

# Advances in the study of Siouan languages and linguistics

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Edited by

Catherine Rudin & Bryan J. Gordon

Studies in Diversity Linguistics ??



## Studies in Diversity Linguistics

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To Bob, whose knowledge was matched only by his  
generosity.



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# Preface

This volume presents a group of papers representing a range of current work on Siouan<sup>1</sup> languages, in memory of our colleague Robert L. Rankin, a towering figure in Siouan linguistics throughout his long career, who passed away in February of 2014.

Beyond honoring a beloved colleague, our aim in this volume is to bring a variety of issues in Siouan linguistics to the attention of the linguistic community. The Siouan language family is a large and important one, with branches geographically distributed over a broad swath of the North American plains and parts of the southeastern United States. This puts it in contact historically with several other families of languages: Algonquian, Iroquoian, Caddoan, Uto-Aztec, and Muskogean. Siouan languages are, or were historically, spoken by the members of at least 25 ethnic/political groups. One Siouan language, Lakota, is among the handful of indigenous North American languages with younger speakers today. Siouan languages have occasionally risen to prominence in general linguistics, for instance in the study of reduplication (Shaw 1980); and Omaha and Crow (Apsaalooke) have lent their names to two of the basic categories of kinship systems in anthropology. Nonetheless, the Siouan family has been underrepresented in the descriptive and typological literature, and most of the languages in the family are severely understudied. The majority of work on Siouan languages is unpublished, existing only in the form of conference papers or manuscripts.<sup>2</sup> This volume is a step toward making information on Siouan languages more broadly available and encouraging deeper investigation of the myriad issues they raise.

From the perspective of linguistic typology, Siouan languages have many notable features. Many of these features stand to challenge typological generalizations. Here we briefly sketch a few of the most characteristic features of the Siouan family.

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<sup>1</sup> “Siouan” is not to be confused with “Sioux”, a controversial term referring to Lakota and Dakota people, rarely to Nakota/Nakoda people too, but never correctly to people of other traditionally Siouan-language-speaking communities.

<sup>2</sup> Many of these unpublished works are collected in the electronic Siouan Archive, maintained by John Boyle at the University of California at Riverside.

All Siouan languages possess a rich variety of applicative affixes, confirming Polinsky's (2013) observation that applicatives are common in North America and adding another language family to her list of applicative-rich families in the area. Helmbrecht (2006) divides the applicatives into three templatic slots: locative applicatives, benefactive applicatives, and applicative markers; all of the Siouan languages sampled by Helmbrecht possess at least two applicative morphemes.

All Siouan languages are strongly head-final, and the consensus among syntacticians working with Siouan languages is that all but the supraclausal projections (and even some of these) are underlyingly head-final in Siouan languages, contra Kayne's (1994) Antisymmetry theory.

All Siouan languages have head-internal relative clauses. A series of strong claims regarding the typological implications of head-internal relative clauses (cf. Cole 1987; Murasugi 2000), including purported distinctions between "Japanese-type" and "Lakota-type" constructions (cf. Watanabe 2004; Williamson 1987; Bonneau 1992), propelled Lakota into the debates of theoretical syntax. It has been pointed out that head-internal relative clauses of the kind found in Lakota and other Siouan languages lack the island restrictions found in other languages. On the other hand, Murasugi (2000) argues that languages with head-internal relative clauses must also have head-external relative clauses, which is not true in Siouan languages.

All Siouan languages have verbal affixes which index subject possession of or relationship with the object. They vary with respect to contexts of obligatoriness of these affixes.

Many Siouan languages have grammaticalized systems of speaker-gender marking, with gender-specific morphology for speech-act markers, address terms, and kinship lexemes.<sup>3</sup> Such usage varies depending on situational factors, however, especially in the case of speech-act markers; see for instance Trechter (1995).

Many Siouan languages have a modal CCV morpheme shape. This does not necessarily imply a preference for CCV phonetic realizations, but may indicate such a preference in the distant past. Another unusual prosodic feature is the preference for second-syllable stress in most Siouan languages. Hoocąk may be the only attested language with default third-syllable stress in the world.

Most Siouan languages have ejective stops. The Dhegiha branch is notable for a four-way glottal-state distinction in its stop series (voiced/lenis, tense/pre-aspirated, ejective and aspirated). Outside of the Dhegiha branch are many Siouan

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<sup>3</sup> In the case of kinship terms, lexical choice is driven by the gender of the "ego" deictic center, which coincides with speaker gender when there is 1st-person inflection.

languages which have the unusual feature of a phonemic voicing distinction in fricatives but not in stops.

Verbs play some typologically unusual, prominent roles in Siouan languages. Diachronically, many grammatical items which rarely grammaticalize from verbs in other languages tend to derive from verbs in Siouan languages. For instance, Rankin (1977) documents the derivation of classifiers and articles from verbs. In some Siouan languages, the source verbs and target grammatical items continue to exist in parallel with substantial semantic overlap. The Omaha positional article *tʰoⁿ* ‘obviative animate specific standing’, for instance, is homophonous with the root of *átʰoⁿ* ‘stand on’.

This diachronic tendency is mirrored by synchronic flexibility. Siouan languages tend to verb freely — to use nearly any open-class stem as a verb. Thus Lakota *wimačhaša* ‘I am a man’ is derived from the nominal stem *wičhaša* ‘man/person’ with the 1st-person stative pronominal *ma-*.

Dhegiha articles (which have many features in common with positional classifiers in e.g. Mayan languages; see Gordon, 2009) are homophonous with postverbal and postclausal functional items like subordinating conjunctions and aspect and evidentiality markers. They have considerable semantic overlap with them too, a fact which comprises another area of blurriness between nominal and verbal syntax: In Ponca, *niáshiⁿga-ama* may mean ‘the [proximate animate plural specific] people’, but also may mean either ‘they are people’ or ‘I am told s/he was a person’. Plurality is a part of the semantics of *-ama* in both the nominal and the first clausal interpretation. To make matters more interesting, these kinds of ambiguity are not always easily resolved by context alone, and may suggest a “simultaneity” (cf. Woolard 1998) at work as part of speakers’ competence.

This flexibility, that is, the ability of one and the same root to function in both nominal and verbal contexts, has led to some discussion on the status and quality of the noun/verb distinction in Siouan languages (see e.g. Helmbrecht, 2002, and Ingham, 2001).

Nominal arguments in general are not required in Siouan languages, thematic relations being signaled by pronominal or agreement markers within the verb — including zero markers. This makes Siouan languages relevant to debates about the existence of “pronominal argument” languages (Jelinek 1984) and to the related issues of whether there are languages with truly nonconfigurational or flat structure. The preponderance of evidence in Siouan is for the existence of hierarchical structure, specifically including a VP (for instance, West, 1998; Johnson, this volume; Johnson et al, this volume; and Rosen, this volume).

Although Siouan languages have many remarkable features in common, they

vary on many others. Some Siouan languages have noun incorporation, while others do not. Some Siouan languages have stress-accent systems, and others have pitch-accent systems. Dhegiha languages are notable in having as many as eleven definite/specific articles indexing features such as animacy, proximity/obviation (or case), posture/position, number, visibility, motion and dispersion; meanwhile other Siouan languages have no fully grammaticalized articles at all.

Some Siouan languages reflect longtime cultural presence on the Plains, while others are located as far east as the Atlantic Coast, and many more show cultural aspects of both regions. Dhegiha-speaking peoples (Quapaw, Osage, Kaw, Omaha and Ponca, and likely Michigamea as well (Kasak (this volume), Koontz 1995) likely lived at the metropolis at Cahokia, perhaps at a time before any of the descendant groups had separated, and have many Eastern Woodlands-style features of traditional governance and religion, in sharp contrast with the more Plains-typical cultural features of close Lakota and Dakota neighbors and relatives.

One seemingly minor but in fact quite significant issue in Siouan linguistics is the matter of language names and their spelling. Often this involves a self-designation in competition with a name imposed by outsiders. Even when an autonym gains currency among linguists there is sometimes no agreed spelling; so for instance the Otoe self-designation is written Jiwere or Chiwere. For the most part in this volume the choice of language designations has been left to the individual chapter authors. However, after a volume reviewer pointed out that the language of the Ho-Chunk or Winnebago people was spelled no less than ten different ways in various chapters, we encouraged authors to choose one of the two spellings used on the tribe's web site: Ho-Chunk or Hoocąk. Most have voluntarily complied. In a related move, we decided to retranscribe all Lakota data throughout the volume using the now-standard orthography of the *New Lakota Dictionary* (Ullrich et al, 2008).

The volume is divided into four broad areas (Historical, Applied, Formal/Analytical, and Comparative/Cross-Siouan) described in more detail in separate introductions to each part of the volume. Part I consists of five chapters on historical themes: Ryan Kasak evaluates the evidence for a relationship between Yuchi and Siouan; David Kaufman discusses the participation of some Siouan languages in a Southeastern sprachbund; Rory Larson summarizes current knowledge of Siouan sound changes; and Kathleen Danker and Anthony Grant investigate early attempts to write Hoocąk, Kanza, and Osage. Part II opens with Linda Cumberland's interview with Robert Rankin about his work with Kaw language programs. Jimm Goodtracks, Saul Schwartz, and Bryan Gordon present three

different perspectives on Baxoje-Jiwere language retention. Justin McBride applies formal syntax to the solution of a pedagogical problem in teaching Kaw. This applied-linguistics section ends with Jill Greer's sketch grammar of Baxoje-Jiwere. Part III contains formal analyses of individual Siouan languages. David Rood proposes an analysis of /b/ and /g/ in Lakota using the tools of autosegmental phonology and feature geometry. John Boyle elucidates the structure of relative clauses in Hidatsa. Meredith Johnson, Bryan Rosen, and Mateja Schuck, in a series of three interrelated chapters, discuss syntactic constructions in Hoocąk including resultatives and VP ellipsis, which they argue show the language has VP and an adjective category. Part IV consists of three chapters which take a broader view of grammar, considering data from across the Siouan family. Catherine Rudin compares coordination constructions across Siouan; Bryan Gordon does the same with information structure and intonation, and Johannes Helmbrecht with nominal possession constructions.

All four of the areas represented by this volume are ones to which Bob Rankin contributed. His scholarly publications centered primarily around Siouan historical phonology, but included works ranging from dictionaries to toponym studies, from philological investigation of early Siouanists to description of grammaticalization pathways. He was deeply involved in language retention efforts with the Kaw Language Project. Other interests included archeology, linguistic typology, Iroquoian and Muskogean languages, and the history of linguistics.

Bob was a major figure in Siouan linguistics, a mentor to nearly all living Siouanists, and a mainstay of the annual Siouan and Caddoan Linguistics Conference meetings for decades. Trained in Romance and Indo-European linguistics, with a specialty in Romanian (Ph.D. University of Chicago 1972), he shifted gears soon after leaving graduate school, and became an expert in Siouan languages, especially the Dhegiha branch, with special focus on Kaw. From the mid 1970s through the end of his life, he devoted himself to Siouan studies, both practical and scholarly. His long association with the Kaw Tribe led to a grammar and dictionary of that language (see Cumberland, this volume), and he also produced a grammar of Quapaw, and briefly conducted field work on Omaha-Ponca and Osage. At the University of Kansas he directed dissertations on Lakota (Trechter, 1995) and Tutelo (Oliverio, 1996) as well as several M.A. theses on Siouan languages, and taught a wide variety of courses including field methods and structure of Lakota and Kansa as well as more theoretical courses in phonology, syntax, and historical linguistics. Perhaps Bob's greatest gift to the field was his encouragement of others. At conferences and on the Siouan List email forum, he was unfailingly patient and encouraging, answering all questions seriously,

explaining linguistic terms to non-linguist participants and basic facts of Siouan languages to general linguists with equal enthusiasm and lack of condescension.

