

PROTO-SIOUAN PHONOLOGY AND GRAMMAR

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The intellectual work on the *Comparative Siouan Dictionary* is relatively complete,¹ we and now have a picture of Proto-Siouan phonology and grammar. The following is our Proto-Siouan phoneme inventory with a number of explanatory comments:

	labial	dental	palatal	velar	glottal
STOPS					
Preaspirates:	hp	ht		hk	
Postaspirates:	ph	th		kh	
Glottals:	pʔ	tʔ		kʔ	ʔ
Plain:	p	t		k	

FRICATIVES

voiceless:		s	š	x	h
glottal:		sʔ	šʔ	xʔ	

RESONANTS

sonorant:	w	r	y		
obstruent:	W	R			

VOWELS

oral vowels:		i		u	
		e		o	
			a		

nasal vowels:		ĩ		ũ	
			ą		

ACCENT: /ˈ/ (high vs, non-high) & (possibly /˘/ falling)

VOWEL LENGTH: /·/ (+long)

PREASPIRATED VOICELESS STOPS. We treat these as units because they incorporate a laryngeal feature that has attached itself to the stop, and because speakers today treat the reflexes of the series as single units for purposes of syllabification and segmentability. However, in pre-Proto-Siouan it is possible that there was no preaspirated series. The preaspirates pretty clearly arose as regular allophonic variants of plain voiceless stops preceding an accented vowel. This was pointed out by Dick Carter for Ofo in 1984. Even so, we have a number of lexical sets where it appears to be necessary to reconstruct plain voiceless stops in this environment also. Therefore, by the Proto-Siouan period the distinction between plain and preaspirated stops had apparently been phonemicized as shown by the following cognate sets:²

	FIRE	FOUR	GRUE	GRANDMA	MARK
PSi	ahpé·te	tó·pa	ihtó·	ihkú·	ká·xE
CR		šoopá	šuu-		-kaaxi
HI		toopá	tóʔo-	ikúuš	-kaaxE
MA	-pte (?)	top	toho-		-kax
DA	phéta	tópa	thó	khú	káYA
WI	péeč	jóop	čóo	kunĭ-	gaax
CH	phé·je	towe	thó	ikhúñĭ	gáxe
OP	ppé·de	dóba	ttóho	ikkô	gá·ye
KS	ppéje	tóba	ttóho	ikkô	gá·ye
OS	hpéce	tópa	htóho	ihkô	ká·ye
QU	ppétte	tópa	ttóho	ikkô	káye
BI	peʔti	topa	tóhi	kykú	
OF	aphéti	tópa	ithóhi	ikóni	
TU	pé·ti	to·pa	oto·	hikú·	

The reflexes of the preaspirates are post-aspirated [*ph*, *th*, *kh*] today in Ofo, Chiwere, Winnebago and Dakotan but preaspirated or secondarily geminated in Dhegiha. Ofo and Tutelo (and probably Biloxi) on the one hand, and Chiwere, Winnebago and Dakotan on the other however have independently motivated rules that move the aspiration from the left to the right of a stop.

POSTASPIRATED STOPS: It may not be necessary to reconstruct postaspirated stops for PSi., at least not for native morphemes. There are a number of lexical sets in which they are found, and their reflexes unquestionably contrast in some subgroups with the preaspirates (thus the necessity for reconstructing both series). But the postaspirates generally originate from two distinct sources. (1) they arise morphophonemically when prefixes that have undergone vowel syncope are placed before roots that begin with /h/. So **w+h* > *ph*; **r+h* > *th*; **k+h* > *kh*. The verb 'say' is a good example, with the **w+h* > *ph* still productive in the first person singular:

	3sg form	1sg actor
PSi	*e- <u>he</u> ·	*e w hé· (*w-h underlying)
PSi	*e- <u>he</u> ·	*e p hé· (*ph surface)
MA	é- <u>he</u> (-re)	é·p eʔš
DA	e- <u>yá</u>	e p há
PN	e	e p he
KS	e e	e p hé
OS	e e	e p še
QU	(i ye)	i p hé

