

Proceedings of the 42nd and 43rd Siouan and Caddoan Languages Conferences

Held at the Universities of Virginia (42) and Oklahoma (43)

Charlottesville, Virginia & Norman, Oklahoma

May 27–29, 2022 & May 26–28, 2023

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Kasak, Ryan M. & Armik Mirzayan (eds.). 2025. *Proceedings of the 42nd and 43rd Siouan and Caddoan Languages Conferences*. Norman, OK: Siouan and Caddoan Languages Conference.

This title can be downloaded at:

<https://www.siouan.org/proceedings/sclc42-43>

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ISSN: 2641-9904 (digital)

DOI: 10.5281/zenodo.14373785

Typesetting: Ryan Kasak

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Font: Libertinus Serif

Typesetting software: Xe_{La}TeX & Biber

First printing, 12/30/2025

Second printing, 3/30/2026

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Acknowledgments

These *Proceedings* are the direct result of the hard work and passionate interests of the organizers and attendees of the annual Siouan and Caddoan Languages Conference. Armik Mirzayan and Corey Roberts were instrumental to getting the 42nd SCLC up and running. We are also appreciative to the University of Virginia's Anthropology Department and Program in Linguistics for hosting the event. SCLC 42 set the bar for post-COVID lockdown SCLC conferences by offering a hybrid attendance and presentation option as a default option following the online-only option from SCLC 40 and 41. Since video communications platforms like Zoom and Teams have become ubiquitous in this day and age, access to Siouan and Caddoan scholarship has improved and the barrier of travel has been removed for many community members and scholars who have desired access to the information presented at these conferences.

The editors also acknowledge the myriad Indigenous consultants and colleagues who have worked with their own communities, as well as with linguists, anthropologists, and other scholars over the years to promote their languages and preserve records of these languages for posterity. As the linguistic diversity of this world diminishes, their labor allows a reservoir of knowledge to exist for future generations. These *Proceedings* are published through Open Access to ensure that members of Indigenous communities can repatriate their languages without having to pay third parties for access.

We hope that this conference continues to work towards making information on Siouan and Caddoan languages free and available to all, especially to the Indigenous nations and their citizens, whom we all owe a great debt for sharing their language, their stories, and their energy with us.

Preface

The *Proceedings of the Siouan and Caddoan Languages Conference* started out in 2018 as an idea for an annual periodical to provide an outlet for written works on Siouan and Caddoan languages. I volunteered to edit these papers and ensure that there was a digital home for them, and I was thrilled that there has been interest in them ever since. The time pressures of writing a monograph and my career at the University of Oklahoma have caused the *Proceedings* to take a back seat until recently, which has caused them to become a biannual phenomenon.

The post-COVID academic scene is different, and the SCLC itself is somewhat different as well. In the past, even when a hybrid conference was possible (e.g., in 2017, when Jill Greer hosted SCLC 37 in Joplin, MO at MSSU), in-person attendance was the norm. Since 2022, we have seen a significant minority—if not outright majority—of talks feature presenters who are speaking remotely. On the one hand, the social aspect of the SCLC has always been something that attendees have looked forward to. Being able to meet for a meal or talk about what projects we are working on over coffee during a break have yielded many novel ideas for future papers or joint presentations. Likewise, being able to further discuss a paper with its presenter(s) after the conference had concluded for the evening allowed the spread of ideas beyond what we could expect of a 20-minute talk and the following 10-minute discussion period. The rise of remote attendance has certainly affected the overall feel of the conference for attendees.

On the other hand, travel can be expensive and time-consuming, especially when there are those whose positions do not afford them the ability to take off and come see or present at the conference in person. Indigenous nations and their employees can often get excusals from work to come attend conferences nearby, but costs can be prohibitive for those who do not have the institutional or independent means to fund them. The ubiquity of Zoom and applications like it have allowed those who might not otherwise be able to attend a chance at participating in the conference. Living in Oklahoma, I know all too well that weather events in late Spring and early Summer can wreck havoc on the best laid plans, so I have availed myself of Zoom frequently these days as well. It seems that a hybrid presentation style is here to stay.

Regardless of in-person or remote, the quality of papers presented at SCLC has not changed. My co-editor Armik Mirzayan and I both have been impressed with the breadth of the works that are present in this volume. Multiple branches of the Siouan language family are represented here. The Dakotan subgroup is represented here by Jaker, Peters & Caŋ Wiyuhūga, who discuss their efforts towards the Sisseton Wahpeton Dakota Lexicon project, while Collette looks at deixis of motion verbs in Nakoda (a.k.a., Assiniboine). The Hoocąk-Chiwere subgroup has Hall & Shanley investigate allophones of /r/ in Hoocąk (a.k.a., Ho-Chunk) and Greer continues to look at how bears, men, and women are portrayed in Jiwere (a.k.a., Otoe) and Baxoje (a.k.a., Ioway). Carmody looks at Mandan and how a treebank can assist in syntactic and narrative analyses. The Ohio Valley Siouan branch is awash in revitalization papers by Richardson & Kaufman and Suttun & Kaufman. The Caddoan language family has representation in Hancock-Mac Tamhis's look at comparative Caddoan and Iroquoian morphology. Overall, we are excited to see that there are so many scholars engaged in the study of these languages.

As we look to future conferences, I hope that we all seek outlets for publication for the

works presented at the SCLC. One project that I have been involved in is going through all the programs from past SCLCs for which I can find information and posting those programs to the Siouan and Caddoan Languages Conference website.¹ There, we can see that there have been so many talks on topics ranging from theoretical linguistics to lexicography. We have no resources beyond what might lie in someone's personal collection, and many of those early talks are lost to us. Some of those ideas are worth re-exploring, but it is unclear how much future work will be re-inventing the wheel, so to speak. For this reason, I reiterate my hope that presenters of the SCLC find somewhere to publish their work. The *Proceedings of the Siouan and Caddoan Languages Conference* will stand as an option for those who wish to submit their work for publication, and I welcome future discussions on how to better use the *Proceedings* as a vehicle for research and exposition of Siouan and Caddoan languages.