Following his untimely passing, a special session was held at the 2014 Siouan and Caddoan Linguistics Conference to organize several projects in Bob's honor: The first of these was publication of the Comparative Siouan Dictionary, an immense project comparing cognates across all the Siouan languages, undertaken by Rankin and a group of colleagues in the 1980s. It had been circulated in various manuscript forms but never published. Thanks to David Rood (another founding member of the CSD project), with help from Iren Hartmann, the CSD is now available online (Rankin et al, 2015). The second project was a volume of Bob's conference papers and other previously unpublished or less accessible work, to be collected and edited by a group headed by John P. Boyle and David Rood; that volume, tentatively titled *Siouan Studies: Selected Papers by Robert L. Rankin*, is currently in progress. The third project was a volume of Siouan linguistic work in Bob's memory, which has taken the shape of the present volume.

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## Chapter 1

# Regular sound shifts in the history of Siouan

Rory Larson

The team of contributors to the Comparative Siouan Dictionary (CSD) reconstructed a phonemic set for Proto-Siouan, together with the necessary reflexes to produce the actual speech sounds found in the various daughter languages. Until recently, this system was common knowledge within the Siouanist community, since the participants in the CSD project were active as the leaders of that community, and were available to explain the predicted sound shifts. With the passing, retirement, or disappearance of most of the CSD team, however, it seems that it might be useful to document the reconstructed system and its most important regular reflexes, as an aid to comparative studies. This paper will rely primarily on the CSD, edited until his passing by Dr. Robert Rankin, to summarize the regular sound shifts known to have occurred in Siouan. It will prioritize sound shifts in which separate phonemes or clusters have collapsed together to become indistinguishable in the daughter languages, since this is where interesting confusion is most likely to occur. KEYWORDS: [Siouan, proto-Siouan, sound shifts, regular reflexes, historical phonology]

## 1 Introduction

In 1984, a group of linguists studying Siouan languages began a project under NEH and NSF sponsorship to assemble a comparative dictionary of the Siouan language family. The principal investigator was David S. Rood. The team included Richard T. Carter, A. Wesley Jones and Robert L. Rankin as senior editors, along with Rood and John E. Koontz. Together with Willem de Reuse, Randolph Graczyk, Patricia A. Shaw and Paul Voorhis, the dictionary team began their project at the Comparative Siouan Workshop held at the University of Colorado



in 1984. A number of other scholars, including Louanna Furbee, Jimm Goodtracks, Jill Hopkins Greer, Kenneth Miner, Carolyn Quintero, Kathleen Shea and Mark Swetland also contributed information.

This undertaking was huge.<sup>1</sup> The present writer regrettably turned down an offer by Richard Carter in about 1997 of an advance copy of the dictionary manuscript, on the assurance that it would be published within a year. In fact, it was never completed to the editors' satisfaction or published in book form. Carter himself retired from active work in the Siouan field after around 2002, and Robert Rankin became the principal steward of the project. In 2006, Rankin distributed a .pdf file of the manuscript as it stood so far to interested members of the Siouanist community, on condition that any further requests be submitted to himself or David Rood. The file runs to nearly a thousand pages, and is full of working notes and comments about the various words and their relationships, mostly by Rankin.

Rankin, Carter, and their colleagues developed a sophisticated understanding of the phonological and phylogenetic relationships among the various groups of Siouan. Until recently, they formed a body of respected linguistic "elders" who freely shared this lore on request with more junior scholars. With the untimely passing of Robert Rankin in February of 2014, however, and the retirement, disappearance, or focus shift of most of the other leading members of the team, the framework they developed seems in danger of being forgotten by the Siouanist community. This paper is intended to address that concern. Drawing on working notes found throughout the CSD, as well as years of discussions on the Siouan List, it will attempt to summarize the model of Siouan phonology and its standard sound shifts built by Rankin and the CSD team, with occasional comments and additions from the writer. All references to the CSD are to the 2006 version. (In May 2015, after this paper was completed, the most recent version was made available online at [csd.clld.org](http://csd.clld.org) (Rankin et al, 2015) where most of the original notes and comments can now be found.)

## 2 The Siouan family tree

The CSD recognizes four major branches of Siouan. In the far northwest is Missouri Valley, or Crow-Hidatsa, consisting of the Crow and Hidatsa languages. Next is Mandan, an isolate within Siouan. Third is Mississippi Valley Siouan, or

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<sup>1</sup> For an enlightening and wryly humorous history of the project, see "The Comparative Siouan Dictionary Project" by David S. Rood and John E. Koontz, 2002, written by two of its principal participants.

“MVS”, which itself has three branches. Fourth is Southeastern, or Ohio Valley Siouan, at the southeastern end of the Siouan span.

MVS branches into Dakotan, which includes the five “Sioux” dialects of Santee-Sisseton (Dakota), Yankton-Yanktonai, Teton (Lakota), Assiniboiné and Stoney;<sup>2</sup> Winnebago-Chiwere, composed of Hoocąk and the Iowa, Oto and Missouri languages; and Dhegiha, comprising Omaha-Ponca, Kaw, Osage and Quapaw. Southeastern Siouan contains Biloxi and Ofo as one branch, and Tutelo and Saponi as another.

Catawba is the language most closely related to Siouan. Though sound-historical relationships are not very clear, Catawba examples are often included in an entry’s word list. The language probably next most closely related is Yuchi (cf. Kasak 2016 (in this volume)), but few examples of Yuchi are given.

### 3 The Reconstructed Proto-Siouan phoneme set

The CSD team recognizes eight vowels for Proto-Siouan, five oral and three nasal, which were distinguished also by length:<sup>3</sup>

i	u	ĩ	ũ
e	o		
a		ã	

Basic stops are \*p, \*t, \*k, and the glottal stop. Proto-Siouan had a series of alveolar, palatal and velar fricatives: \*s, \*š, and \*x, as well as \*h. It also had three resonants, \*w, \*r and \*y. Minimally, its consonant structure was as follows:

<sup>2</sup> Parks and DeMallie (1992) presents the results of a major dialect survey undertaken to clarify the relations among the various Dakotan dialects, a field in which considerable confusion had prevailed in the literature prior to their work. The CSD itself is rather deficient in Dakotan material other than Lakota and Dakota, although it contains a few words from four other categories: Stoney, Assiniboiné, Yankton, and “Sioux Valley”. The latter presumably refers to the Sioux Valley reservation in southwestern Manitoba, which Parks and DeMallie classify along with the Minnesota “Dakota” within the broad Santee-Sisseton dialect group. The present paper will follow Parks and DeMallie in sub-classification of Dakotan.

<sup>3</sup> Rankin, et al., 1998. “Proto Siouan Phonology and Grammar”.

	Labial	Alveolar	Palatal	Velar	Glottal
Stops:	p	t		k	ʔ
Fricatives:		s	š	x	h
Resonants:	w	r	y		

Many of the consonants of Siouan have occurred in clusters, however, so the actual historical picture is more complex than this. Stops can be adjoined to other stops in almost any order, all non-glottal stops and fricatives can be glottalized, aspiration (h) can occur either before or after stops, and combinations can occur involving fricatives, stops and resonants. In particular, there exist two historical phonemes that manifest as either stops or resonants in the daughter languages, called “funny w” and “funny r”. We symbolize these sounds as \*W and \*R. \*R was found in Proto-Siouan, and \*W in MVS only. Rankin believed that \*R was originally a combination of \*r with a laryngeal, either \*h or the glottal stop.

Notably, Siouan had no distinct nasal consonant series. When \*w or \*r occurred in the environment of a nasal vowel, they usually manifested as [m] or [n], respectively.

Accent in Proto-Siouan was normally on the second syllable of a word.

## 4 Historical Siouan sound shifts

One of the first sound shifts affecting Siouan was a process called “Carter’s Law’. Wherever a simple stop, \*p, \*t or \*k, occurred before the vowel of an accented syllable, the stop itself was more prominently “marked”, either by lengthening it or by preaspirating it. In the CSD, these are considered to be preaspirated. Thus, \*p, \*t and \*k become \*hp, \*ht and \*hk before an accented syllable. Since accent normally was on the second syllable of a word, these preaspirated stops and their derivatives are usually found inside the word rather than at the beginning. When they are found at the beginning of a word, it may be an indication of a lost initial syllable.

$$\begin{array}{rcl}
 \text{Carter's Law:} & *p\acute{V} & > *hp\acute{V} \\
 & *t\acute{V} & > *ht\acute{V} \\
 & *k\acute{V} & > *hk\acute{V}
 \end{array}$$

#### 4.1 Missouri Valley (Crow-Hidatsa) reflexes

In Missouri Valley Siouan, loss of historical aspiration, loss of nasal vowels and the merger of \*y with \*r are the most sweeping transformations of the Proto-Siouan phonemic inventory. Several other changes also occur.

- As in Mandan, Proto-Siouan aspiration is lost.<sup>4</sup> This notably includes the preaspirate series produced by the operation of Carter's Law.

Loss of aspiration:    \*hp   >   \*|p|   <   \*p  
                               \*ht   >   \*|t|   <   \*t  
                               \*hk   >   \*|k|   <   \*k

- Phonemic nasalization is completely lost. The three Proto-Siouan nasal vowels merge with their oral counterparts, and neither vowels nor consonants are distinguished by nasality.<sup>5</sup>

Loss of nasal vowels:    \*ã   >   \*|a|   <   \*a  
                               \*ĩ   >   \*|i|   <   \*i  
                               \*ũ   >   \*|u|   <   \*u

- As in Mandan and Hoocąk, Proto-Siouan \*y merges with \*r.

\*y/\*r merger:        \*y   >   \*|r|   <   \*r

- Between vowels at the end of a word, \*h is lost .

Loss of intervocalic \*h:        \*V<sub>1</sub>hV<sub>2</sub>   >   \*|V<sub>1</sub>V<sub>2</sub>|

- Rightward vowel exchange, in which the first two vowels of a word are swapped.<sup>6</sup> Both Crow and Hidatsa show this feature, but not necessarily in the same words, which suggests that this change was spreading at the time Crow and Hidatsa separated.

Rightward vowel exchange:        \*CV<sub>1</sub>CV<sub>2</sub>   >   |CV<sub>2</sub>CV<sub>1</sub>|

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<sup>4</sup> CSD 2006, p. 50, 85.

<sup>5</sup> CSD 2006, p. 109.

<sup>6</sup> CSD 2006, p. 193, 788.

#### 4.1.1 Hidatsa reflexes

Few changes are specific to Hidatsa. There may be a few vowel shifts and cluster changes. Proto-Siouan \*w generally manifests as |m|.

