrated in (2).

(2)	<u>Creek</u>	MRH2		
	<u>nok-fayy-itá</u>		to wring by the neck	(cf. fayy-itá 'to wring')
	<u>nok-sómk-i:</u>		hoarse	(cf. sómk-i: 'lost')
	<u>Alabama</u>			
	<u>is-no:-kolof-tí-k</u>		He cut her throat with...	JRS2
	<u>nok-bi:-li</u>		to get choked on food	MRH2
	<u>Koasati</u>	MRH2		
	<u>nok-panay-li</u>		to wring by the neck	(cf. panay-li 'to twist')
	<u>nok-solot-ka</u>		to get thirsty	(cf. solot-ka 'to get dry')
	<u>Hitchiti</u>	MRH2		
	<u>nok-paf-i:ki</u>		to choke	
	<u>Choctaw</u>	CB2		
	<u>nok-šil-a</u>		to be thirsty	(cf. šil-a 'to dry')
	<u>a-nok-sit-a</u>		a gallows	(cf. siti:-li 'to tie')

Haas (1941b) finds the incorporated element cok- 'mouth' only in Creek and Koasati. Some of her examples are provided in (3).

- (3) Creek MRH2
cok-wa mouth
cok-payk-itá to put in the mouth (cf. payk-itá 'to put one thing in')
- cok-sa:kk-itá to carry in the mouth
cok-na:h-itá to talk like one who is demented
- Koasati MRH2
cok-so:ka to kiss (cf. so:ka 'to suck on')
ili-co:-hokfi to put in one's mouth (cf. hokfi 'to put one thing in')

While Haas (1941b) does not include Choctaw cognates, they are available. With the exception of Creek/Seminole, each of the Muskogean languages has a word for 'tongue' which is a compound of 'mouth'₄ plus the verb meaning 'to lick'. These forms are reproduced in (4).

- (4) PM *i-žo-laksi 'tongue'
- | | | | |
|-----|--------------------|---------|-----|
| Ch. | <u>i-so-n-la-š</u> | tongue | JNS |
| | <u>ho-lakši</u> | to lick | CB2 |
| A. | <u>o-co-laksi</u> | tongue | KJL |
| K. | <u>i-co-laksi</u> | tongue | KJL |
| M. | <u>co-la:s-i</u> | tongue | FN |
| Cr. | <u>la:s-ita</u> | to lick | LH |

The Choctaw cognate for 'mouth' here suggests the proto-form *i-žo, since Choctaw s and Eastern c is a well established sound correspondence. The initial *i is the third person possessive pronoun. Additional Choctaw reflexes like those in (5) confirm the reconstruction.⁵

- (5) Choctaw CB2
so,n,k-so-a to whistle, kiss (cf. K. so:ka 'to suck on' and K. cok-so:ka 'to kiss')
- sokbis downstream, toward the mouth
ibak-sok-o-n-li-ci to pout

The Creek prefix fik- corresponds to the noun root fi:ki 'heart' (FN). The etymologies of the verb stems in (6) are self-evident. Haas does not find correspondences in the other languages, however.

- (6) Creek
fik-nokk-itá to get sad, sorrowful (cf. nokk-itá 'to get sick') MRH2
fik-somk-itá to get scared, frightened (cf. somk-itá 'to get lost') MRH2
a-fík-lóm-k-ita to lie on one side (cf. lómh-ita 'to lie down') LH

<u>Creek</u> (cont.)	
a- <u>fi</u> k-cákh-ita	to take care of (cf. cákh-ic-ita 'to stick up') LH

Clear-cut Choctaw cognates are rare. In the few cases that do occur, fi has the meaning 'inside', almost always 'inside the body'. Notice, for example, the items in (7).

(7)	<u>Choctaw</u> CB2	
	<u>fi</u> -hop-a	satisfied (cf. hopi 'to bury')
	<u>fi</u> -cokbi	den, hole in the ground (cf. cokbi 'inside corner')
	a- <u>fi</u> :-tap-a	to hurt by accident (cf. tap-a 'to sever')
	a- <u>fi</u> :-kommi	to be mischievous, impatient (cf. kommi-ci 'pain, misery')
	a- <u>fi</u> :b-li	to dent in deep, as into the skull

Furthermore, fi occurs as part of several Choctaw words referring to the body, those in (8), for instance.