Ryan M. Kasak
Oklahoma City, Oklahoma
December 2025

¹This website can be found at <http://siouan.org/about>.

Sisseton Wahpeton Dakota Lexicon

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Abstract: This paper will describe the Sisseton Wahpeton Dakota Lexicon project, currently underway at Sisseton Wahpeton College. We will describe the motivations for undertaking this project, the sources of data for this lexicon, its main features, the procedure by which the lexicon is being compiled, and the expected timeline of completion. We will also describe a possible future direction of this project, which is an online dictionary with clickable sound files.

Keywords: Dakota, language documentation, lexicography

1. Introduction

In this paper we will describe a work in progress, the Sisseton Wahpeton Dakota Lexicon, underway at Sisseton Wahpeton College, which is located on the Lake Traverse Reservation in northeastern South Dakota. The dictionary is primarily in the Sisiṭuŋwaŋ (Sisseton) dialect, which is the main dialect still spoken today on the reservation, although we also include some words in the Wahpeṭuŋwaŋ (Wahpeton) dialect as well. This dictionary is the first dictionary to focus primarily on the Sisiṭuŋwaŋ dialect, and is also the largest, with approximately 9,500 entries. The dictionary is both Dakota-to-English and English-to-Dakota.

This dictionary is over 20 years in the making. Most of the data came from work with Sisseton Wahpeton Oyate elders at the Dakota Language Institute. More recently, the editors (Alessandro Jaker, Akiš'a Peters and Kaleb Caŋ Wiyuhūga), working at Sisseton Wahpeton College, re-checked the words with elders and entered them into an electronic database. We wish to thank the many people who worked on this dictionary over the years. In the remainder of this presentation, we will provide background on the Sisseton Wahpeton Oyate (§2), describe the unique features of the Sisiṭuŋwaŋ (Sisseton) dialect (§3), describe the motivations for this project (§4), the sources of data (§5), the software and procedures used (§6), the estimated timeline for completion (§7), and some possible future directions (§8).

2. Background on the Sisseton Wahpeton Oyate

The Sisseton Wahpeton Oyate represent two of the seven bands of the Očeti Šakowiŋ, the Great Sioux Nation. These are the Sisiṭuŋwaŋ (or, more properly, Skiskituŋwaŋ), the dwellers on the



Jaker, Alessandro, Akiš'a Peters, & Kaleb Caŋ Wiyuhūga. 2025. Sisseton Wahpeton Dakota Lexicon. In Ryan M. Kasak & Armik Mirzayan (eds.), *Proceedings of the 42nd and 43rd Siouan and Caddoan Language Conferences*, 1–8. Norman, OK: Siouan and Caddoan Languages Conference. DOI: [10.5281/zenodo.14372954](https://doi.org/10.5281/zenodo.14372954)

isthmus, and the Wahpetunwan, the dwellers amongst the leaves. The name Sisitunwan is a contracted form of Skiskitunwan, which comes from *skiskita* ‘isthmus’, referring to the strip of land between Big Stone Lake and Lake Traverse. Some tribal members are also descendants of the Wahpekute (leaf-shooters) and Pabaksa (cut-head) bands. The Sisseton Wahpeton Oyate live on the Lake Traverse Reservation in northeastern South Dakota, as shown in Figure 1. The Lake Traverse Reservation has seven districts: Old Agency, Long Hollow, Lake Traverse, Big Coulee, Enemy Swim, Buffalo Lake, and Heipa.

Some famous chiefs of the Sisseton Wahpeton Oyate include Wakiŋyaŋ Sapa (Black Thunder), Kaŋgi (Raven), Šuŋka Toic’iye (Dog Paints Himself Blue), and Taŋaŋka Náziŋ (Standing Buffalo).

3. Unique features of Sisitunwan dialect

The Sisseton Wahpeton Ohate are primarily descended from two different bands, and Sisitunwan and the Wahpetunwan, and historically each of these bands had a different dialect. However, on the Lake Traverse Reservation today, it is the Sisitunwan dialect which is still in widespread use, and so this is the dialect in which most of the entries in this dictionary are written. In the past, it has been commonplace to divide Dakota dialects into three groups: d-dialect, l-dialect, and n-dialect, referred to as “Dakota”, “Lakota”, and “Nakota”. We now understand that this is an oversimplification, and that so-called “Nakota” people actually identify as Dakota, and the Nakoda (Assiniboine) language spoken in Canada is a separate language (Ullrich 2022:1-2). Nevertheless, to the extent that there is such a thing as an “n-dialect” of Dakota, it would actually be the Sisitunwan dialect. This is illustrated in Table 1, where Sisitunwan regularly exhibits *n* where Títunwan (Lakota) exhibits *l* and Bdewaŋaŋtunwan (Santee) Dakota exhibits *d*.