- Short \*o is raised to |u|:<sup>7</sup>      \*o > |u|
- \*xk becomes |hk|:<sup>8</sup>      \*xk > |hk|
- \*w becomes |m|:      \*w > |m|

#### 4.1.2 Crow reflexes

Crow is more innovative. The biggest change is complete loss of glottals, usually with lengthening of the following vowel. Proto-Siouan \*x manifests as |xš|. Proto-Siouan \*t becomes |s|.

- Glottalization is lost, but is reflected in the lengthening the following vowel, usually with rising pitch.<sup>9</sup>

Loss of glottals:      \*(C)<sup>?</sup>V    >    |(C)VV́|

- \*x becomes |xš|:<sup>10</sup>      \*x > |xš|
- \*t becomes |s|:      \*t > |s|

#### 4.2 Mandan reflexes

In Mandan, loss of historical aspiration<sup>11</sup> and the merger of \*y with \*r are the most notable sound shifts, as well as a peculiar reversal of sibilants.<sup>12</sup>

- As in Crow and Hidatsa, historical aspiration is lost, including the preaspirate series.

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<sup>7</sup> CSD 2006, p. 137, 922.

<sup>8</sup> CSD 2006, p. 193.

<sup>9</sup> CSD 2006, p. 232.

<sup>10</sup> CSD 2006, p. 124.

<sup>11</sup> CSD 2006, p. 50.

<sup>12</sup> CSD 2006, p. 126.



## 1 Regular sound shifts in the history of Siouan

Loss of aspiration:    \*hp   >   |p|   <   \*p  
                              \*ht   >   |t|   <   \*t  
                              \*hk   >   |k|   <   \*k

- As in Crow, Hidatsa, and Hoocąk, Proto-Siouan \*y merges with \*r.

\*y/\*r merger:        \*y   >   |r|   <   \*r

- Proto-Siouan \*s and \*š swap phonetic value. \*s becomes |š| and \*š becomes |s|.

\*s/\*š reversal:        \*s   >   |š|  
                              \*š   >   |s|

- The cluster \*sp metathesizes to become |ps|. More generally, there seems to be a usual, but not quite complete, constraint against having |p| as the second element of a cluster.<sup>13</sup>

\*sp metathesis:        \*sp   >   |ps|

- Before a consonant, the absolutizing or generalizing \*wa- prefix loses its vowel through syncopation, and the \*w becomes |p|. <sup>14</sup>

\*wa- syncopation:        \*waC   >   |pC|

### 4.3 MVS reflexes

In Mississippi Valley Siouan (MVS), the fricatives are divided between a voiceless series and a voiced series. This is also the only branch of Siouan in which the preaspirates are clearly distinguishable. Another major transformation is the loss of short, unaccented vowels in the initial syllable,<sup>15</sup> and the production of clusters that result from this syncopation. This frequently involves the absolutizing or generalizing \*wa- prefix, as well as the first person subject pronoun \*wa<sup>1</sup>- prefix. Also, the \*hr cluster becomes \*ht,<sup>16</sup> merging with the original preaspirate \*ht. For this group, we may restate the basic consonant set as follows:

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<sup>13</sup> CSD 2006, p. 275.

<sup>14</sup> CSD 2006, p. 793.

<sup>15</sup> CSD 2006, p. 10.

<sup>16</sup> CSD 2006, p. 199.

		Labial	Alveolar	Palatal	Velar	Glottal
Stops:						
	Simple:	p	t		k	ʔ
	Preaspirate:	hp	ht		hk	
	Postaspirate:	ph	th		kh	
	Glottalized:	pʔ	tʔ		kʔ	
Fricatives:						
	Voiceless:		s	š	x	h
	Voiced:		z	ž	ɣ	
	Glottalized:		sʔ	šʔ	xʔ	
Resonants:						
	Normal:	w	r	y		
	“Funny”:	W	R			

- The Proto-Siouan fricatives are divided between a voiced and a voiceless set, possibly according to phonological conditions.

Voiced/voiceless fricative split:

*s	>	* s  and * z
*š	>	* š  and * ž
*x	>	* x  and * ɣ

- Proto-Siouan \*pr merges with syncopated \*w-r to become MVS \*br.

\*pr/\*w-r syncopation:      \*w-r    >    \*|br|    <    \*pr

- Syncopated Proto-Siouan \*w-w usually becomes MVS \*W.<sup>17</sup>

\*w-w syncopation:      \*w-w    >    \*W

- Syncopated Proto-Siouan \*wa<sup>1</sup>- used as the first person affixed pronoun ‘I’, however, becomes MVS \*m when it precedes \*w or the glottal stop.<sup>18</sup>

I-\*wa<sup>1</sup>-w syncopation:      \*wa<sup>1</sup>-w    >    \*m    <    \*wa<sup>1</sup>-ʔ

<sup>17</sup> CSD 2006, p. 164, 193, 213

<sup>18</sup> CSD 2006, p. 10.

- Syncopated Proto-Siouan \*w-C, where C is a voiceless contoid, becomes MVS \*pC.<sup>19</sup>

$$\begin{array}{lll} \text{*w-C syncopation:} & \text{*w-h} & > \text{*ph} \\ & \text{*w-t} & > \text{*pt} \end{array}$$

- Proto-Siouan \*hr merges with preaspirate \*ht to become \*|ht|. <sup>20</sup>

$$\text{*hr/ht merger:} \quad \text{*hr} > \text{*|ht|} < \text{*ht}$$

#### 4.3.1 Dakotan reflexes

In Dakotan, vowel length is lost. Proto-Siouan \*y manifests as aspirated |čh|. So too do cases in which \*r is preceded by \*i. Many inalienably owned nouns beginning with |čh| in Dakotan are explained as \*r-initial stems preceded by the \*i- of inalienable possession. When \*r stands alone without an adjacent consonant, it manifests as |y|. When \*k is preceded by a front vowel, it palatalizes to |č| in Dakotan. Otherwise, the main sound shifts involve clusters. In particular, Proto-Siouan or MVS preaspirates become postaspirates, merging with that series.<sup>21</sup> The cluster \*rh, which is important in a few words, becomes plain |h|. <sup>22</sup> In Dakotan, clusters of two stops are frequent, and the cluster \*wR becomes \*|br|, merging this with the MVS \*br series. In all Dakotan languages, \*br manifests as |mn| before a nasal vowel. Stoney and Assiniboiné manifest \*br and \*kr the same regardless of environment, but these sounds alternate in the other three dialects according to whether the following vowel is oral or nasal.

- vowel length is lost:  $\text{*VV} > |V| < \text{*V}$
- \*y- and \*ir- merge as |čh-|:  $\text{*y-} > |čh-| < \text{*ir-}$
- \*rV becomes |yV|:  $\text{*rV} > |yV|$
- \*k after front vowel becomes |č|:  $\text{*ik} > |ič|$   
 $\text{*ek} > |eč|$
- preaspirates merge with postaspirates:

<sup>19</sup> CSD 2006, p. 793.

<sup>20</sup> CSD 2006, p. 199.

<sup>21</sup> CSD 2006, p. 199, 269, 818.

<sup>22</sup> CSD 2006, p. 165.

*hp	>	ph	<	*ph
*ht	>	th	<	*th
*hk	>	kh	<	*kh

- \*rh becomes |h|:                      \*rh > |h| < \*h
- \*wR merges with MVS \*br:      \*wR > \*|br| < \*br
- Dakotan \*br then manifests as |mn| before a nasal vowel: \*brV̥ > \*|mnV̥|

#### 4.3.1.1 Santee-Sisseton reflexes

- \*br alternates by nasality:      \*brV > |md| or |bd|<sup>23</sup>  
   \*brV̥ > |mn|
- \*kr alternates by nasality:      \*krV > |hd|  
   \*krV̥ > |hn|
- \*R manifests as |d|:                      \*R > |d|

#### 4.3.1.2 Yankton-Yanktonai reflexes

- \*br alternates by nasality:      \*brV > |bd| or |md|  
   \*brV̥ > |mn|
- \*kr alternates by nasality:      \*krV > |kd| or |gd|  
   \*krV̥ > |kn| or |gn|
- \*R manifests as |d|:                      \*R > |d|<sup>24</sup>

<sup>23</sup> In the CSD, “Sioux Valley” seems to agree with “Dakota” in practically everything except that the one case recorded of a Sioux Valley word with a \*br reflex before an oral vowel shows this as |bd|, rather than the usual |md| for Dakota.

<sup>24</sup> The CSD records very few words of Yankton, none of which are useful here. Parks and DeMallie, 1992, stress that the long-repeated claim that Yankton-Yanktonai is “Nakota”, is false; their self-designation, when not misled by confused linguists, is “Dakota”, which means that \*R manifests as |d|, not |n|, in their dialect. The true Nakotas are the Assiniboines and the Stoneys. The authors clearly illustrate the \*kr clusters for this group on pages 245-6, but do not include any \*br clusters. Words listed on the Yankton Reservation pedagogical website, Hubbeling, Cook, et al., show that \*br before an oral vowel normally manifests as |bd|, or perhaps sometimes as |md| or |mbd|.

#### 4.3.1.3 Teton (Lakota) reflexes

- \*br alternates by nasality:      \*brV > |bl|  
  \*brV̥ > |mn|
- \*kr alternates by nasality:      \*krV > |gl|  
  \*krV̥ > |gn|
- \*R manifests as |l|:                \*R > |l|
- \*tp becomes |kp|:<sup>25</sup>                \*tp > |kp| < \*kp

#### 4.3.1.4 Assiniboine reflexes

- \*br always manifests as |mn|:      \*br > |mn|<sup>26</sup>
- \*kr always manifests as |kn|:      \*kr > |kn|
- \*R manifests as |n|:                \*R > |n|

#### 4.3.1.5 Stoney reflexes

- Fricatives tend to shift forward:    \*s > |θ|  
  \*š > |s|
- Free simple stops are voiced:      \*p > |b|  
  \*t > |d|  
  \*k > |g|
- \*br always manifests as |mn|:      \*br > |mn|
- \*kr always manifests as |hn|:      \*kr > |hn|
- \*R manifests as |n|:                \*R > |n|
- \*tk becomes |kt|:                \*tk > |kt| < \*kt

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<sup>25</sup> CSD 2006, p. 253, 265, 865.

<sup>26</sup> The CSD contains only a few words of Assiniboine, or Nakota. Parks and DeMallie, 1992, demonstrate that \*R becomes |n|, and that \*kr manifests as |kn| before both oral and nasal vowels. The preliminary Assiniboine text developed by Parks, DeMallie and Cumberland, 2012, contains words with \*br clusters showing that these manifest as |mn| regardless of the nasality of the following vowel.

#### 4.3.2 Winnebago-Chiwere reflexes

Hoocąk and IOM share a number of innovations. The cluster *\*pt* merges with preaspirate *\*ht*. Proto-Siouan simple stop *\*p* before vowels becomes *|w|*. Generally, it appears that the postaspirate stop series merges with the simple stop series. The *\*rh* cluster also merges with the simple stop *\*t*. As in Dhegiha, the presumed cluster *\*wR* always seems to reduce to simple *\*|R|*.