The postaspirates also occur underlyingly in a small set of words that often also show abnormal accentuation patterns or other strange features strongly reminiscent of what one would expect from *borrowings*. Their status as borrowings is hard to prove however, since the loanwords would be perhaps 3000 years old and sources for them cannot be located, at least not yet. In any event there are not very many postaspirated sets, but we have included them in our inventory anyway. They are discussed in some detail in Rankin (1994:208). A few examples:

	grizzly	cow elk	mosquito
?PSi	*wəthó	*úphə	*ya·whəke
CR			a p á aka
HI			a p á aka
MA	mə t ó?	ú p a	há p arake
DA	mə thó	ú phə	čha phú ka
CH	mə thó	hú m ə	ra·w ə ge
WI	mə č ó	hú·w ə	ra·w ə k
OP	mə thó	ó phə	ná hə ge
KS	mi čhó	ó phə	yá phə ige
OS	mi chó	ó phə	đá phə ke
QU	mə thó	ó phə	da phə ke
BI			ya m ə kí
OF	ú thi		čá m ə ki
TU	hamú·thih	ma·pha-	

GLOTTALIZED STOPS. We presently reconstruct glottalized stops and fricatives as distinct series, but we have some qualms. Historically, glottalized consonants can only occur in accented syllables. Their reflexes are phonetically ejectives in the Mississippi Valley Siouan languages: Dakotan, Chiwere, Winnebago and Dhegiha. In the North however they have interestingly different reflexes. In Mandan and Hidatsa the sequences that in Mississippi Valley are CʔV, are instead CVʔ.

This means that in one or the other of these groups the glottal portion, [ʔ], of the consonants has *shifted*. There is evidence that Crow had glottalization corresponding with that found in Hidatsa at an earlier time but lost it. The southeastern group of Siouan languages (Ohio Valley Siouan) was transcribed for the most part by amateur linguists who did not usually write glottal stops, so they do not contribute much to this issue. In addition, the glottalized fricatives do not seem to exist independently outside of Mississippi Valley Siouan.

Rankin (1987) shows that in several Siouan languages (primarily Dhegiha) long vowels typically have falling pitch. And this falling pitch automatically but variably generates a syllable-final glottal stop. If PSi had had phonemically independent falling pitch accent in addition to the high pitch that we now reconstruct, the glottalized stops and fricatives could have arisen as an allophonic feature of falling pitch. If this is true, then the modern Hidatsa and Mandan pattern with the glottal stop appearing as a syllable coda would be the older pattern, and the migration of the glottal from the coda and its attachment to the stop or fricative onset, as in Mississippi Valley Siouan, would be innovative. Crow vocalizes the glottal stop as vowel length.

To illustrate, consider the verb 'give':

stage I	*kū	PSi or pre-PSi	
stage II	kuʔ	Hidatsa/Mandan/pre-Crow	
stage III	kú·	kʔu	*ʔku
	Mod.	Missp.	Ohio
	Crow	Valley	Valley

In stage I the vowel of *give* has phonemic falling pitch. In stage II that falling pitch generates a syllable-final glottal stop via well-understood phonetic processes. In stage III Crow vocalizes the glottal stop as vowel length, while Mississippi Valley Siouan shifts the glottal, attaching it following the syllable onset. Ohio Valley Siouan seems to attach it preceding the syllable onset, as the glottal stop apparently surfaces as a vocoid before the syllable onset in two of those languages. This results in the following cognate set (the reflex of the glottal element is highlighted in each language):

	CVʔ		CʔV		ʔCV
CR	ku•	LA	kʔu	BI	k u
HI	kuʔ	CH	-kʔu	OF	əkhu
		WI	-kʔu	TU	ᵑg u
MA	kuʔ	OP	ʔi		
		KS	kʔü		
		OS	kʔü		
		QU	kʔi		

Obviously at the moment reconstructing /falling pitch/ would only be a notational variant on writing glottalization. So we have stuck with what is really there and continue to reconstruct glottalization as a distinctive feature for Proto-Siouan syllables.