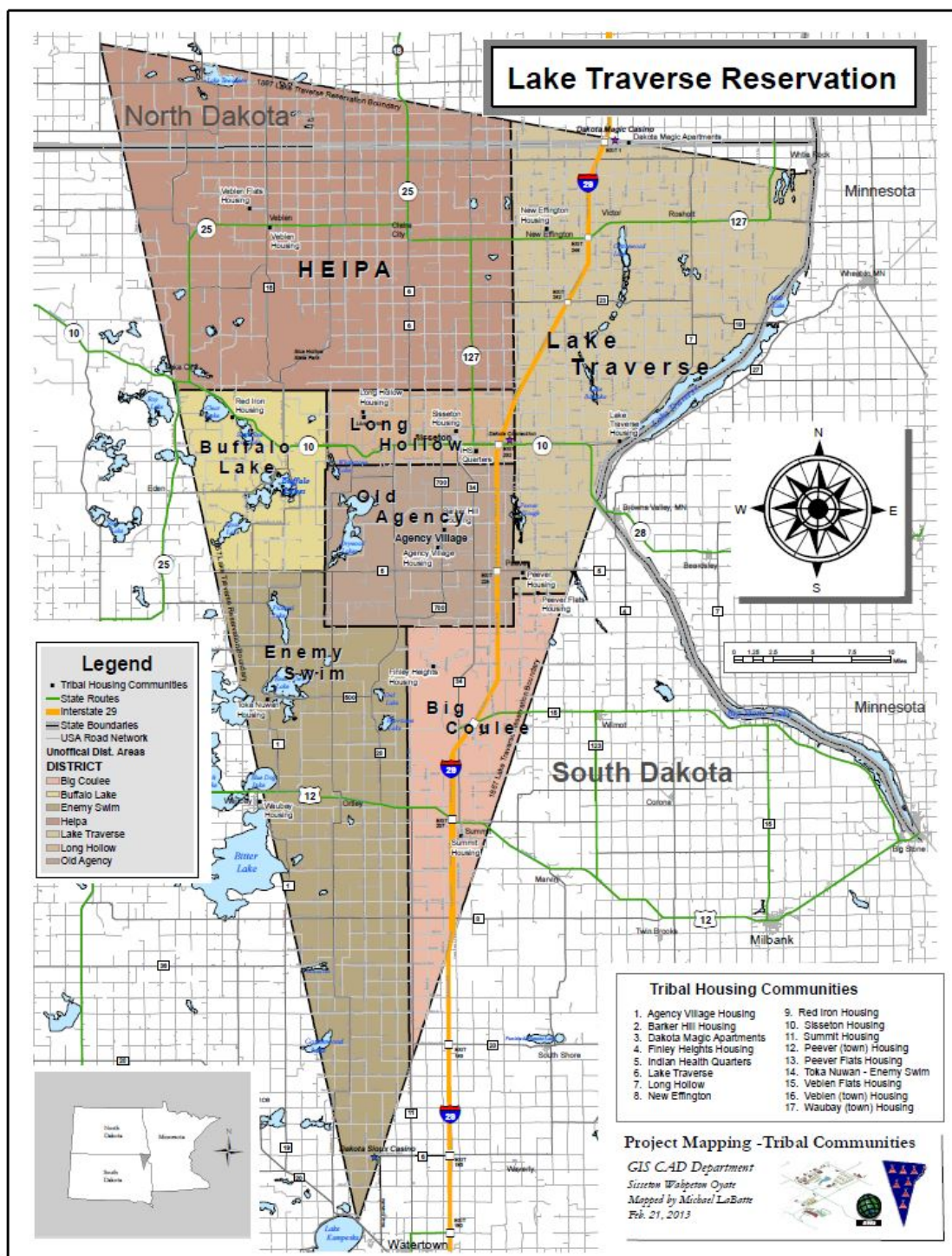
Table 1: Sisitunwan dialect sound correspondences

Títunwan (Lakota)	Sisitunwan	Bdewaŋaŋtunwan (Santee)	English gloss
<i>hoksila</i>	<i>hoksina</i>	<i>hoksidaŋ</i>	‘boy’
<i>wakpala</i>	<i>wakpana</i>	<i>wakpadaŋ</i>	‘creek’
<i>tuŋkašila</i>	<i>tuŋkašina</i>	<i>tuŋkašidaŋ</i>	‘grandfather’
<i>ziŋtkala</i>	<i>zitkaŋna</i>	<i>zitkadaŋ</i>	‘bird’
<i>cík’ala</i>	<i>cík’ana</i>	<i>cík’adaŋ</i>	‘small’

Sources: Riggs (1992 [1890]), Buechel & Manhart (2008), Ullrich (2022)

Most of the words in our dictionary—probably about 95%—are in the Sisitunwan dialect, and exhibit *n* in suffix position, where other dialects exhibit *d* or *l*. A minority of words are in the Wahpetunwan dialect, which were collected from elders who spoke this dialect. Wahpetunwan is more similar to Bdewaŋaŋtunwan or Santee, in that the diminutive suffix is *d*. For example, this dictionary also includes the words *hoksíd* ‘child’ and *aŋuyapi bdáskada* ‘pita bread, pancake’, which come from the Wahpetunwan dialect. In any case, both dialects are very similar and

¹This map of the Lake Traverse Reservation was created by the SWO GIS Department.

Figure 1: Map of Lake Traverse Reservation¹

mutually intelligible, and differ from each other primarily in the reflex of this one phoneme, as described above.

4. Motivations for this project

This dictionary project is over 20 years in the making. The main source of data for this project (see §5) is a database of Dakota words and sentences compiled by staff of the Dakota Language Institute (DLI), working with Sisseton Wahpeton Oyate elders. When DLI staff worked with elders to collect Dakota words and phrases, their goal was to collect all of the words and phrases that would be necessary to become fluent in the language. These included words and phrases pertaining to both traditional and modern concepts. In addition, they wanted to collect words and phrases in the Sisiṭuṇwaṇ dialect, which has been poorly represented in other sources.

In general, Dakota words referring to traditional concepts will be very short and simple in Dakota, sometimes with a lengthy translation in English (because no exact equivalent of the concept exists in English). For modern words, the situation is often reversed: something which can be described with a very simple word or phrase in English may require a rather lengthy and complex phrase in Dakota. This happens most often for concepts that did not exist traditionally as part of Dakota culture. Some examples are given in Tables 2 and 3 below.