Both languages show a sporadic tendency to nasalize vowels that are not nasal in other MVS languages.<sup>27</sup> Both of them also sometimes replace a glottal stop with a glottalized *|tʔ|* following *\*i*. This could be interpreted as an epenthetic *|y|* being naturalized as *\*|r|*, and then converted to *|t|* before the glottal stop. The problem is that the glottal stop itself would seem to be in the way of obtaining the epenthetic *|y|* in the first place. Rankin suggests that in verb paradigms, the glottal stop is lost in conjugated forms, and that the conjugated form was recast back into the main verb.

- *\*pt* becomes *|ht|*: *\*pt* > *\*|ht|* < *\*ht*
- *\*rh* becomes *\*|d|*: *\*rh* > *\*|d|* < *\*t*
- *\*wR* merges with MVS *\*R*: *\*wR* > *\*|R|* < *\*R*
- *\*p* becomes *|w|* before a vowel: *\*pV* > *\*|wV|*
- *\*iʔV* verbs become *|itʔV|*: *\*iʔV* > *\*|itʔV|*

##### 4.3.2.1 Hoocąk reflexes

Hoocąk shows quite a number of sound shifts of its own. One of its biggest is that it levels vowel length on monosyllables: the vowel of all monosyllabic words is long.<sup>28</sup> Further, it creates many new monosyllabic words by dropping the trailing final vowel, especially *\*-e*. On top of this, it creates an extra syllable within an obstruent-sonorant cluster, by inserting the vowel that follows the cluster into the spot between the two consonants as well.<sup>29</sup> As in Mandan, Crow and Hidatsa, Proto-Siouan *\*y* merges with *\*r*. The *\*t* series, except for glottalized *tʔ*, is affricated into a *|č|* series. An *\*rʔ* cluster may become either *|tʔ|* or *|kʔ|*.<sup>30</sup>

<sup>27</sup> CSD 2006, p. 50.

<sup>28</sup> CSD 2006, p. 303, 797.

<sup>29</sup> Helmbrecht, Johannes. “The Accentual System of Hocąk”, p. 123-4. This Hoocąk pattern of back-filling an obstruent-sonorant cluster with the following vowel is known as ‘Dorsey’s Law’.

<sup>30</sup> CSD 2006, p. 816-817.

- The vowels in monosyllables are always long.

Long monosyllables:  $*CV(C) > *|CVV(C)| < *CVV(C)$

- Trailing final vowels are often dropped, making even more monosyllables.

Trailing vowels dropped:  $*CVCe > *|CVVC| < *CVVCe$

- Obstruent plus sonorant clusters are broken up by insertion of the following vowel between the obstruent and the sonorant.

Back insertion of vowel:  $*C_{\text{obst}}C_{\text{son}}V_1 > *|C_{\text{obst}}V_1C_{\text{son}}V_1|$

- As in Crow, Hidatsa, and Mandan, Proto-Siouan  $*y$  merges with  $*r$ .

$*y/*r$  merger:  $*y > |r| < *r$

- $*t$  series affricatizes:  $*t > |j|$

$*ht > |č|$

- $*r^?$  becomes  $|t^?|$  or  $|k^?|$ :  $*r^? > |t^?|$  or  $|k^?|$

- $*R$  manifests as  $|d|$ :<sup>31</sup>  $*R > |d|$

#### 4.3.2.2 IOM reflexes

A distinctive features of IOM is its forward shifting of the fricatives. Siouan  $*s$  becomes  $|\theta|$ , and  $*š$  becomes  $|s|$ .<sup>32</sup> In clusters of  $*k$  before a fricative, the  $|k|$  is replaced by a glottal stop.<sup>33</sup> As in Kaw and Osage, the  $*t$ -series, including  $*t^?$ , is affricatized before a front vowel  $*i$  or  $*e$ . Initial  $*o$ - regularly becomes  $|u|$ .<sup>34</sup>

One of the most interesting features of IOM is its treatment of the Proto-Siouan  $*y$  phoneme. As in several other Siouan languages, Proto-Siouan  $*y$  merges with another phoneme. Uniquely to IOM, however, the  $*y$  words are split about evenly between which other phoneme they merge with. Some of them merge with

<sup>31</sup> Helmbrecht, Johannes. Phonetics and Phonology, p. 1, and personal communication. This sound is written ‘t’ in the CSD and in modern Wisconsin Hooak orthography. But the ‘t’ is voiced in prevocalic and intervocalic position, where it is the reflex of  $*R$ .

<sup>32</sup> CSD 2006, p. 245.

<sup>33</sup> CSD 2006, p. 857.

<sup>34</sup> CSD 2006, p. 893.

Siouan \*r, as in Hoocąk, Mandan, Crow and Hidatsa. Others remain |y|, but these are joined by MVS \*ž, which itself becomes |y| in IOM. The fact that many IOM \*y fail to merge with \*r is mentioned in the CSD, but the significance of the counter-merger of these \*y with MVS \*ž seems not to have been noticed. For IOM only, we must consider the \*y phoneme to be two distinct phonemes, \*y<sub>1</sub> and \*y<sub>2</sub>.

- Fricatives shift forward:

$$\begin{array}{lcl} *s & > & |\theta| \\ *š & > & |s| \end{array}$$

- \*k before fricative becomes |ʔ|:      \*kS > |ʔS|
- Initial \*o- becomes |u-|:              \*o- > |u-|
- \*R manifests as |d|:                  \*R > |d|
- \*y<sub>1</sub> merges with \*r as |r|:              \*y<sub>1</sub> > \*|r| < \*r
- \*y<sub>2</sub> merges with \*ž as |y|:              \*y<sub>2</sub> > |y| < ž
- \*t-series affricates before \*i/\*e:      \*ti > \*|či|  
     \*te > \*|če|  
     \*hte > \*|hče|  
     \*tʔe > \*|čʔe|  
     etc.

### 4.3.3 Dhegiha Reflexes

Dhegiha is characterized by substantial shifts and mergers in its vowel structure. The nasal Proto-Siouan vowel \*ɥ merges with \*a, producing a variably pronounced low back vowel with minimal rounding. The oral vowel \*u also shifts forward to become |ü|. In Dhegiha, Siouan \*y merges completely with MVS \*ž. Unlike the other MVS languages, the preaspirate stops do not merge with another stop series. In most Dhegiha languages, these manifest as ‘tense’, or double-long unaspirated stops, but in Osage they manifest as preaspirates. Proto-Siouan \*rh becomes |th|. <sup>35</sup> MVS stop clusters collapse into a single stop, of the preaspirate series. The clusters \*ks and \*ps become |s|, and the clusters \*kš and pš become

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<sup>35</sup> CSD 2006, p. 165.



|š|. <sup>36</sup> Siouan \*xw becomes |ph|. <sup>37</sup> As in Winnebago-Chiwere, the presumed cluster \*wR always seems to reduce to simple \*|R|.

- \*ɥ merges with \*a:            \*ɥ > |a| < \*a
- \*u becomes \*|ü|:            \*u > |ü|
- \*y merges with MVS \*|ž|:    \*y > |ž| < \*ž
- \*rh merges with \*th:        \*rh > |th| < \*th
- \*xw merges with \*ph:        \*xw > |ph| < \*ph
- \*ps and \*ks merge with \*s:    \*ps > |s| < \*s  
                                      \*ks > |s| < \*s
- \*pš and \*kš merge with \*š:    \*pš > |š| < \*š  
                                      \*kš > |š| < \*š
- \*wR merges with MVS \*R:    \*wR > \*|R| < \*R
- Stop clusters merge with preaffricate stops (general pattern):

*pt	>	* ht	<	*ht
*pk	>	* hk	<	*hk
*tp	>	* ht	<	*ht
*tk	>	* ht	<	*ht
*kp	>	* hp	<	*hp
*kt	>	* ht	<	*ht

#### 4.3.3.1 Omaha-Ponca reflexes

Omaha and Ponca carry the vowel reorganization begun in Dhegiha even further. Dhegiha \*ü, from Siouan \*u, now loses its rounding and merges completely with Siouan \*i. Behind it, the Siouan \*o vowel is raised to |u|. Siouan \*R manifests as |n|, thereby merging with the |n| from Siouan \*r before a nasal vowel. The plain Siouan glottal stop disappears, while the glottalized velar clusters \*k<sup>?</sup> and \*x<sup>?</sup> both reduce to |ʔ| as a neo-glottal stop. The preaspirate stop series manifest as tense, while simple stops are voiced. The postaspirate \*ph usually, but not

<sup>36</sup> CSD 2006, p. 64, 123, 222, 849.

<sup>37</sup> CSD 2006, p. 180.

always, reduces to |h|. The Siouan \*r phoneme manifests as what I call ‘ledh’, a quick, smooth, flip of the tongue from an apical |l| to edh and off the back of the front teeth. Linguists generally indicate it with the edh symbol, ǝ, though l and r would be equally reasonable choices. Additionally, an entire series of new stops is being generated from a custom of affricating the t-series stops as a “baby talk” method of suggesting smallness or cuteness.

- Dhegiha \*ü merges with \*i:      \*ü > |i| < \*i
- \*o becomes |u|:                      \*o > |u|
- \*R manifests as |n|:                \*R > |n| < \*n < \*r
- \*ʔ disappears:                        \*VʔV > |VV|
- \*kʔ and xʔ become |ʔ|:            \*kʔ > |ʔ| < \*xʔ
- \*ph usually becomes |h|:        \*ph > |h|
- Free simple stops are voiced:      \*p > |b|  
     \*t > |d|  
     \*k > |g|
- Preaspirate stops are tense:      \*hp > |pp|  
     \*ht > |tt|  
     \*hk > |kk|
- Diminutive t-series transform:    |d| dim. > |j|  
     |t| dim. > |č|  
     |tt| dim. > |čč|  
     |th| dim. > |čh|  
     |tʔ| dim. > |čʔ|

#### 4.3.3.2 Kaw-Osage reflexes

Kaw and Osage share a characteristic of dropping the velar stop from the \*kr cluster and replacing the cluster with |l|. It seems that both of them also merge the glottalized fricatives \*sʔ and \*sʔ into a glottalized dental/alveolar affricate |cʔ|



#### 4.3.3.3 Quapaw reflexes

In Quapaw, free Siouan  $*r$  manifests as  $|d|$ . It seems that simple stops sometimes become tense.<sup>40</sup> The Siouan cluster  $*p^?$  is reduced to plain glottal stop.<sup>41</sup>

- Free  $*r$  manifests as  $|d|$ :  $*r > |d|$
- Simple stops may become tense:  $*t > |tt|$
- $*p^?$  becomes  $|ʔ|$ :  $*p^? > |ʔ|$

#### 4.4 Southeastern Siouan reflexes

Very few systematic sound shifts characterize Southeastern Siouan as a whole. One mentioned in the CSD is the loss of glottalized fricatives. Also, it seems that  $*š$  usually affricatizes to  $|č|$ .

- Fricatives lose glottalization and merge with the corresponding plain form. Thus,  $*S^? > *|S|$ .<sup>42</sup>

Fricatives deglottalize:	$*S^?$	$>$	$* S $	$<$	$*s$
	$*š^?$	$>$	$* š $	$<$	$*š$
	$*X^?$	$>$	$* X $	$<$	$*X$

- $*š$  then usually becomes  $|č|$ :<sup>43</sup>  $*š > *|č|$

##### 4.4.1 Tutelo reflexes

Tutelo seems conservative. The only significant change noted involves the Proto-Siouan  $*š$  and  $*s$  phonemes.