But typology and areal linguistics may ultimately support the falling pitch argument. Languages with pitch accent systems tend to have a phonemic falling pitch in addition to simple high pitch. Yet we reconstruct PSi with only high pitch at the moment (with the proviso that sequences of two vowels can have dynamic pitch in Hidatsa, Crow and probably Mandan). Areally, in North America east of the Rockies it is especially true that systems with high pitch also have falling pitch. This includes the Iroquoian, Muskogean and Tanoan families just off the top of my head. Reconstructing both high pitch and falling pitch (the latter to account for glottalization) would bring Proto-Siouan into line with many other language families typologically and areally, and would also bring it more into line with its sister language, Catawba, which lacks any trace of glottalized consonants.

FRICATIVES: In Crow fricatives tend strongly to have voiced allophones intervocalically. In the Mississippi Valley subgroup this distribution has been complicated, and we are faced with the clear necessity of having voiced fricative phonemes *z ž ɣ*. The steps by which voiced and voiceless fricatives came to contrast have been obscured by analogical change, dialect borrowing and the like. PSi clearly had voiceless fricatives but probably not voiced ones.³ (The glottalized fricatives are only found in Mississippi Valley Siouan and are covered above under the discussion of glottalization.)

RESONANTS: W and R in the phoneme inventory are not symbols for voiceless resonants. They instead represent sound correspondence sets in which several languages have obstruentized, as opposed to the expected resonant, reflexes. So while *w usually has the reflex [w] or [m] in most of the daughter languages and *r usually surfaces as [r, l, n, ʃ, y] etc., *W has reflexes like [w, b, mb, p] in some languages while *R has reflexes like [r, l, d, nd, t].

There is compelling evidence that *W usually represents a secondary development from geminated *w+w (across a morpheme boundary) or, in a few instances, a laryngeal plus w. Most examples come from roots with initial w that had a collapsed animate or inanimate prefix, *wi- or wa-.

The source(s) of *R is/are not so clear, although it is probably secondary and probably represents an old cluster too--perhaps of *r with a laryngeal. There are a number of instances in the comparative database in which *r has reflexes like R when it enters into a consonant cluster such as wr, sr, šr and a few instances of R show an adjacent glottal stop in Mandan.

NASALS: Note that no nasal consonants are listed. It is clearly necessary to reconstruct nasal vowels in PSi, but it appears all nasal consonants can be derived from sequences of an oral resonant followed by a nasal vowel. So most frequently *wŷ > mŷ and *rŷ > nŷ.⁴ Nasal resonants have been phonologized in several languages through loss of vowel nasality and through introduction of new w's and r's preceding nasal vowels via prefixation processes. We have had some qualms about this analysis, but the distribution of oral/nasal resonants vis-a-vis nasal vowels is still preserved today in languages like Mandan, and full complementarity is still present in Crow and Hidatsa also. This leaves Proto-Siouan typologically strange, but universals were made to be broken.

VOWELS: Most Siouan languages have both long and short vowels, although most field workers steadfastly ignored length for over a century. It seems probable that, like preaspiration, vowel length and accent were *semi* predictable in PSi. It appears that the second syllable vowel received the accent. Note that there now seem to be a number of Proto-Siouan suprasegmental and laryngeal features associated with accent.

- a. The second syllable was *accented*.
- b. The accented vowel was generally *lengthened*. There are very few confirmed second-syllable short vowels in the database.
- c. The syllable-initial stop received *preaspiration*, i.e., Carter's Law.
- d. If we are right, an accented syllable with falling

pitch got *glottalization* (losing falling pitch in the process).

None of these is 100% predictable, i.e., we have some exceptions in our reconstructed database to all of these rules. But, they are very strong and clear tendencies that suggest that, at one time, all these laryngeal features were related via accent.