(8)	<u>Choctaw</u> CB2	
	ikf-oka	stomach
	ik <u>fi</u> -cokbi	the side between the hipbone and the rib (cf. cokbi 'inside corner')
	ik <u>fi</u> -a	diarrhea

In all likelihood, the initial ik of the lexical items in (8) represents a separate historical morpheme, since ik begins several other Choctaw words, like those in (9), which refer to the body or inside area.

(9)	<u>Choctaw</u> CB2	
	ikq:la	neck
	ikhj:š	medicine
	ikkiši	the brisket, breast
	iklanna	center, middle

These few Choctaw cognates support the reconstruction of PM *fi(k) with the more general meaning 'internal organs, viscera' rather than 'heart', as the Creek cognate implies. A comparison of the modern independent roots for 'heart' in (10) clearly shows Creek to be divergent.

(10)	PM * <u>con</u> - 'heart'	
	Ch. conkaš	CB2
	A. conoska	KJL
	H. conosb-i	ASG
	M. conosb-i	FN
	Cr. fi:ki	FN

While it is true that the transparency of the Creek stems with

fik- suggests a relatively recent development, the Choctaw cognates are sufficient to support at least a provisional reconstruction of *fi(k) in the proto-language.

Besides the prefixes already cited, there are a number of Choctaw vocabulary items which begin with yoš-. It is doubtless a prefix of some kind, since the verbs to which it is added are more often than not identifiable Choctaw stems. A representative sampling of these words is provided in (11).

- (11) Choctaw CB2
- | | |
|--------------------|--|
| <u>yoš</u> -bonoli | to be curly headed (cf. bonolli 'to roll up') |
| <u>yoš</u> -conoli | to bow (cf. conoli 'to be bowed, bent') |
| <u>yoš</u> -pakama | sorcery (cf. pakama 'deceived') |
| <u>yoš</u> -timmi | dizzy (cf. timi-ka-ci 'beating of a drum') |
| <u>yoš</u> -kammi | to lust, burn with carnal desires (cf. kammi 'to stop, plug up') |
| <u>yoš</u> -latali | flat-headed (cf. latasa 'flat') |

No internal evidence exists for the analysis of yoš-, although the meanings of the derived stems provide a clue. It is not until the Hitchiti/Mikasuki word yo:s-i 'head' is noted, that Choctaw yoš- is verified as a reflex of the PM body-part *yos 'head'.⁶

Besides *yos, there is one other PM prefixed element *ik^wa(k), which refers to the head or facial area. Creek ika 'head' (FN) corresponds to the Choctaw incorporated form ibak- in (12).⁷ Since the Choctaw reflex tends to refer to the facial area rather than to the top of the head, *ik^wa(k) is glossed 'face' to distinguish it from *yos 'head'.

- (12) Choctaw CB2
- | | |
|------------------------|--|
| <u>ibak</u> -hata-n-li | a bald face (cf. hata 'white, pale') |
| <u>ibak</u> -lati-n-li | to run at the nose (cf. latinko 'miry, muddy') |
| <u>ibak</u> -piši-n-li | to turn noses and lips (cf. piši 'to suck') |
| <u>ibak</u> -taba-n-li | to be broad nosed |

This reconstruction of PM *zok 'mouth', *fi(k) 'viscera', *yos 'head', and *ik^wa(k) 'face' expands the set of PM incorporated elements begun by Haas from one to five.

Locative Prefixes

In addition to the incorporated body-parts, each modern Muskogean language contains prefixes which specify the static location of a referent. The situation may be the result of a previous directional motion, or it may indicate the starting point of such an action. The prefixes themselves, however, refer to an object at rest. Some languages differentiate as many as three locations: 'on something above ground level',

'on the ground', and 'in the water or below ground'.