- $*š$  normally becomes  $|č|$ :  $*š > |č|$
- Sometimes,  $*š$  becomes  $|s|$ :<sup>44</sup>  $*š > |s| < *s$
- $*s$  is indifferently pronounced:<sup>45</sup>  $*s > |s|$  or  $|š|$

<sup>40</sup> CSD 2006, p. 833.

<sup>41</sup> CSD 2006, p. 831.

<sup>42</sup> CSD 2006, p. 856.

<sup>43</sup> CSD 2006, p. 99, 126, 167, 827, 931.

<sup>44</sup> CSD 2006, p. 912.

<sup>45</sup> CSD 2006, p. 54, 931.

#### 4.4.2 Ofo-Biloxi reflexes

In Ofo and Biloxi, initial Proto-Siouan \*w or \*h before a vowel is lost.<sup>46</sup>

- \*wV becomes plain |V|:      \*wV > |V|
- \*hV becomes plain |V|:      \*hV > |V|

##### 4.4.2.1 Biloxi reflexes

Biloxi is fairly conservative. Final \*-i and \*-e merge as |-i|,<sup>47</sup> and the glottal stop often appears as |h|. <sup>48</sup>

- Final \*-e merges with \*-i:      \*-e > |-i| < \*-i
- The glottal stop becomes |h|:      \*ʔ > |h|

##### 4.4.2.2 Ofo reflexes

Ofo is much more innovative. Proto-Siouan \*y becomes aspirated |čh|,<sup>49</sup> as in Dakotan. The CSD suggests that Proto-Siouan \*š before an accented syllable may have become aspirated |čh| as well.<sup>50</sup> Notably, the \*s fricative changes to |f|, while Proto-Siouan \*x shifts forward to become a neo-|š|. <sup>51</sup> Several of the Proto-Siouan clusters do interesting things as well. In the case of a glottalized stop consonant, the glottal stop seems to shift forward so that it releases prior to the stop. This phenomenon is suggested in Ofo transcriptions as a neutral vowel appearing epenthetically in front of the stop that in other languages is known to be glottalized. The stop consonant is then aspirated as well.

- \*y becomes |čh|:      \*y > |čh|
- Accented \*|š| becomes |čh|:      \*š́ > \*|č́| > |čh́|
- \*s becomes |f|:      \*s > |f|
- \*x becomes |š|:      \*x > |š|

<sup>46</sup> CSD 2006, p. 7, 223, 817, 929.

<sup>47</sup> CSD 2006, p. 901.

<sup>48</sup> CSD 2006, p. 103.

<sup>49</sup> CSD 2006, p. 85, 242.

<sup>50</sup> CSD 2006, p. 827.

<sup>51</sup> CSD 2006, p. 174, 299.

- \*hs becomes |fh|:<sup>52</sup>                      \*hs > |fh|
- \*Cr becomes |l|:<sup>53</sup>                      \*Cr > |l|
- \*Cʔ becomes |əCh|:<sup>54</sup>                      \*Cʔ > |əCh|

## Abbreviations

CSD = Comparative Siouan Dictionary (2006); IOM = Iowa-Otoe-Missouria; MVS = Mississippi Valley Siouan.

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<sup>52</sup> CSD 2006, p. 174, 299.

<sup>53</sup> CSD 2006, p. 90.

<sup>54</sup> CSD 2006, p. 229, 232.

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## Chapter 2

# Ba-be-bi-bo-ra: Refinement of the Ho-Chunk syllabary in the nineteenth and twentieth centuries

Kathleen Danker

In 1885, a man from the Nebraska Winnebago Reservation learned the Great Lakes syllabary writing system from the Sac and Fox in Iowa and began adapting it to Ho-Chunk, the only Siouan language to be written in this syllabary. During the first half of the twentieth century, the Ho-Chunk syllabary continued to be refined by writers who created new symbols necessary for the additional Ho-Chunk vowels and consonants and discarded unnecessary Sac and Fox characters. Increasing correspondence to the phonemic characteristics of the Ho-Chunk language can be seen by comparing the version of it used by its original adapter in Nebraska published in 1890, a text composed in 1938 by Sam Blowsnake in Wisconsin, and one written in the 1970's by Felix White, Sr., of Winnebago, Nebraska, who referred to the Ho-Chunk syllabary as the *ba-be-bi-bo-ra*. KEYWORDS: [Ho-Chunk, Winnebago, syllabary, orthography]

## 1 Introduction

The members of the Ho-Chunk, or Winnebago, tribe, with reservations in Wisconsin and Nebraska, are the only speakers of a Siouan language to have developed a phonemic written language system. Generally referred to as a syllabary, this type of orthography is more specifically termed an *abugida* as defined by Peter T. Daniels in his **Daniels1990** typology of writing systems. Rather than employing separate symbols for all possible syllabic combinations of consonants and vowels in a language, as does a classic syllabary, an abugida consists of a phoneme-specific consonant symbol followed by a secondary, also phoneme-specific, vowel symbol. In the case of the Ho-Chunk system, the vowel /a/ was



usually inherent or unmarked, but all other vowels were marked and connected to the preceding consonant in a syllable. In this article, I will use the more familiar term syllabary for the Ho-Chunk system. The Ho-Chunk people were introduced to this type of writing in the 1880's by members of the Sac and Fox tribe, with whom they had historical ties.

Little is known about the origins of the Great Lakes Algonquian Syllabary developed by the Algonquian-speaking Sac and Fox, Potawatomi, Kickapoo, and possibly Ottawa tribes in the late nineteenth century. First mentioned in print in 1880, its characters were based on cursive European handwriting, likely French (**Walker1996**). In 1884 or 1885, a man from the Nebraska Winnebago Reservation learned it while visiting the Sac and Fox in Iowa and adapted it to Ho-Chunk (**Fletcher1890b**). According to the ethnographer Alice Fletcher, by 1888 knowledge of the syllabary writing system had "spread rapidly among the Winnebagoes of Nebraska, and also to that part of the tribe living in Wisconsin, so that at the present time the principal correspondence of the tribe takes place by means of these characters" (**Fletcher1890a**). Considerable adaptation was necessary to convert the Sac and Fox system to Ho-Chunk. Sac (Sauk) and Fox (Mesquakie) have four vowels, all oral, while Ho-Chunk has five oral vowels and three nasalized ones. There are nearly twice as many consonants in Ho-Chunk as in Sac and Fox. The Sac, however, do have one consonant, /θ/, not found in Ho-Chunk, and the Fox included a single character in their syllabary for a consonant cluster, /kw/ (**Jones1906**). (See Tables 1, 2 and 3 below.) Examples of the Ho-Chunk syllabary from the nineteenth and twentieth centuries show that it took some time for its users to discard unnecessary Sac and Fox characters and to develop the new ones required for their Siouan language.

Initial enthusiasm for the syllabary may have declined among the Ho-Chunk by 1912 when anthropologist Paul Radin reported that it "was known to very few Indians and was used only for the writing of letters" (**Radin1954** cited in **Walker1981**). However, this writing of letters between Nebraska and Wisconsin did continue until correspondence in Ho-Chunk became outmoded because of general English literacy in the second half of the twentieth century. Up to that time, tribal members in Nebraska and Wisconsin worked on altering the orthography and the syllabification conventions of their writing system to better represent the Ho-Chunk language. Because this took place primarily within families, the syllabary inevitably developed into somewhat different versions. Nonetheless, an overall evolution of the Ho-Chunk syllabary can be seen by comparing and contrasting a version of it published by Alice Fletcher in 1890 (Tables 4 and 5 below); a syllabary text composed in 1938 by Sam Blowsnake in Wisconsin

that was included in an unpublished manuscript written by Amelia Susman in **Susman1939** (Table 6 below); and a fragment of a text written by Felix White, Sr., of Winnebago, Nebraska, in the late 1970's when he taught me his version of the syllabary, which he called the *ba-be-bi-bo-ra* (Table 7 below). The published 1890 version of the Ho-Chunk syllabary contained additions to its Sac and Fox model as well as unnecessary retentions of some of its features. The texts of Blowsnake and White in the twentieth century conformed more closely to the phonemic characteristics of the Ho-Chunk language. The few ways in which these later texts continued to differ from these characteristics are of particular interest because of what they may reveal about how Ho-Chunk speakers conceptualize the phonemes of their language.

## 2 The Fletcher Publications

Alice Fletcher published the first account of the Ho-Chunk syllabary, actually two slightly different accounts, both in 1890, one in the *Proceedings of the American Association for the Advancement of Science* and the other in the *Journal of American Folklore*. By chance, Fletcher had been on the Nebraska Winnebago reservation to witness the earliest inception of the writing system. In May 1883, she had been moved there from the adjacent Omaha Reservation to recuperate from a serious illness incurred while she was apportioning Omaha land allotments (**Mark1988**). Fletcher lay bedridden at the Winnebago Agency in the winter of 1883–1884 when some fifteen to twenty members of the Sac and Fox tribe living in Iowa came to visit the reservation. The Fox and the Ho-Chunk had been neighbors in Wisconsin since at least 1600 as on-again, off-again allies and enemies – although primarily allies after 1737, when the Ho-Chunk helped persuade the French not to exterminate the Fox at the end of the Fox Wars (**Bieder1995**). Fletcher wrote that the travelers from Iowa “were in full Indian costume and bent on enjoying old-time pleasures. I met these visitors several times; they came not infrequently to see me when I lay upon my sick bed” (**Fletcher1890b**). They told her that someone in the tribe had recently invented a writing system for their language, but none of them then visiting in Nebraska had learned it (**Fletcher1890a**).

In 1884 or 1885, a group of Ho-Chunk paid a return visit to the Sac and Fox, and one of them studied the Sac and Fox writing system. Once back at the Nebraska Winnebago reservation, he began to adapt the Sac and Fox orthography to the Ho-Chunk language and to teach it to others. According to Fletcher, he “became before long quite expert in its use, to his own amusement and that of his friends” (**Fletcher1890a**). Fletcher received a letter from the Winnebago agent in August

1885 stating:

The tribe have suddenly taken to writing their own language, and people who have never learned English have acquired this art. The people claim they took the basis of it from the Sauk and elaborated it themselves. It is a very suggestive sight to see half a dozen fellows in a group with their heads together working out a letter in these new characters; it illustrates the surprising facility with which they acquire what they want to learn. (Fletcher1890a)

In 1887–1888, Fletcher returned to the Winnebago Reservation, having been hired to oversee allotment there as she had done on the Omaha Reservation (Mark1988). The Ho-Chunk man who had brought the Sac and Fox syllabary back to Nebraska arranged a table of his Ho-Chunk syllabary characters for Fletcher, which she then published in her 1890 articles about the writing system. Unfortunately, she did not report her informant’s name in these articles (Fletcher1890a).





### 3 The Phonemes of the Ho-Chunk and Sac and Fox Languages

Table 1: Ho-Chunk phonemes (Susman1943).