If we remove the features of PSi phonology that now appear to have been conditioned, we arrive at an altogether different phonological inventory for pre-proto-Siouan. Let us finish here by suggesting that this possible pre-proto-Siouan inventory may have been considerably simpler. Perhaps it was something like:

Stops: p t k ʔ

Fricatives: s š x h

Resonants: w r y

Same 5 vowels: i, e, a, o, u (plus/minus length).

Same 3 nasal vowels: ɪ̃, ą̃, ʉ̃ (maybe long or short).

Probably pitch accent (N.B. Catawba accent doesn't seem to be the same general iambic sort as Siouan).

This is essentially the PSi inventory minus (a) the secondary or rule-generated formations like preaspiration, glottalization (?), obstruentized resonants and (b) the probable loanwords which can have initial syllable long vowels and accent and postaspirated stops. This inventory turns out to be quite close to that of the distantly related Catawba.

Turning briefly to typology, grammar and syntax, Proto-Siouan was a mildly agglutinating language of moderate complexity showing minor kinds of incorporation that usually amount to little more than compounding. It was also active/stative in alignment, head-marking and syntactically SOV. Verbs were the primary inflected category and they were marked for *person*, *number*, *aspect*, *mode*, *instrument* and certain other categories. Many of the modern languages have *evidentials*, *quotatives* and numerous *gender-sensitive particles*, but many of these are not cognate from subgroup to subgroup and their status in PSi is uncertain.

The rather long and involved verb prefix template that can be constructed synchronically for most Siouan languages disintegrates diachronically (Rankin, to appear). The Dakotan prefix order is rather typical of what is found in the rest of Siouan and is in some respects actually more elaborate. It is used here only slightly simplified for illustrative purposes. There is not space to discuss every aspect of it, especially an extensive inventory of enclitics that appear following the verb root. These signal the tense, aspect and modal categories. The template:

ABSO-	3PL			1ST & 2ND	DAT				
LUTIVE	PATI-	DUAL	LOCA-	PERSON AGNT	VERT	INSTRU-	<u>VERB</u>	ASPECT &	
	ENT	INCL	TIVES	& PATIENT	REFLX	MENTALS	<u>ROOT</u>	MODE ENCLITICS	
wa-	wichá	uk-		PRONOMINALS	RECIP				

Let us examine several of these categories in more detail and from a diachronic perspective.

The *third plural animate patient* prefix, *wichá-*, is innovated in Dakotan alone from *wicháša* or *wichášta* 'man' and was not Proto-Siouan (Rankin 1996). This eliminates one prefix position.

The *dual inclusive agent/patient* prefix, *uk-*, (in some languages **wək-*) represents a late grammaticalization or reanalysis in two Siouan subgroups of **wə́.ke* (possibly earlier **wa-ʔúke*) the Proto-Siouan noun meaning 'man, person' (Rankin 1996). If *uk-* is a true innovation and not a reanalysis of some earlier pronominal, this would eliminate a second prefix position.

There is fairly good evidence that the three so-called *locative* prefixes, *a-* 'on, at', *o-* 'in', *i-* 'toward', as well as the prefix of *instrument*, *í-*, were in fact accented long vowels in Proto-Siouan or pre-Proto-Siouan and so probably distinct roots or proclitics, not prefixes, but there is little else that can be said about them at the moment.

The first and second person agent and patient prefixes have their own internal ordering conventions (as is often the case with pronominals), but in the proto-language the 1st and 2nd person patient markers preceded agent marking, were syntactically distinct, and probably proclitics, as they did not participate in contemporary accentual phenomena, including concomitant vowel lengthening (when accented). Nor did these patient markers ever undergo the initial syllable vowel syncope when not accented that affected real Proto-Siouan prefixes. The agent prefixes did undergo vowel syncope.⁵ This appears to eliminate the patient prefix position in the Proto-Siouan or pre-Proto-Siouan verb complex.