Table 2: Examples of traditional Dakota words

Dakota word	English translation
<i>wiṇyaṇ</i>	‘woman’
<i>wiçašta</i>	‘man’
<i>pte</i>	‘cattle, buffalo’
<i>siṅkpe</i>	‘muskrat’
<i>peži</i>	‘grass’

Table 3: Examples of modern concepts expressed in Dakota

English concept	Dakota translation	Literal English translation
coupon	<i>yuhukub kaṇsu</i>	‘plum seed (card) with which it goes down (i.e. the price)’
computer	<i>wisdodye óhnakapi koka</i>	‘box in which knowledge is put inside’
light bulb	<i>wakaṇhdi izaṇzaṇ</i>	‘lightning jar’
dentist	<i>hi piya wiçašta</i>	‘man who fixes teeth’
spaghetti	<i>aḡuyapai dodo wiṇaṇ s’e</i>	‘squishy bread shaped like ropes’

The word for ‘coupon’ refers to plum seeds because, prior to the introduction of playing cards, Dakota people used to play games with plum seeds. Later this term was applied to playing cards, and eventually all cards, including coupons. While the Dakota phrases in Table 3 are more complex than their English translations, they are nevertheless valuable for an important reason. When Dakota people first encountered modern European items and concepts, they described them using the set of Dakota words and concepts that they already had, and these Dakota concepts are reflected in the Dakota translations in Table 3. Thus, Dakota phrases such as in Table 3 provide an indigenous perspective on modern Euro-American culture, and provide an example of how modern Euro-American concepts can be re-conceptualized through an indigenous lens.

As mentioned earlier, the staff who collected the data used in this dictionary wanted to provide learners with the full set of words and phrases they would need to talk about all concepts in Dakota, both traditional and modern. Accordingly, this dictionary contains extensive vocabulary in the following areas: food, clothing, commerce, technology, healthcare, tribal government, and education. Examples of words from each of these categories are given in Tables 4–10 below.

Table 4: Dakota words for food

Dakota	English
<i>sáḡayutapi</i>	‘watermelon’
<i>sáḡayutapi yuhihi</i>	‘cucumber’
<i>bdo stan</i>	‘eggplant’
<i>aḡuyapi bdáska tákuku akaṣtanpi</i>	‘pizza’
<i>aḡuyapi dodo wíḡan s’e</i>	‘spaghetti’

Table 5: Dakota words for clothing

Dakota	English
<i>saksanica</i>	‘dress’
<i>saksanica śnaśna</i>	‘jingle dress’
<i>uḡzoḡe</i>	‘pants’
<i>waboḡan</i>	‘bustle’
<i>wiḡauḡpi</i>	‘shirt’

Table 6: Dakota words for commerce

Dakota	English
<i>yuhukub ḡanṣu</i>	‘coupon’
<i>ḡanṣu uḡ oicazopi</i>	‘credit card’
<i>wóyawa ḡanṣu icazo</i>	‘credit card number’
<i>kaśpapi</i>	‘dime’
<i>kaśpapina</i>	‘coins, change’

Table 7: Dakota words for technology

Dakota	English
<i>wísdodye óhnakapi ḡoka</i>	‘computer’
<i>wísdodye óhnakapi ḡoka owas iḡoyagyapi</i>	‘computer network’
<i>uḡ mas’aḡapi</i>	‘telephone’
<i>mas’aḡena</i>	‘cell phone’
<i>wáḡanḡdi iḡanḡan</i>	‘light bulb’

Table 8: Dakota words for healthcare

Dakota	English
<i>pežuta wiçašta</i>	'doctor'
<i>hi piya wiçašta / hi piya wiŋyaŋ</i>	'dentist'
<i>wayazaŋka awaŋyaŋke</i>	'nurse'
<i>pežuta wóyute</i>	'vitamins'
<i>çaŋhaŋpi wóyazaŋ</i>	'diabetes'

Table 9: Dakota words for tribal government

Dakota	English
<i>oyate iŋaŋçaŋ</i>	'tribal chairman'
<i>oyate iŋaŋçaŋ okiye</i>	'tribal vice chairman'
<i>oyate oiŋaŋçaŋ oyaŋke</i>	'tribal council chambers'
<i>wiçayaçopi</i>	'tribal court'
<i>ŋicaŋe iyukcaŋpi</i>	'housing development'

Table 10: Dakota words for education

Dakota	English
<i>wóuŋspe wiçakiye</i>	'teacher'
<i>wayawa wiçakiye</i>	'teaching assistant'
<i>wóuŋspe iŋaŋçaŋ</i>	'principal'
<i>wóuŋspe</i>	'lesson'
<i>wówapi ŋípi</i>	'library'

The word for 'eggplant' in Table 4, *bdo stan*, is particularly interesting. One might question first of all why a word for 'eggplant' belongs in a dictionary of a Native American language, since eggplants are not native to North America. However, the staff that compiled the database upon which this dictionary is based were very much interested in promoting healthy eating habits, to prevent diabetes. For this reason, we have names of all the fruits and vegetables that you will find in the supermarket. Also, the name, which literally means 'purple potato', reflects a sophisticated knowledge of botany: eggplants and potatoes actually belong to the same family, even though they superficially bear little resemblance to each other. Dakota elders could only have known this from their own experience growing garden vegetables. Therefore, the name *bdo stan* is a name which reflects both indigenous values and indigenous knowledge.