Ho-Chunk Vowels						
Oral	a	i	u	e	o	
Nasal	ą	ĩ	ų			
Ho-Chunk Consonants						
	(Voiced)	(Voiceless)				
I	A	B	II	III		
stops	b	p	nasals	m	stops	t
	g	k		n		'
affricative	ǰ	č	trill	r	breath	h
spirants	z	s	semi-vowels	w		
	ž	š		y		
	ʎ	x				

Table 1 shows the vowels and consonants of the Ho-Chunk language as organized by Amelia Susman in her dissertation on the Ho-Chunk accentual system (**Susman1943**). Her listing does not distinguish between long and short vowels or glottalized and unglottalized consonants as do more recent descriptions of the language such as that in *Hocqk Teaching Materials, Volume I* by Johannes Helmbrecht and Christian Lehman (**HelmbrechtLehman2010**). However, Susman's arrangement is particularly useful for this article because of the way it divides Category I consonant stops, affricatives, and spirants into two columns: voiced (sonant) in column A and voiceless (surd) in column B.

Table 2: Mesquakie and Sauk vowel phonemes (adapted from **NatLangMeskSauk Susman1939** and **Jones1906**).

Alphabetic	Syllabic	Americanist
a		a, ʌ
â		aʰ
e		e, ε
ê		eʰ, æʰ
i		i, ɪ
î		iʰ
o		o, ʊ
ô		oʰ

Tables 2 and 3 show the vowels and consonants found in the closely related Mesquakie (Fox) and Sauk (Sac) languages (Mesquakie-Sauk). To the right of each vowel in Table 2, and of each consonant in Table 3, I have added the corresponding Fox syllabary characters as described by William Jones in **Jones1906**. Length is phonemic in both Ho-Chunk and Sac and Fox vowels, something indicated in Table 2, but not marked in either the Ho-Chunk or the Sac and Fox syllabaries. Jones did not record a syllabary symbol for the consonant /h/ found in Sac and Fox as well as in Ho-Chunk, nor one for the consonant /θ/ found only in Sac. As can be seen by comparing Tables 1, 2 and 3, Ho-Chunk has the four oral vowels /a/, /e/, /i/ and /o/ used in Sac and Fox as well as a fifth Ho-Chunk oral vowel /u/. There are also nasalized /ã/, /ĩ/ and /ũ/ vowels in Ho-Chunk. Ho-Chunk shares the consonants /č/, /h/, /k/, /m/, /n/, /p/, /s/, /š/, /t/, /w/ and /y/ with this Algonquian language, but in addition has the consonants /b/, /g/, /j/, /r/, /x/, /ʎ/, /z/, /ž/ and a glottal stop.

Table 3: Mesquakie and Sauk consonant phonemes (adapted from NatLangMeskSauk Susman1939 and Jones1906).

Alphabetic	Syllabic	Americanist
ch	<i>tt</i>	č
h		h
k	<i>K</i>	k
m	<i>m</i>	m
n	<i>n</i>	n
p	<i>l</i>	p
s	<i>s</i>	s (only in Mesquakie)
sh	<i>d</i>	š
t	<i>ot</i>	t
th		θ (only in Sauk)
w	<i>w</i>	w
y	<i>y</i>	y
kw	<i>8</i>	kw

4 The Fletcher Syllabary

An early stage of how Ho-Chunk letter writers went about adapting the Sac and Fox syllabary to their own language can be seen in Tables 4 and 5, the Ho-Chunk syllabary table published by Fletcher in 1890. For easier display on the page, Fletcher’s original table has been divided into two halves, one consisting of four vertical columns (one each for the vowels /a/, /e/, /i/ and /o/) of CV syllables and the other of four column of the same vowels in CVC syllables having the last consonant of /k/. This table appears odd to anyone familiar with the Ho-Chunk language, but its anomalies can be explained as resulting from a combination of the following factors: the arrangement of the table by syllables rather than by vowels and consonants; the retention of two Sac and Fox syllabary characters not corresponding to Ho-Chunk phonemes; the lack of syllabary characters for four Ho-Chunk vowels and seven Ho-Chunk consonants (counting the glottal stop); the difficulty of representing handwritten symbols in print; the misreading

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Table 4: Fletcher's representations of CV characters in the Ho-Chunk syllabary with English pronunciations (**Fletcher1890a**).

Syll. = Engl.	Syll. = Engl.	Syll. = Engl.	Syll. = Engl.
Ka = gah	Ke = gay	Ki = gee	Ko = go
da = jah	de = jay	di = g	do = jo
wa = wä	we = we	wi = wī	wo = wo
xa = xä	xe = xe	xi = xī	xo = xo
ta = tdä	te = tde	ti = tdi	to = tdo
ma = mä	me = me	mi = mī	mo = mo
na = nä	ne = ne	ni = nī	no = no
La = Rä	Le = Ray	Li = Ree	Lo = Row
ga = gwar	ge = Gway	gi = gwee	go = gwo
ra = Sah	re = say	ri = see	ro = So
Tha = Thä	The = They	Thi = The	Tho = Tho
Ya = yä	Ye = yea	Yi = Ye	Yo = Yo
ba = pah	be = pay	bi = pee	bo = po
a = ä	e = e	i = i	o = o
ḍa = shar	ḍe = shay	ḍi = shee	ḍo = sho
Aa = hah	Ae = hay	Ai = hee	Ao = ho

of handwriting; the use of a separate character for the consonant /k/ when it followed a vowel to end a syllable; and the ad hoc spelling of the English sound equivalents employed.

The arrangement of Tables 4 and 5 into syllables is the system used by the Sac and Fox and the Ho-Chunk, who put spaces between these syllables when they combined them into words and sentences. The two characters retained from the Sac and Fox syllabary, although not phonemes of the Ho-Chunk language, were a *Th*-shaped syllabary character standing for the Sac phoneme /θ/, which was not represented in Jones' Fox syllabary; and a *g*-shaped character used to represent a consonant cluster – although not the Fox consonant cluster /sk/, but one combining /g/ and /w/ into /gw/. Although it includes these unnecessary characters, Fletcher's table lacks characters for the Ho-Chunk oral vowel /u/, its three nasalized vowels /a/, /i/ and /u/, and its glottal stop /ʔ/. The table also omits six other Ho-Chunk consonants, because it gives syllabary characters for only one of each of the paired voiced and voiceless stops, affricatives, and spirants

Table 5: Fletcher's representations of CVC characters in the Ho-Chunk syllabary with English pronunciations (**Fletcher1890a**).

Syll. = Engl.	Syll. = Engl.	Syll. = Engl.	Syll. = Engl.
Kam = gark	Kem = gake	Kim = geek	Kom = goke
dam = jark	dem = jake	dim = geek	dom = joke
wam = wärk	wem = werk	wim = week	wom = woke
xam = xärk	xem = xerk	xim = xEEK	xom = xörk
tam = tdärk	tem = tderk	tim = tdeek	tom = tdörk
mam = märk	mem = make	mim = meek	mom = moke
nam = närk	nem = nake	nim = neek	nom = noke
Lam = Rark	Lem = Rake	Lim = Reek	Lom = Roke
gam = Gwark	gem = Gwake	gim = Gweek	gom = Gwooke
ram = sark	rem = sake	rim = seek	rom = soke
Tham = Thark	Them = Thake	Thim = Theek	Thom = Thoke
Yam = Yark	Yem = Yake	Yim = Yeek	Yom = Yoke
bam = park	bem = pake	bim = peek	bom = poke
am = ark	em = ake	im = eek	om = oke
ḍam = shark	ḍem = shake	ḍim = sheek	ḍom = shoke
Aam = hark	Aem = hake	Aim = heek	Aom = hoke

shown in columns A and B of Category I in Table 1. There is a character for the voiceless /p/ but not the voiced /b/; the voiced /g/ but not the voiceless /k/; the voiced /j/ but not the voiceless /č/; the voiceless /s/ but not the voiced /z/; the voiceless /š/ but not the voiced /ž/; and the voiceless /x/ but not the voiced /ɣ/.

As far as can be told from the printed letters used in the table to stand for cursive handwriting, the Ho-Chunk syllabary in 1890 used the same or similar characters as the Fox syllabary for the shared vowels and consonants /e/, /i/, /o/, /p/, /m/, /n/, /š/, /w/, /y/, and /t/. The Ho-Chunk symbol for the vowel /a/ looked like a handwritten lower case <a> rather than the handwritten lower case <u> that stood for /a/ in the Fox syllabary. The Ho-Chunk character for the consonant /g/, an upper case <K>, seems to be the same as that used for the Sac and Fox consonant /k/. However, the Ho-Chunk consonant /j/ was not represented by the <tt> used by the Fox for the consonant /č/, but by a printed <d>. Fletcher's informant's syllabary used another printed <d>, this one italicized, to stand for the consonant /š/. Fletcher's informant also deviated from the Sac and Fox model



by using a printed lower case <r> to stand for the consonant /s/ although the Fox syllabary used an <s>. Perhaps when the Ho-Chunk adapter of the syllabary studied Sac and Fox syllabary writing, he saw a lower-case handwritten <s> that was not closed at the bottom, mistaking it for an <r>, because some Fox users of their syllabary wrote <s> that way (Walker1996).

The last four vertical columns of Fletcher's table, here reproduced in Table 5, contain some of its oddest-looking material, in both the Ho-Chunk syllables to the left of the equal signs and the English sound equivalents to their right. The italicized lower case <m> in each CVC Ho-Chunk syllable appears to represent an experiment with using a special character to stand for the consonant /k/ when it follows a vowel to end a syllable, /k/ being the consonant found most frequently in this position in Ho-Chunk. Fletcher indicated that, when handwritten, this <m> character was "more like a wavy line" (Fletcher1890a). Of the English sound equivalents given for the Ho-Chunk syllables, the <ar> constructions in the first column of Table 4, the <ark> constructions in the first column of Table 5 and the three cases of <erk> in the second column of Table 5 are the hardest to make sense of, because the Ho-Chunk language has no /r/-controlled vowels. It seems to me that the only possible explanation for these constructions is that someone mistook someone else's handwritten <h> for <r>. That would make the top horizontal progression in the CVC table through the four oral vowels for a syllable beginning with /g/ and ending in /k/ read as follows: "Kam = gahk" (rather than gark), "Kem = gake", "Kim = geek", and "Kom = goke". The third English sound equivalent here would be pronounced like the word in English spelled the same way, and the second and fourth English sound equivalents would each end in a silent <e> (Fletcher1890a).

Despite its shortcomings, Fletcher's table reproduced in Tables 4 and 5 shows that by 1890 the Ho-Chunk adapter of the Sac and Fox syllabary had instigated two important innovations to make it more useful for writing his language. He had created a character based on an upper-case handwritten <L> to represent the Ho-Chunk consonant /r/ and one resembling an upper-case handwritten <A> for the consonant /h/. The idea for this <A> character came originally from the Fox, but rather than using it for the consonant /h/, the Fox had put it before the vowel /a/ to represent that vowel when used in the initial position (Walker1996). Further steps toward making the Ho-Chunk syllabary accurately reflect the language can be seen in the writings of Sam Blowsnake and Felix White, Sr., in the twentieth century. While Fletcher printed only a few words in syllabary characters in her 1890 articles, both Blowsnake and White wrote manuscripts which can be examined for the way the syllabary worked in extended discourse.

5 The Blowsnake Syllabary

Table 6: Ho-Chunk syllabary characters used by Sam Blowsnake in 1938 (Susman1939), added to Susman’s (Susman1943) arrangement of Ho-Chunk phonemes.