Also proclitics or, more likely, distinct verbs in Proto-Siouan were the well known instrumental prefixes (*by pulling, by pushing, by foot, by striking, etc.*), that seem virtually to characterize the Siouan verb.

Like the patient person markers, the instrumentals also fail to undergo the expected phonological processes associated with prefixes (including contextual aspiration, syncope or lengthening). In fact, the instrumentals behave as if they were distinct verb roots. And this analysis of the instrumental prefixes as verbs in serial construction is historically confirmed in Catawban, where the Siouan instrumental prefixes are found as distinct, conjugated verb roots, only sometimes used instrumentally (Siebert 1945; v. also Shea 1984 and Voorhis 1984, 1992).

Siouan	Catawba
* <i>ru</i> 'by hand'	<i>du</i> 'by hand' and 'to take' (Siebert)
* <i>ka</i> 'by striking'	<i>kaʔ</i> 'to strike, hit' (Siebert)
* <i>rā</i> 'by foot'	<i>da</i> 'by foot'; also <i>daʔ</i> 'go' (Siebert)
* <i>Wo</i> 'by blowing/shoot'	<i>pu</i> 'by blowing' (Siebert)
* <i>ra</i> 'by mouth'	<i>nā</i> sg., <i>wira</i> pl. 'to eat' (Voorhis) ⁶
* <i>aRá</i> 'by heat'	<i>wirā</i> 'to burn' or <i>de</i> 'blaze' (Shea)

Even in present-day Siouan these instrumentals, when they are present, remain the conjugated elements: the agent prefixes precede and fuse with the instrumental rather than the verb root in these cases.⁷ So we must eliminate yet another prefix position, that of the instrumentals.

Lastly, Koontz (1996) suggests that even the reflexive and reciprocal prefixal morphology of most Siouan languages was deverbal (from a comitative verb 'to be with'). If this is confirmed we must eliminate one last prefix position.

Tense, aspect and mode enclitics generally are not cognate across Siouan and much innovation has occurred in these categories. There is not space to deal with them here.

As we see, moving backward in time, the Proto-Siouan verb morphology template has so shrunk that apparently the only set of present day verb prefixes that is reconstructible as such (i.e., as real prefixes) is the pronominal set: first and second person agent and dative-possessive. So while the reconstruction of Proto-Siouan has strengthened the already demonstrated relationship of Siouan with Catawban (probably at a time depth of 4000+ yrs. B.P.), it has also revealed an actually decreased lexical cohesion in verbs.

PSi nouns were inflected primarily for possession. There are first, second and third person prefixes for inalienably possessed nouns, but not for the dual-inclusive. Alienable possessed nouns attach the possessor prefixes to a special possessive base, *-hta. Kin terms and external body parts were inalienable. Some internal body parts and basically all other nouns were alienables. A single definite article with the shape *kí may be reconstructible. Number was unmarked on nouns and ambiguously marked on verbs, where it could pluralize any or all of the nominal arguments or the action or intensity of the verb itself.

The set of positional verbs, *rā·k-* 'sit', *hā·k-* 'stand' and *wū·k-* 'lie', served to classify nouns by shape/position (Rankin 1977), while older prefixes (shared with Catawba and possibly Yuchi) classified nouns as human, animate or inanimate (Rankin forthcoming). The prefix *ko- marked humans (including indefinitely possessed kinterms), wi- marked the class of animals, some foodstuffs and weather-related phenomena, while wa- seems to have marked all other categories.

Virtually all of the Siouan languages have basically OV syntax. With this comes the expected dependent/head pairings of constituents lower than sentence level that typologists expect: subordinate clause/main clause, adverb/verb, verb/auxiliary, postpositions, etc. Adjectives follow their head noun. Since these patterns are so general in Siouan it would be very hard to imagine that PSi was not also consistently SOV.

NOTES

(1) This highly condensed presentation of Proto-Siouan phonology and grammar is a product of the decade or more of intensive research that underlies the forthcoming *Comparative Siouan Dictionary* of which the authors are senior editors. The dictionary project was sponsored by NEH (RT-21062-89; RT-21238-91) and the University of Colorado's *Center for the Study of the Native Languages of the Plains and Southwest*. David S. Rood was the principal investigator.