In (4) and (5), it was shown that Choctaw sok- 'mouth' is cognate with Eastern cok- also meaning 'mouth'. Another Choctaw prefix, cok-, might easily be confused with Eastern 'mouth', but the derived stems imply a location which is inside, either within an animate or an inanimate referent, as the examples in (13) illustrate.

- (13) Choctaw CB2
- Animate referent:
- cok-folo-ha to stagger, swim in the head (cf. folo-li
'to go around')
- cok-yowata to loathe, feel sick in the stomach (cf.
yowala 'nauseous, disgusting')
- cok-a-ci mad
- Inanimate referent:
- cok-af-fi to pluck out, sg. (cf. M. a:f-om 'He
catches')
- cok-li to pluck out, pl.
- cokolbi a nook or point of land lying in the bend of
a creek or in a fork between two creeks
- cok-o-a to enter
- cok-bi inside corner
- cokka house (cf. Cr. koko 'house')

In the vast majority of cases, Creek cok- clearly refers to the mouth. However, there are isolated occurrences in which cok- must be interpreted in a more general sense, i.e. 'inside' rather than specifically 'in the mouth'. Note the items in (14), for example.

- (14) Creek
- cok-ola-k-ita to enter, dual (cf. M. ola:w-om 'They (2)
come' (FN)) LH
- cok-illi post, pillar (cf. illi 'foot') LH
- coko house FN

Apparently, Eastern cok- represents the merger of two distinct proto-forms. The difference between *ǵok 'mouth' and *čok 'inside' has escaped notice because the Eastern reflexes have fallen together with the collapse of the distinction between PM *ǵ and *č. The proto-forms have separate reflexes in Choctaw, a language which preserves the archaic *ǵ - *č contrast.

If the referent is resting on top of another object, *on marks that position. Reflexes of this PM locative morpheme are found in Choctaw and Hitchiti/Mikasuki.

Choctaw on- is glossed simply 'on'. Its meaning contains no refer-

ence to location with regard to the ground. In the examples in (15), it is irrelevant whether or not the object in question is located at or above ground level.

- (15) Choctaw
 sobah om-binj:li to ride a horse (cf. binili 'to sit')
 JNS
 holisso o:-hiki-a to stand on a book (cf. hiki-a 'to
 stand') JNS
 yakni on-ittola to fall on the ground (cf. ittola 'to
 fall') JNS
on-tala-a to sit/stand on (cf. tala-a 'to stand')
 CB2
on-tala-ka bank of a river (cf. tala-a 'to stand')
 CB2

The Hitchiti/Mikasuki prefix as exemplified in (16), specifies a location above ground. If the reference were to ground level, a different prefix, ta-, would be employed.

- (16) Hitchiti JRS1
on-coko:-l-icka-n You can sit on it...
on-~~l~~ini-ka-li-s I am running over it.
Mikasuki FN
on-hala-l-om It's falling (onto the table).
 ah-on on-folo:k-om It's in the tree (on a branch).

With an action occurring in the water or below ground, a prefix is used which, in almost every language, is clearly related to the independent root meaning 'water'. The noun roots are listed in (17) and the corresponding prefixes, in (18).

- (17) PM *oka/i 'water'
 Ch. oka CB2
 K. oki MRH3
 H. ok-i JRS1
 M. ok-i FN
 Cr. owi:-wa FN
- (18) Choctaw CB2
ok-boš-li to wring out water (cf. boš-li 'to
 squeeze out')
ok-hina river (cf. hina 'road')
ok-tapa to stop, dam up (cf. tapa 'to sever')
ok-picj:li to grow or spring up, to rise to the
 brim like water (cf. picj:li-ci 'to
 cause to ooze out')
ok-hata a lake (cf. hata 'white')