Ho-Chunk Vowels										
Oral										
a	a									
e	e									
i	i									
o	o									
u	o, u									
Ho-Chunk Consonants										
	(Voiced)		(Voiceless)							
I	A		B		II		III			
stops	b	ℓ	p	ℓʔ	nasals	m	ᵐ	stops	t	tʔ
	g	ᵏ	k	ᵏ, ᵏᵏ		n	ᵑ			ʔ
affricative	ʃ	ʃʃ	č	čʃ	trill	r	ʀ	breath	h	hʔ
spirants	z	ʀ	s	ʀʃ	semi-	w	ʷ			
	ž	ʒ	š	ʒʃ	vowels	y	ʏ			
	ʎ	ʎᵛ	x	ʎʃ						

Table 6 adapts Table 1 by adding the syllabary characters written by Sam Blowsnake in 1938 to Susman’s Ho-Chunk phonemes. We can see in Table 6 that, although Blowsnake still did not differentiate nasalized from oral vowels, he did sometimes use the character <u> for the fifth oral Ho-Chunk vowel /u/. This may have been a recent innovation for him, because he still usually wrote /u/ with an <o> as he did the vowel /o/, conforming most of the time to the four-vowel syllabary systems of the Sac and Fox and of Fletcher’s informant. Blowsnake did not mark glottal stops, but he had a character for every other Ho-Chunk consonant. Along with the symbols for /m/, /n/, /r/, /w/, /y/, /t/ and /h/ seen in Fletcher’s syllabary, he used a regularized system for indicating the paired stops, affricatives, and aspirants that Susman divided into columns A and B of her Category I consonants. He wrote the voiceless consonants in Column B as combinations

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- ni·k'q'k ho·ka·raky'  
ni k'itt do X & Xo.  
child teaching
- 'e'gi 'e·gre'gi wq·k'k'k, wq·k'k'gng'gre, 'ja·sge' wq·k'k'k-'i'regi'ki  
1. e ki the k'ite ki, w ki di ki w ki di ki n k'ite at rke ki di ki i ne ki di.  
and in-the-begin- Indians Indians-these how (men)-live-they-when  
ni·k'q'grig'gixete'ragiki, ho·ka·rakyi'ra'nage, 'e' 'ja·sge' do·we'ja  
2. ni k'itt ki di d ki k'ite ki di do X & Xo ky & n k. e tt rke tto we tt  
child-the-a big-become-when advise-they-and this how in-the-future  
wq·k'k'k-'i'rek'q're'gi'ki, wq·k'k'go'ira pi'q·k'je' 'e·sge' karagi'gure'-  
3. w ki di ki i ne k' 'ki di, w ki di ki i ki ki o tto de rke X & ki ki ri ke  
(men)-live-they-would-when life-the good-make-will thus their-own-to-  
teach-they  
k'q're'gi' 'e·k'ji'ra, wa'q'i'reke, 'dikisa'gonag'i'ra, himagi'ragireke  
4. k'it na ki, tto k'ite & w oy ke de. tthigo X i n k' n di ki m X i ke de.  
would-when at-first do-they-it-is- Lodge-Center-in-Stand point-at-they-  
said the (Fire) it-is-said  
'q·x'i'nira, ru's, 'e·sge' ki·si'reke. ha·ta'ging' 'e'hakika'ra'ki'reke.  
5. o X i ki n'ik foro de rke X i di ke de. & t k'itt & X i X di & de.  
charcoal-the take thus order-they-it to-be-blessed struggle-they-it-  
is-said to-earn (to fast) is-said  
'e·k'ji'ra, xymun'k ha·ta'ging' 'i'regi'ki; wi·ra' ro·'e'jeipa', 'e·'q'q'x'i'  
6. 'e' do to no n'ik & t k'itt tto ke ki. wi & fo tto tto de tto X i tti  
first-the little- to fast-start-they-when Sun-the-Straight- end-very  
(ones) Stand-toward (Noon)  
hi'bi're, 'e·'q'q'x'i' waru'jireke. 'q'q'rai'regi, hi'jai'ra hi'rai'reke.  
7. i ki ke de tto X i tti w fo tto ke de. w fo tto ke ki k'itt & tto X i ke de.  
reach-they end-very eat-they-it is do-they-when more go on-they-it is said  
said  
hahi' ha·pse're'd, ha·ta'ging'ja' hokipi'regi'ki hahge' hi're ha·hie'kahi,  
8. & X i ke k'ite & t k'itt & do X i ki ke ki di & 'e' X i ke & tto X i ke  
reaching day-long fasting-the suffer-they-when to night do-they night-  
every  
hahi' hage'ki'ra'q'ge' n'q'i'reke, nq·ba'hahi'n'q'i-re, 'e'jax'q'  
9. & X i & X i & tto de ke n'q'i-re de. ne l & tto n'q'i-re e tt k'itt  
reaching once sleep-they-it twice- slept-they about  
is said  
m'q'karepan'q'q'q', 'e'ja n'q'i-reke, jo·ba'ha' hakeweh' 'e' n'q'i-res'a'ke.  
10. m'q'ke l tto n'q'i-re de. tto l & tto de ke n'q'i-re de.  
ten-once there somewhere four-times six-times- slept-they-accustomed-  
perhaps to-it is said
1. Syllables omitted by Blow Snake, accidentally.  
2. Phonemically j· can be broken down into q'j·.

Figure 1: Ho-Chunk syllabary text written by Sam Blowsnake in 1938 (Susman1939).

of the characters for the voiced consonants in Column A with the symbol for /h/ (labeled by Susman as “breath”) that the Fletcher syllabary had printed as an <A>. For voiceless /k/, he used two different characters – one of them the upper-case character <K> for a voiced /g/ plus the symbol <A>, and the other a single upper-case <K> written in a slightly different way than the <K> representing /g/. Blowsnake wrote the Sac and Fox symbol <tt> for /j/ rather than the <d> character employed by Fletcher’s informant, and he did not use a wavy-line <m> to indicate a /k/ following a vowel in a CVC syllable. That aspect of the syllabary recorded by Fletcher had apparently been abandoned.

Figure 1 shows a page of a syllabary text written by Blowsnake that Susman appended to the end of her *Winnebago Syllabary* manuscript. It consisted of a description of traditional child-rearing instructions given to boys, entitled “Child Teaching.” Apparently, Blowsnake wrote the syllabary portion of it, and Susman typed the transcription, the English translation, and the two footnotes at the bottom. I have numbered the lines. In this text, we can see that the vowel /a/ was omitted after consonants in Ho-Chunk syllabary writing except when it followed a glottal stop as it did at the end of line 10 in the iterative suffix -s’a. The glottal stop itself was not marked in Blowsnake’s syllabary, but its presence in this morpheme was indicated by the writing out of the usually unmarked vowel character <a>. Blowsnake did not mark glottal stops occurring before other vowels. Fletcher’s informant’s syllabary table listed syllables containing /a/ along with those using the other three marked Ho-Chunk oral vowels. Without the evidence of Ho-Chunk syllabary texts from the nineteenth century, I do not know whether or not the earliest Ho-Chunk letter writers left out the vowel /a/ when writing syllables. The Sac and Fox syllabary most closely resembling the Ho-Chunk one did not omit /a/ or any other vowel, but other early forms of Sac and Fox syllabaries have been recorded, one of which omitted /a/ after a consonant and used a dot to indicate /e/ after a consonant, a raised dot to indicate /i/, and two dots to indicate /o/ (Walker1981).

The lower-case handwritten <r> that Blowsnake used to write the /s/ in -s’a at the end of line 10 in Figure 1 should be a <rA>, but he frequently wrote the voiced rather than the voiceless syllabary characters for voiceless consonants, especially when they were not phrase initial or were part of a consonant cluster. Halfway through line 4, we can see that Blowsnake used his y-shaped syllabary character for the glide sound in the phrase *čiiokisak* (‘center of the lodge’), which he spelled <ttAiyo Ki rAK>. However, in the middle of line 9, he also used this syllabary character for the diphthong in the first syllable of the clause *nqqireže* (‘they slept, it is said’, pronounced like the English word *nigh*), which he spelled

<ny Le de>.

Another characteristic of Blowsnake's syllabary style seen in Figure 1 was his regular insertion of the same vowel between the two consonants of a consonant cluster as the vowel that followed the cluster. If the syllable ended in a consonant, he repeated the vowel after that consonant, too. This can be seen in *wqkšik* ('Indians' or 'people'), the third word in line 1, which he spelled <w KidiKi>. In this word, he omitted, as he often did, the <A> from the symbol standing for /k/. When he did write the <A> to make a consonant voiceless, he sometimes inserted a vowel between the character for the consonant and the <A>. For example, in the middle of line 3, he spelled the morpheme *pīl'u* ('make good') <biAi o>. At the ends of lines 1, 4, 5, 7 and 10, and elsewhere in Figure 1, we can see that Blowsnake employed punctuation in his writing, in that he marked the end of sentences with periods.

In her unpublished analysis of Blowsnake's syllabary text, **Susman1939** came to the conclusion that it employed "a fairly consistent method of representing syllables by symbols derived from English script." However, she noted three inefficiencies:

1. Duplication of symbols for a single sound, most notably the two symbols for /k/.
2. Ambiguity of symbols, such as in the use of <o> for both /o/ and /u/ sounds. She found especially troubling the ambiguity caused by the insertion of extra vowels in CCV and CVC syllables that sometimes made it impossible to tell them apart.
3. Some inconsistency of syllabification.

## 6 The White Syllabary

The syllabary writing system used by Felix White, Sr., shown in Table 7 and Figure 2 was quite similar to that of Sam Blowsnake, but it addressed some of the inefficiencies mentioned by **Susman1939**. When Mr. White first began giving Ho-Chunk language classes at the Little Priest Community College in Winnebago, Nebraska, in the early 1970's, he used the syllabary in teaching the language. He also taught me the syllabary characters in the late 1970's when I expressed an interest in learning Ho-Chunk. He told me that he and his aunt Florence Mann had made several changes to the syllabary, including marking nasalization. He used his nasalization marks fairly often, but not always. They consisted of lines

extending off of the top of vowels to the right. He indicated a nasalized unmarked /a/ by drawing a line from one consonant to the next over the space where /a/ would have appeared had it been marked. (See the second syllable in the first word, *hoočqk*, in line 4 of Figure 2 below.)

Table 7: Ho-Chunk syllabary characters used by Felix White, Sr., in the 1970’s, added to Susman’s (Susman1943) arrangement of Ho-Chunk phonemes.