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(2) Standard abbreviations for the Siouan languages are: PSi Proto-Siouan, CR Crow, HI Hidatsa, MA Mandan, DA Dakotan, CH Chiwere, WI Winnebago, OP Omaha-Ponca, OM Omaha, PN Ponca, KS Kansa, OS Osage, QU Quapaw, BI Biloxi, OF Ofo, TU Tutelo, CA Catawba.

(3) In Mandan the reflexes of *s and *š have become exactly reversed, a sound change that is basically impossible without an intermediate step of some kind. It is possible that *s > c (= [ts], as in Hidatsa) and that then *š > s and then *c > š.

(4) The chief exception is sequences of Proto-Siouan /wȳh-/ which occurs in a few roots, notably 'flint, chert' and 'woman, female'. Here the oral resonant is preserved, e.g., in Dakota. H may be a conditioning factor; there is at least a correlation.

(5) In addition to the nominal prefixes, wa- and wi- described above, the agent prefixes *wa- '1st person' and *ya- '2nd person' also underwent systematic truncation in most if not all of Siouan. The same is true of *ki- 'dative/possessive'. The resultant consonantal allomorphs of the pronominal prefixes include 1st sg. b-, m-, p- and 2nd sg. š-, ž- and are described in Rankin 1988. Siouanists still have much work to do if we are to understand all of the effects of initial syllable syncope and subsequent analogical restoration of "regular" pronominal allomorphs (the latter especially in Dakotan).

(6) The first four sets were noted by Siebert (1945); the last two are possible additions based on two recent essays into Catawba lexicography: Shea (1984) and Voorhis (1992).

(7) The phonological fusion of the pronominals with the instrumentals is important here, as it shows that the relationship of the two elements is old. I have ignored for the purposes of this paper the innovated set of so-called outer instrumentals. These are most often ordered just before the dual inclusive marker in the template.

REFERENCES

- Carter, Richard T., A. Wesley Jones, Robert L. Rankin, et al., eds. To appear. *Comparative Dictionary of the Siouan Languages*.
- Koontz, John. 1996. Mississippi Valley [Siouan] Stop Stem Reflexives. Paper presented at the SSILA Annual Meeting, San Diego, CA.
- Rankin, Robert L. 1977. From Verb to Auxiliary to Noun Classifier and Definite Article: Grammaticalization of the Siouan Verbs 'sit', 'stand', 'lie'. *Proceedings of the Mid-America Regional Linguistics Conference*, St. Paul: Univ. of Minnesota Linguistics Dept.
- Rankin, Robert L. 1994. On the sources and scope of Siouan aspiration, in Gómez de García, Jule and David S. Rood. *Proceedings of the 1993 Mid-America Linguistics Conference & Conference on Siouan/Caddoan Languages*. Boulder: University of Colorado.
- Rankin, Robert L. 1996. Nouns to Pronouns: The Siouan Dual Inclusive. Paper presented at the SSILA Annual Meeting, San Diego, CA.
- Rankin, Robert L. To appear. Deeper Genetic Relationships in North America: Some Tempered Pessimism. *Proceedings: Berkeley Linguistics Society*, 1996 meeting.
- Shea, Kathy. 1984. *A Catawba Lexicon*. University of Kansas Master's thesis. Ann Arbor: University Microfilms. 358 pp.
- Siebert, Frank T. 1945. Linguistic Classification of Catawba. *IJAL* 11:100-104;211-218.
- Voorhis, Paul. 1984. Catawba Morphology in the Texts of Frank Speck and of Matthews and Red Thunder Cloud. *Kansas Working Papers in Linguistics* 9:1-29.
- Voorhis, Paul. 1992. *Catawba Vocabulary from the Texts Recorded by Frank Speck*. MS, 126 pp.