5. Sources of data

The main source of data for this dictionary is a Microsoft Excel database of over 22,000 entries, compiled by staff of the Dakota Language Institute (DLI). This database contains both single words, in English and Dakota, as well as example sentences. The main difficulty with this

database is that it was written in the Riggs orthography, which does not mark stress and aspiration, whereas our dictionary is in the University of Minnesota orthography, which does. In order to determine aspiration and stress for the many entries which were unmarked, we did three things. First, we asked our elders at our weekly elders' sessions. Secondly, we consulted other Dakota and Lakota dictionaries, such as the New Lakota Dictionary (Ullrich 2022) and Buechel & Manhart (2008). Finally, two of the three editors, Akiš'a Peters and Kaleb Caŋ Wiyuhuga, are also fluent Dakota speakers, and Kaleb and Akiš'a also contributed their own best judgement to whether a consonant is aspirated and where stress is located.

There are also a couple of additional sources of data for this dictionary. One source is a collection of stories by Phyllis Redday, Clifford Canku (Maŋo Waŋakpe) and David Seaboy (Íŋkpa Dúta). These stories were first transcribed using ELAN (Max Planck Institute for Psycholinguistics 2023, Lausberg & Sloetjes 2009), and then the transcript was entered into FLEx (SIL International 2023), from which any new words found in these stories were entered into the dictionary. Approximately 700 words came from these stories. Another source of data was the *English to Dakota Dictionary* previously published in 2015, compiled by Eric L. DuMarce and edited by Tammy DeCoteau. Approximately 2,000 entries came from this previous dictionary. The remaining ~6,800 entries all came from the DLI database, as described above.

6. Software and procedures

In producing this dictionary, we have used two software programs: ELAN (Eudico Linguistic Annotator) (Max Planck Institute for Psycholinguistics 2023), and FLEx (Fieldworks Language Explorer) (SIL International 2023). Words and sentences from the DLI database were entered directly into FLEx. Elders' stories, by Phyllis Redday, Clifford Canku, and Danny Seaboy, were first transcribed in ELAN and then entered into FLEx.

7. Timeline for completion

We are currently in the final editing phases. A paper version of the dictionary will be published by Sisseton Wahpeton Oyate Publishing in late 2024.

8. Future directions

We are already working on an electronic version of the dictionary, which will have clickable sound files. We are currently recording sound files, which we will later cut up and attach back into FLEx. From there, an online version can be produced quite easily. We expect that the only version will be available in 2025.

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Creating a Python treebank for Mandan

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Abstract: There have been multiple past projects within the field of Computational Linguistics that involve tagging corpora with their appropriate parts of speech. The data from these corpora have led to the creation of treebanks which provide a visual representation of the syntactic structures of sentences and allow for mass analysis. This project provides an outlook into the efforts of beginning a treebank for Mandan, a Siouan language from North Dakota. The goal of this paper is to highlight the process of beginning a treebank for Mandan and to determine what work will be necessary for this project to continue in the future.

Keywords: Mandan, treebanks, computational linguistics, Python, Natural Language Toolkit

1. Introduction

The analysis of language has been a course of study that has been undertaken since records of linguistic differences. Languages that have become globally mainstream such as English have been able to produce mass amounts of media formats that can be utilized for such a study. There are millions of speakers of these languages and many have long written histories that can provide additional scholastic input into how they function. A pitfall of such large data quantities, however, is the management and time commitments necessary in order to analyze it all.

Computers have allowed linguists to better study the desired aspects of language through digital analysis. The transition from physical forms of media to electronic corpora allowed for energy to be dedicated towards the analysis of evidence and the forming of generalizations rather than the collection of examples (Taylor 2020). The first of these electronic corpora to be created for the English language was Brown Corpus of Standard American English, compiled by W.N. Francis and H. Kucera. The Brown Corpus, published in 1964 contained over 1 million words in English that were divided into over 500 texts that each contained around 2,000 words (Francis & Kucera 1979). The specific parts of speech of each word and grammatical punctuation marks were tagged so the material could be better digitally analyzed.

The creation of the Brown corpus spurred the progress and creation of multiple following projects including the London–Lund corpus that began fourteen years after the Brown Corpus and the well known Lancaster–Oslo–Bergen corpus (McEnery & Wilson 2001). Each of these corpora included their own specific formatting of tagging with differing levels of specificity. The continuation of improving electronic corpora led to the creation of the Penn Treebank project, which had the goal of evaluating the automated extraction of information from naturally occurring materials (Marcus, Santorini & Marcinkiewicz 1993). The Penn treebank operated for 8 years (1989–1996) and produced over 7 million words that were tagged for part of speech (Taylor, Marcus & Santorini 2003). The Penn treebank consists of 48 total tags, of which 9 are used to



Carmody, Maeve. 2025. Creating a Python treebank for Mandan. In Ryan M. Kasak & Armik Mirzayan (eds.), *Proceedings of the 42nd and 43rd Siouan and Caddoan Language Conferences*, 9–22. Norman, OK: Siouan and Caddoan Languages Conference. DOI: [10.5281/zenodo.14373737](https://doi.org/10.5281/zenodo.14373737)

indicate grammatical punctuation. With its focus on generating syntactic structure, the goal of this minimal tag set is to eliminate redundancy and remove tags that would not affect the way in which the syntactic structuring would be output (Taylor, Marcus & Santorini 2003).