Ho-Chunk Vowels							
Oral				Nasal			
a	ɑ			ɑ̃	—		
e	ɛ						
i	ɪ			ĩ	ɛ̃		
o	o						
u	o, oo			ũ	õ		

Ho-Chunk Consonants							
(Voiced)				(Voiceless)			
I	A	B		II		III	
stops	b	p		nasals	m	ṁ	stops
	g	k			n	ṅ	t
affricative	ʃ	č		trill	r	ṛ	'
	z	s			w	ṽ	h
spirants	ž	š		semi-vowels	y	ɥ	
	ɣ	x					

Unlike Blowsnake, White used only one character for the consonant /k/, but like Blowsnake, he employed a new symbol, in his case <oo>, to stand for the oral vowel /u/. However, also like Blowsnake, he almost never used it, much more frequently writing <o> for both /o/ and /u/. Figure 2 shows that White marked glottal stops, and that he wrote a more open form of the <A> character standing for /h/ than Blowsnake did. He said that this character was not supposed to represent an <A>, but a star shape. Like Susman, he also called it a “breath” symbol. He wrote the character he used for the semi-vowel /y/, not like Blowsnake’s lower-case English <y>, but more like the Fox symbol recorded by Jones1906 for this phoneme, which looked something like the front part of a number <2>. One case in which White used less regularized syllabary characters than Blowsnake

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- "Body day 4c (action) (into) (distant) (self) (beginning) (Toll/ray) (directional) (process)
- Lo Aho To the thi ni wo Lk Te-e  
rw hābo t'a k'ina wō: rāg dē-ē  
rw=body, hampot'e k'ina wō: rāg dē-ē  
Body whole place direction self article This
1. Noz Toma - (cent) To declarative  
To another without Tell  
2. Ao thol K. [J. Frenchman] Ao K'ini LK cft m.  
Hw:jab ga puigi(qv): ra:k sā:nə  
ho:si
- Leg Four to me told He did (told)
3. Conjunction or stop:  
ski = AND, well -  
8:gi NOUN - (to) (place) number location position (there was)  
4. Ao thak think i cl ett nk. xhi di,  
ho:čang č'i:nāngi zha ē ja nark hi zhi  
winnebago directly across one there (sit) how those comfortable  
Ho:či čin nik la nu:pi: wi xette hi le  
Ao thh thh nika l moki wi Hete, hi le  
Boys Little the two marked Big large did They  
Bia raised
5. Dubitative Supp  
Shke: vi Xeide Hi Le gi: zhi Ho: či čin  
cheto mi. A Hete hi le ki cli, Ao thh thh  
raised did they They did (IE) Boys
6. Nik Nāng: Le, Shkak, Četē:ja A Peitānka Ho  
muk nk La, chakt, thekett etett Lo So  
Little [There here] PLAY(ed) New-where Beginning(s) Fire place again  
Positional
7. gir: ginixi ur: i ne s'ai gi, Ha: ko: Lē: zhān  
ki k'ini oi ne naki, A ko Le cl  
distant around back ground dip make 3rd person past action Behind (passive) time color
8. gir: ginixi ur: i ne s'ai gi, Ha: ko: Lē: zhān  
ki k'ini oi ne naki, A ko Le cl  
outside of dwelling Canig Lo gi wa: I: Le zhi ka ko: Le: zhān  
thak Lo ki wai Le, chik ko Le cl. SAI  
out (clear) definite articles (to) went and passiv Zhi ka Later times  
9. č'i:yo: xu shasha la ho:zi ni ne zhi: ka ko: Lē: zhān  
thh lo ho chl L Ao oi ne, chik ko La  
Dwelling of SNOW BACK dep. in, did They Ph  
Clear Bare area adverb (which) more

Figure 2: Ho-Chunk syllabary text written by Felix White, Sr., in the 1970's (Danker papers).

had to do with the voiced consonant /z/ and the voiceless consonant /s/. White wrote /s/ with the character <d> and /z/ with the character <dA> instead of the other way around.

These and other aspects of the syllabary as written by White can be seen in Figure 2. It is the first page of a transcription White made of an audio tape of a story told by a friend of his named Jim Frenchman. I remember that in English White called this story “The Killing of the Body Outright.” White transcribed the story using the syllabary and annotated it himself based on his studies of linguistics. I found this single page in some of my papers a few years ago and have added the line numbers. Line 6 shows an example of nasalization marked on the second and third syllables of its last word *hočiči*, which means ‘boys’. White followed the practice of appending an <A> to a voiced Category I consonant to make it voiceless more consistently than Blowsnake did, though he did not always do it, and never in the case of /s/. Except in one instance on this manuscript page, White did not insert extra vowels between consonant clusters or after syllable-ending consonants. The exception occurs at the beginning of line 6, where he put an <o> with a nasalization line (standing for /ɤ/) between the consonant cluster beginning the first syllable of the dubitive enclitic *šguni*, which he spelled <dAoko ni>.

In the middle of line 8, in the iterative marker -s’a, we can see that, like Blowsnake, White wrote out the usually unmarked vowel <a> to indicate a glottal stop preceding it, but he also included a mark like an apostrophe for the stop itself. He also used this glottal-stop marker when the glottal stop occurred with vowels other than /a/. White employed his 2-shaped syllabary character for the semi-vowel /y/ where it was appropriate at the beginning of the second syllable of *čiyo*, the first phrase in line 10. However, he did not use it at the beginning of line 9 to represent the diphthong pronounced much like the English word *why* in the second to the last syllable of the clause *čqagrogiwair* (‘they went outside’), as Blowsnake would have done. Instead, White indicated this diphthong by writing out the vowels <a> and <i> and extending a curved line upward from the end of the <i>. In this way, he differentiated the semi-vowel /y/ from a diphthong that sounded nothing like it. Like Blowsnake, White marked the end of sentences in his syllabary writing with periods, but he also used commas to separate clauses within sentences, making the structure of these sentences easier to determine when read. Nonetheless, it remained difficult for the recipients of letters written using the syllabary to always tell how to group syllables into the words their writers intended. White told me that people would puzzle over some parts of a letter they received because of this, but they could usually figure out the correct



words and meanings in the context of the rest of the message.

## 7 Conclusion

Comparing the Ho-Chunk syllabary of Alice Fletcher's unnamed informant with the writings of Sam Blowsnake, and Felix White, Sr. reveals steady progress from the 1880's into the last half of the twentieth century toward correspondence with the phonemic characteristics of the Ho-Chunk language. The users of this writing system would no doubt have continued to refine it had it not become unnecessary for communication between Wisconsin and Nebraska when almost all tribal members learned to speak and write English. Examination of these syllabaries also reveals some instances in which their practitioners deviated in similar ways from strict phonemic fidelity to Ho-Chunk. Perhaps these reoccurring "errors" indicate something about how Ho-Chunk speakers conceptualized the phonemes of their language.

That Fletcher's informant wrote down syllables containing only the four oral vowels /a/, /e/, /i/ and /o/ in his table could be attributed to the influence of the Sac and Fox model from which he worked. However, it could also reflect a perception that the three nasalized Ho-Chunk vowels represented only a subset of their oral counterparts. Of the three syllabary writers, only White decided to mark nasalization. Perhaps there was also a sense that the vowels /o/ and /u/ were related in some way that made their differentiation unnecessary. It is interesting that while Blowsnake and White each developed a new character to represent u as a separate vowel, they almost always conformed in their writing to the pattern of Fletcher's informant by writing down the same character for /u/ as for /o/. Even the word that White used to refer to the syllabary, *ba-be-bi-bo-ra*, is made up of syllables containing only the vowels /a/, /e/, /i/ and /o/, followed by the definite enclitic *ra*.

The manner in which the three syllabary versions examined in this paper handled the voiced and voiceless consonants listed by **Susman1939** under Category I in Table 1 also invites speculation. The Sac and Fox syllabary contained characters for all of the consonants that Susman listed in Categories II and III for Ho-Chunk in Table 1 except for /r/ and the glottal stop, which are not found in the Sac and Fox language, and /h/, which the Sac and Fox syllabary did not mark. Fletcher's informant virtually copied the Sac and Fox syllabary characters for these shared Category II and III phonemes (/m/, /n/, /w/, /y/ and /t/) in his Ho-Chunk syllabary, yet he treated Susman's Category I consonants differently. Sac and Fox shares five of these consonants with Ho-Chunk, all of them voiceless

(/č/, /k/, /p/, /s/ and /š/). Ho-Chunk has, in addition, the voiced counterparts of these consonants (/j/, /g/, /b/, /z/ and /ž/) as well as the voiceless and voiced pair /x/ and /ɣ/. Fletcher's informant, however, did not simply retain in his Ho-Chunk syllabary the five voiceless consonants for which the Sac and Fox had invented syllabary characters. Instead, he kept three of these voiceless consonants (/p/, /s/ and /š/) and added two voiced ones (/j/ and /g/) and the unvoiced /x/. In doing so, he devised a system which included a character for only one of each of the paired Ho-Chunk voiced and voiceless stops, affricatives, and spirants in Category I. I assume that in writing he used the same character for both the voiced and voiceless consonants in a pair. Perhaps we can infer from this that he was aware that these consonants formed linked pairs and thought each pair so closely related that one syllabary character would suffice for both of its parts. This system of having one syllabary symbol stand for two different consonants when they consist of voiced and voiceless pairs was also practiced by the Potawatomi in their Great Lakes Algonquian syllabary. The Potawatomi language has phonemes for all of the voiced and voiceless consonant pairs listed by Susman for Ho-Chunk except for /ɣ/ and /x/. The writers of the Potawatomi syllabary used the character <l> for /b/ and /p/, <s> for /z/ and /s/, <sh> for /ž/ and /š/, <tt> for /j/ and /č/, and <K> for /g/ and /k/. Their language also has a voiced and voiceless pair /d/ and /t/ that they wrote with a <t> (Walker1996).

There can be no doubt that Blowsnake and White knew of the relationship between the paired voiced and voiceless consonants in Ho-Chunk, because of the way they sometimes, at least, wrote them with a character for each voiced consonant to which they added the <A> symbol to indicate its voiceless counterpart. When White started teaching me Ho-Chunk in the 1970's, he had me make a set of flash cards with which to practice recognition that had the syllabary characters on one side and their English equivalents on the other. These cards clearly showed White's syllabary system for marking voiced and voiceless consonants as well the fact that White switched that system around in the case of /z/ and /s/. This reversal appears to be a reversion to the way Fletcher's informant wrote the symbol for /s/ as <r>. In a way, it goes along with Blowsnake's frequent, and White's own occasional, practice of writing voiceless consonants as voiced. This inconsistency seems to indicate a persistent perception, reminiscent of those of Fletcher's informant and the Potawatomi syllabary writers, that paired voiced and voiceless consonants are so closely united with each other that it is not crucial to differentiate them in writing, that they are interchangeable. Perhaps this sense of interchangeability comes from the way that voiceless consonants do sometimes change to voiced ones, and vice-versa, at the intersec-

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tion of morphemes in spoken Ho-Chunk. For example, the voiceless consonant at the end of the word *waač* ('boat') becomes voiced when the definite enclitic *-ra* ('the') is added to it, forming *waaḡra* ('the boat'). Conversely, the voiced consonant at the beginning of the causal suffix *-geḡjinḡ* becomes voiceless when it is added to the clause *hḡwuus*, 'I was dry,' to become *hḡwuuskeḡjinḡ* ('because I was dry') (Lipkind1945).

In their efforts to preserve and teach their language today, the Ho-Chunk in Wisconsin have collaborated with linguists to devise an orthography that is more completely phonemic, more easily printed, and more comprehensible to a wider range of readers than was their handwritten syllabary. However, the native-language syllabary the Ho-Chunk developed and refined from the late nineteenth to the mid twentieth centuries was important. It provided families and friends with a way to communicate and maintain ties between Nebraska and Wisconsin through years of forced separation, persistent poverty, and cultural suppression. It contributed to the Ho-Chunk tribe's survival as a people.

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