<u>Alabama</u> JRS2	
<u>o-maci</u>	He threw it into the water. (cf. maci 'to throw')
<u>oy-i:li-t</u>	to drown (cf. i:li 'to die')
<u>ok-pala-toha</u>	It was on top of the water. (cf. palkici 'high')
<u>Koasati</u> MRH3	
<u>o:-hompani</u>	to play in the water (cf. hompani 'to play')
<u>Hitchiti</u> JRS1	
<u>ka-pi:lba-li-s</u>	I throw into water (or in a hollow). (cf. pi:lba-li-s 'I throw away.')
<u>ka-coko-li-n</u>	He was sitting in (water)... (cf. coko-li-n 'He sat there...')
<u>Mikasuki</u>	
<u>ka-folo:k-om</u>	He's in the water. (cf. folo:k-om 'He's around.') FN
<u>lal-ot ka-yoli-:c-om</u>	There are fish in there. (cf. yoli-:c-om 'They are around.') FN
<u>ka:-ayy-om</u>	He went about in the water. JDW
<u>Creek</u> MRH3	
<u>ak-nafk-ita</u>	to hit in the water (cf. nafk-ita 'to hit')
<u>akk-ich-ita</u>	to shoot at in the water (cf. ich-ita 'to shoot at')
<u>Seminole</u> MN	
<u>ak-yaka:p-it</u>	to walk in water (cf. yaka:p-it 'to walk')
<u>akk-a:l-it</u>	to be around in water, sg. (cf. a:l-it 'to be around, sg.')

While the productive Creek prefix for specifying a location underground or in the water is ak-, a number of Creek words contain a prefix ok- which refers to water or to some other liquid. Many of these stems, like the ones in (19), are etymologically transparent.

- (19) Creek LH
- | | |
|------------------|---------------------------------------|
| <u>ok-ni:ha</u> | gravy, sop (cf. ni:ha 'fat, grease') |
| <u>ok-óm-ita</u> | to be soft, limp (cf. óm-ita 'to be') |
| <u>ok-ol-a</u> | to sap (cf. ol-ita 'to come') |

The ok- prefix is identical to the Choctaw and Alabama/Koasati prefixes in (18). The ak- prefix, on the other hand, can be accounted for in

either of two ways.

Metathesis is not an uncommon phenomenon in Muskogean, particularly in the Creek/Seminole branch. Therefore, ak- may result from the metathesis of an earlier *ka, a form attested by the Hitchiti/Mikasuki prefix cited in (18). A more plausible solution to the problem is to propose a separate origin for Creek/Seminole ak-. Choctaw akka 'down, below' is a likely source. It combines with verbs to add locative reference, as the examples in (20) point out.

(20)	Choctaw	CB2	
	<u>akka</u> -bo ^h li		to lay down (cf. bo ^h li 'to lay')
	<u>akka</u> -nowa		to walk, travel on foot (cf. nowa 'to walk')
	<u>akka</u> - l atab-li		to pour, spill, scatter (cf. l atab-li 'to pour, spill')
	<u>akka</u> -ona		to go down, to be abused (cf. ona 'to go')

Creek/Seminole ak- could well be the contracted form of *akka, originally meaning 'down'.

With the possible exception of Creek/Seminole ak-, the modern locative prefixes marking location in the water clearly result from the incorporation of the independent noun *oka 'water'. The Choctaw and Alabama/Koasati incorporated elements dropped the root final vowel, while the Hitchiti/Mikasuki forms lost the initial vowel.

Prefixed Verbs of Motion

Besides indicating static position, languages in both Eastern and Western Muskogean use a pre-verbal element to specify motion to a location prior to the action of the verb root. Such elements have been referred to as prefixed verbs (Swanton 1921-22), a term based on the fact that most of them correspond to existing independent verbs of motion.

The PM verb *isi 'take' is the source of the modern instrumental prefixes. The cognate independent roots are listed in (21) and the instrumental prefixes, in (22).

(21)	PM <u>*isi</u> 'take'		
	Ch. iši	take, grab	CB2
	A. isi	grab	JRS2
	H. is(i)-	take	JRS1
	Cr. is-ita	to take	FN

(22)	Choctaw	JNS	
	bašpo ya-n nipi išt baš-li-h		
	knife the meat with cut		
	He is cutting the meat with a knife		

Choctaw (cont.)

išt abi tok He killed it with it.

Alabama ist- /V is- /C JRS2
ist-asih-li I shoot with (it).
is-wasat-ka-toha They were gone with it.