Figure 1: Penn Treebank Example

```
( (S
  (NP Martin Marietta Corp.)
  was
  (VP given
    (NP a
      $ 29.9
      million Air Force contract
      (PP for
        (NP low-altitude navigation
          and
          targeting equipment))))))
.)
```

As seen in Figure 1, the output of POS tags results in a bracketed structure that aligns with constituency. Similar to the initial stage of associating each word to the correct part of speech, this output is automatically generated and then corrected by hand. The time saved by the automatic bracketing process allows for more trees to be created and corrected in a similar time frame than what would be possible if the entire process was to be done by hand. This same process exhibited in the Penn treebank is also applicable to languages other than English and many corpora such as the Universal Dependencies Japanese treebank (Tanaka et al. 2016) and even treebanks that contain multiple languages like the Turkish–German Code Switching treebank (Çetinoğlu & Çöltekin 2023) have followed this process. Seeing the varieties of applications of treebank creation for global languages, an overlooked application of this process can be found in lesser-known, endangered, and dormant languages for the purposes of study and conservation.

Mandan is a Siouan language originating from the North Dakota region of the United States (Mandan Language Project 2016). Several past researchers have visited the Mandan in the early and middle 20th century when there was still a robust community of native speakers. These researchers collected narratives totaling about 500 pages that covered a wide range of topics from religious beliefs to daily life (Kennard 1936; Hollow 1973a,b). While limited in number, these recorded narratives represent the majority of all written Mandan material in the world.

Creating a treebank for this language would allow for future researchers or learners to be able to easily parse through the written corpora to discover aspects about the language such as word frequency and the variations in sentence structure. The treebank will be able to capture the potential complexity of sentences and provide examples of grammatical structures for learners given the lack of native speakers available to perform acceptability judgments on newly produced sentences.

2. Research Question

The primary question that this research is addressing is whether the tags and methods developed for the Penn treebank Corpus will be satisfactory enough to complete the same process for the Mandan language, or alterations to the system and/or additional tags are necessary. Given Mandan's subject-object-verb (SOV) word ordering and distinct morphosyntax, can the tags established in the Penn treebank capture the correct meanings and nuances in the same way that they do for English? If they fail to accomplish this, what is a way in which these meanings can be better represented in a tag system? How can the Mandan morphosyntactic structure be best represented in a treebank so that it can be utilized as a reference material for Mandan syntax in the future?

This paper aims to address these questions, as well as document the process involved in creating a treebank from scratch utilizing corpus materials with typed glosses. It also serves as a descriptive, feasible beginning into the creation of a Mandan specific treebank for Natural Language processing purposes, as well as a documentation of the limitations and issues encountered when starting this process.

3. Methodology

3.1. Preparation for treebank creation

The creation of a treebank involves utilizing previously part-of-speech (POS) tagged material. In many of the past treebank creations, the process of creating a treebank could be automated due to the POS annotations already being complete. Much of the Penn treebank was created in this manner, and being in possession of the tagged corpora prior to treebank creation helped facilitate the process.

No extensive work has been done in making Mandan corpus material ready for computational input past creating portable document formats (.pdf) of Hollow's typewritten and hand annotated documents. The Mandan data utilized for the treebanks presented in this paper was not yet previously annotated or POS tagged save the English gloss that was provided underneath the transcriptions and certain corrections and checks that Hollow included by writing over the typewritten material with ink. An excerpt from Hollow (Hollow 1973a,b) is shown in Figure 2.

Initial observations of each page within the corpus presented an issue regarding the diacritics and text formatting within the Mandan materials. While the English glosses were easily searchable and able to be represented by Unicode text formatting, the corresponding Mandan data was unable to be transferred in the same manner. The Python programming language utilizes Unicode Standard for representing characters within strings (Kuchling 2023), and the lack of Mandan's ability to comply with said text formatting was an issue that I had to resolve when working on this project.

If further progress in this project is to be made, a more effective way of capturing the true orthographic representation of Mandan within Unicode text formatting will need to arise. As it stands, for the purposes of this project, I chose to simply type the Mandan data manually into Python without the diacritic markers and any letter that was represented as a superscript within Hollow's work, was kept but typed within the same line space as all of the other letters within

Figure 2: Sample Text from Hollow Box 3

FIRST CREATOR AND LONE MAN ARGUE

Told by Annie Eagle

✓ kinŭmąksi	✓ éheni	✓ numák máx ^a ną	✓ íwahek ^a naše	✓ wákiną'ní	✓ éwereho's
First Creator	and	Lone Man	what I know	I to tell	I want to.
✓ numák máx ^a ną	✓ éheni	✓ kinŭmąksi	✓ íkirok ^e reromąko's	✓ kot ^e we	
Lone Man	and	First Creator	argued, (about)	which one	
✓ óratore	✓ hakték	✓ ątakat	✓ ró	✓ wakxŭhki	✓ ó'irahekat
was older.	So,	"All right	here	if I lay down	you would know it."
✓ éheni	✓ kinŭmąksi	✓ kxŭhomąko's	✓ numák máx ^a ną	✓ mí'sak	✓ wá'ąska
he said and	First Creator	layed down.	Lone Man:	"Myself	I that way

the strings. An example of this process is shown below:

- (1) numák máx^a ną → numak maxana

3.2. Parameters

When approaching this project, a determination had to be made for how the final product of each tree in the treebank should appear when drawn using the NLTK package in Python. During this project, I was assisted by Dr. Ryan Kasak from the University of Oklahoma and a decision was made to style the treebank in this project in a similar manner to the one he chose in his unpublished manuscript titled *Creating a Treebank for Mandan* (Kasak 2014).

Other treebank projects, as mentioned previously have been afforded years of development time to meticulously work through all of the required steps of creating their respective products. Given that the time frame for this project was one collegiate semester and the amount of sentences needing to be tagged within Hollow's Box 3 source, the decision was made to limit the scope of the project to the first three stories. A further complication when it came to tagging the Mandan corpus material was the allowance that Mandan has for very long sentences that created trees that became complex in structure very quickly. Another issue arose with the structuring of the quoted material within the corpus for the same reason as the sentence length problem in that it created very unwieldy trees.