Hitchiti JRS1

is-canap-li-li-s I shoot with (it).
is-on-coko-li-k He sat on something by means of (it)...

Mikasuki JDW

s-ayy-om He goes about by means of; he rides/drives

Creek FN

s-la:f-ka-n s-ili-ic-á,h,k-is
 with-cut with-kill
 They killed him with a knife.

lakko-payh-ka-n s-a-wana-y-á,h,k-is
 mule with-on-tie
 They tied it on a mule.

Seminole MN

is-wána:-ka s-la:f-ka s-wa:l-a
 with-tie with-cut with-cut
 Cut the ropes with a knife.

yilaha s-oh-léyc-as

Put the oranges on it (oranges are in a container).

The t found in the Choctaw and Alabama prefixes is a reflex of PM *t, which I have reconstructed elsewhere as a same-subject conjunctive suffix (Booker 1980). The retention of this suffix in the instrumental prefixes in Choctaw and Alabama confirms their earlier status as conjoined verbs. Notice the degree of fusion exhibited by the daughter languages. The proto-form *isi-t, the verb 'take' plus the same-subject conjunctive ending, is contracted to išt in Choctaw. The *t is retained only in the pre-vocalic allomorph in Alabama; it is deleted before a consonant. All trace of the conjunctive suffix is lost in Hitchiti/Mikasuki and Creek/Seminole.

The PM verb root *oθa 'arrive there'⁸ is the proto-form of the modern verbal prefixes indicating movement to a location away from the speaker prior to the action specified by the verb root. The Choctaw pre-verbal element ont in (23) is obviously a contraction of *ona-t, the verb 'to arrive there' and the same-subject conjunctive suffix.

- (23) Choctaw
 ohoyo ma-n ont pis-a:cj:-hø:
 woman that go-and see-future-Q
 Will she go and see that woman? JNS

 ont anta go and stay CB1

Alabama ost (24) is from ola 'arrive there' and the t suffix. Preceding a consonant, the affix loses the t, the same distribution noted in the instrumental.

- (24) Alabama JRS2
 ost-ita-balák-o-k He went there and lay down...
 os-hica-ho-ba Go and see!

The Hitchiti/Mikasuki cognates (25) have an underlying form similar to the independent verbs meaning 'arrive there'. In Hitchiti, l assimilates to a following s. The Mikasuki prefix with h is a dialectal variant.

- (25) Hitchiti JRS1
 ol-ila-ka-n He got there and he got back...
 ol-hic-o:-c Let's go and see.
 os-s-ila-la-li-s I will get there and come back with
 them...
 os-sap-hica-ka-n He went and he looked toward...

Mikasuki
 o:l-i:l-om He arrived there, then here. JDW
 oh-coko:-l-om He arrived there and sat down. JDW
 oh-tala-k-a:-m-li I'm going to go and lie down. FN

To specify motion to a location near the speaker prior to the action of the main verb, the Eastern languages use a prefix based on the verb meaning 'arrive here'. These forms are listed in (26). Again, there is a reflex of PM *t 'same-subject conjunctive suffix' in the pre-vocalic Alabama allomorph.

- (26) Alabama ilt / V il- / C JRS2
 ilt-ípa to come and eat
 il-yowa to come and call out

Hitchiti JRS1
 il-hacá-li-n ommi-ka When she comes there and stands there...
 il-híca-k He came and saw her...

Mikasuki JDW
 i:l-coko-l-om He arrived here and sat down.

These prefixes are clearly derived from Proto-Eastern-Muskogean *ila 'arrive here' and the same-subject conjunctive suffix. Modern reflexes

of *ila are still found as independent verbs in these languages: A. ila 'come' (Swanton 1922-23), H. il(a)- 'arrive here' (Swanton 1921-22), and M. i:l(a)- 'arrive here' (West 1974). Although there is no obvious Choctaw cognate used as a pre-verbal element, the verb pila 'send, throw' may be historically derived from the PM verb of motion *ila with the demonstrative prefix *pa. Jeffrey Heath (1980:4) reports that Choctaw pila 'throw' has a corresponding pre-verbal form pit which he glosses as 'toward an object', a translation compatible with the proposed etymology of a verb of motion plus a demonstrative.