Mandan is a poly-synthetic subject-object-verb (SOV) ordered language with a head-final ordering and a robust adherence to this structure (Kasak 2014). Certain problems arise given this

structure that influence the way in which sentences must be POS tagged. In certain sentences, like the one presented in the example below, certain verbs can be omitted at the end of a sentence and is left to be assumed by the listener.

- (2) *Nųmąk Mąx^anq “Mįʔshak wáʔqská wáharaxiʔsh”*
 man one 1POS.PRO NEG.that.way 1.AGT-CAUS-NEG-IND.M
 ‘Lone Man said, “I won’t do it that way.”’

A highly pervasive issue when it came to tagging and creating the correct syntactic structuring was the allowance of overt nominal dropping which created sentences that were only comprised of verbs with the included subjects and objects being represented by a PRO that is not realized in the phonology. An example of this PRO structuring can be seen in the analysis of sentence 6 from the first story in Hollow Box 3 provided later in this paper.

3.3. Procedures

Previous work has already been conducted and recorded on how to create a treebank corpus using the Python programming language. Given that the Penn treebank project has already created a set of POS tags for corpus material, I chose to utilize the same tags for ease of use when creating the code for the treebank in Python. The Penn treebank had already reduced its tag set from previous corpora to remove redundancy and its basis for many other linguistic treebank projects made it a strong choice to base this work off of.

Figure 3: Penn Treebank Tags

CC	Coordinating conj.	TO	infinitival <i>to</i>
CD	Cardinal number	UH	Interjection
DT	Determiner	VB	Verb, base form
EX	Existential there	VBD	Verb, past tense
FW	Foreign word	VBG	Verb, gerund/present pple
IN	Preposition	VCN	Verb, past participle
JJ	Adjective	VBP	Verb, non-3rd ps. sg. present
JJR	Adjective, comparative	VBZ	Verb, 3rd ps. sg. present
JJS	Adjective, superlative	WDT	Wh-determiner
LS	List item marker	WP	Wh-pronoun
MD	Modal	WP\$	Possessive <i>wh</i> -pronoun
NN	Noun, singular or mass	WRB	Wh-adverb
NNS	Noun, plural	#	Pound sign
NNP	Proper noun, singular	\$	Dollar sign
NNPS	Proper noun, plural	.	Sentence-final punctuation
PDT	Predeterminer	,	Comma
POS	Possessive ending	:	Colon, semi-colon
PRP	Personal pronoun	(	Left bracket character
PP\$	Possessive pronoun	)	Right bracket character
RB	Adverb	"	Straight double quote
RBR	Adverb, comparative	'	Left open single quote
RBS	Adverb, superlative	"	Left open double quote
RP	Particle	'	Right close single quote
SYM	Symbol	"	Right close double quote

3.3.1. Tagging the Corpus

The first step that led to the creation of the presented Mandan treebank was to manually add the part of speech tags to the Hollow corpus. This was achieved by downloading the PDF formatted corpus into the GoodNotes digital application (Time Base Technology Limited 2023) which allowed for manual, handwritten annotations in a digital format. After the documents were downloaded, I divided each story into its respective sentences for easier visualization and tagging.

For the process of tagging, I utilized the Penn treebank tag set, as seen in Figure 3 to assign the most appropriate part of speech to each individual word on a sentence by sentence basis (Jurafsky & Martin 2024). In analyzing the Mandan data within the corpus, slight changes to the Penn tag set were necessary to capture Mandan's SOV word ordering and specific morphological aspects. The tag PP, which in the Penn tag set stands for prepositional phrase, had to be changed to stand for postpositional phrase in Mandan. The Penn tag set also accounts for tense morphology within the available tags for verbs. Given my utilization of the English glosses to determine the most accurate part of speech for each respective word, I chose to utilize only the VBD (verb, past tense) and the VBN (verb, past participle) tags. In certain circumstances it became difficult to determine which verbal tag should be used so I chose to narrow the system even further by associating the VBN and VBD tags with specific morphemic endings in the Mandan data. Given its prevalence in word final verbs, it was decided that the verbs within the corpus ending with the $-o's$ morpheme were to receive the VBN tag along with morpheme-less verbs and the verbs that ended in the $-ni$ morpheme received the VBD tag. More refinement to these associations will be necessary for further analysis and re-tagging in future applications of this research.

The tags were handwritten above the Mandan transcription in black ink and certain words and phrases were highlighted in differentiating colors which were dependent on the surety of the assigned tag's correct association (Santorini 1990). Once each word was assigned a hand-annotated POS tag, I worked with Dr. Ryan Kasak to verify the accuracy of my associations before beginning the process of associating each word to a tag within Python. Each word was given an individual line where it was tagged with the predetermined part of speech. Once each word in the sentence had received a tag, I went through and established the correct syntactic embedding so that the constituents would align with the correct word ordering and sister alignment within the generated syntax code output and drawn tree.

3.3.2. Creating trees from tagged sentences

Once the manual tagging of each sentence from the first three stories contained in Hollow were complete, I utilized the source-code editor Visual Studio Code to create a Python file for each individual sentence. Visual Studio Code was selected for its abilities in debugging code, syntax highlighting, and its assistance in intelligent code completion. Each sentence file name was labeled with a citation, source number, and respective sentence number identification in the manner of `hollow_1_01.py` with sequential ordering so that each sentence could be easily distinguished and referred to in the corpus material.