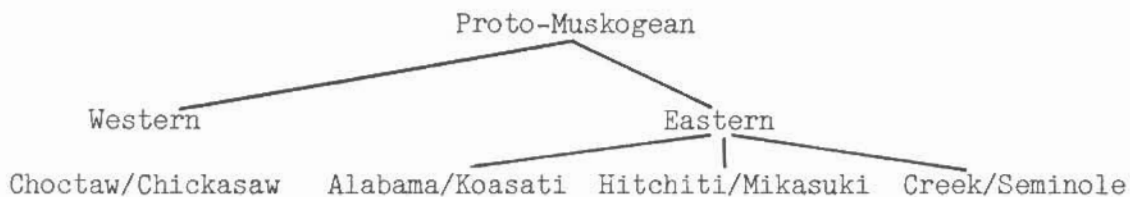
Conclusion

The foregoing discussion has attempted to show that the evolution of the Muskogean languages is marked by the incorporation of formerly independent roots as verbal prefixes, some of which serve as productive affixes in the modern languages, while others survive as frozen forms. This phenomenon dovetails well with the incorporation of auxiliaries previously noted by Haas (1977). She points out that the PM transitive and intransitive auxiliary verbs, *li and *ka respectively, were incorporated as inflectional suffixes in the daughter languages. The Muskogean languages are typical of SOV languages in that the auxiliary follows the main verb. It is quite appropriate, then, that auxiliaries should be incorporated as suffixes, while conjoined verbs, which precede the main verb, become prefixes. Incorporated body-parts and static locatives are derived from those nouns which would normally occupy the object position, immediately in front of the main verb.

The independent origin of certain Muskogean prefixes and the grammaticalization of post-verbal auxiliaries as suffixes illustrate a general tendency for independent roots to be incorporated as affixes. The subsequent restructuring of the incorporated elements as part of the verb phrase accounts for the appearance of many modern verbal affixes which were not included in the grammar of the parent language.

NOTES

1 An examination of the systematic sound correspondences among the modern Muskogean languages (Choctaw/Chickasaw, Alabama/Koasati, Hitchiti/Mikasuki, and Creek/Seminole) indicates that the initial break-up of the proto-language was into a Western and an Eastern division (Haas 1941a), as schematized below:



In order to reconstruct the proto-language, then, it is necessary to find cognates between these two primary branches. Correspondences among only the Eastern languages are not sufficient.

2 In Muskogean, noun incorporation was used to derive new noun stems as well.

3 The language abbreviations used are: Ch. = Choctaw, Ck. = Chickasaw, A. = Alabama, K. = Koasati, H. = Hitchiti, M. = Mikasuki, Cr. = Creek, and S. = Seminole. For the sake of brevity, sources for the display data have been abbreviated as follows: ASG (Gatschet 1888), CB1 (Byington 1870), CB2 (Byington 1915), JDW (West 1974), JNS (Jacob et al. 1977), JRS1 (Swanton 1921-22), JRS2 (Swanton 1922-23), LH (Loughridge and Hodge 1890), MN (Nathan 1977), MRH1 (Haas 1941a), MRH2 (Haas 1941b), MRH3 (Haas 1951). Several Alabama examples have been generously provided by Karen J. Lupardus and are abbreviated KJL. Data from my own field research are marked FN for 'field notes'.

4 PM *ɬ is Choctaw s and Eastern c.

5 Since some of the Muskogean languages have infixes within suffixes, it is useful to separate these affixes with different notations. Therefore, the use of commas is adopted here to set off infixes; the conventional hyphens are reserved for isolating prefixes and suffixes.

6 Choctaw š and Mikasuki s are the expected reflexes of PM *s.

7 Reflexes of PM *k^w are Choctaw/Chickasaw b, Alabama/Koasati and Hitchiti/Mikasuki b, and Creek/Seminole k.

8 PM *θ is realized as n in Choctaw and ɬ in the Eastern languages.

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