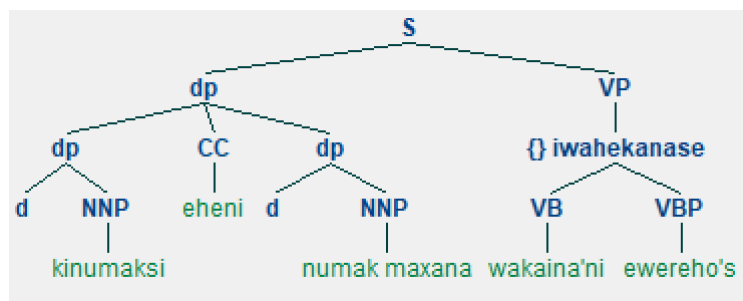
Once the tagging and structuring of each sentence was complete, I ran the code through the debugging system built into Visual Studio Code to double check for syntax errors that would prevent the creation of the intended trees. After the removal of any present errors, the code was run using the NLTK (Bird, Loper & Klein 2024) command `print(tree)` function to create the

desired embedded tree structure of the sentence. The results of this process are shown in (3) which showcases the code run from the file `hollow_1_01.py`:

```
(3) (S
      (dp
        (dp (d)(NNP kinumaksi))
          (CC eheni)
            (dp (d)(NNP numak maxana))))
      (VP
        (dp (d)(NN iwahekanase))
          (VB wakaina'ni)
            (VBP ewereho's))))
```

Once this code result was generated, the outputs were checked over to reconfirm that the sentence tree contained the correct constituent ordering and internal structuring. The Python code for the sentence was then run through the NLTK `.draw` function to create an image output of the sentence's associated syntax tree. This form of code output can be seen in Figure 4 utilizing the same `hollow_1_01.py` file as the previous example for comparison.

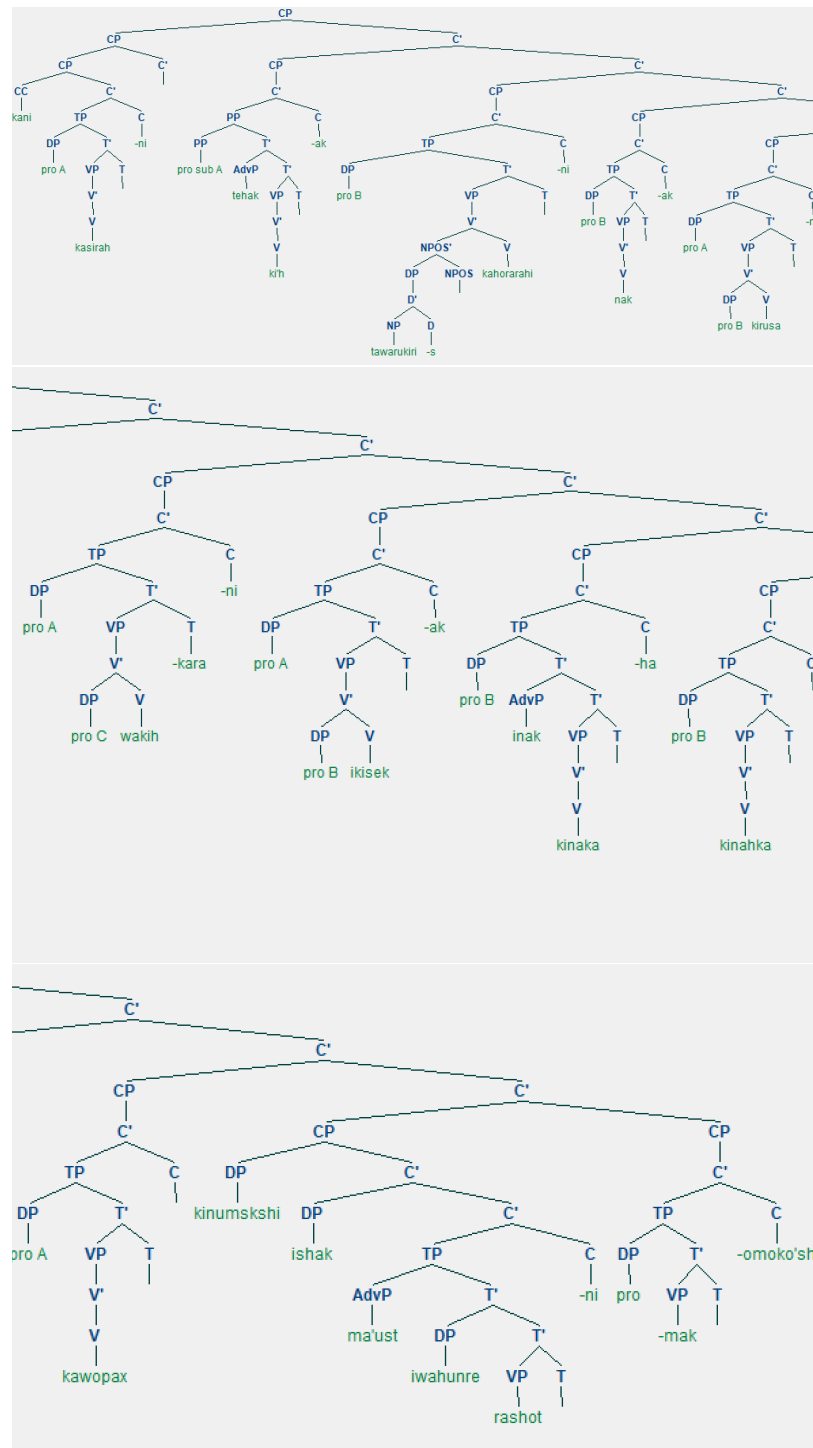
Figure 4: Drawn Result of Example 3



This generated tree is now a product that can be utilized for future syntactic study of Mandan and is a product that can be retrieved from a larger treebank. This product can be taken even further, however for a more accurate representation of Mandan's unique morphosyntactic structure that was previously mentioned. In order to emphasize this improvement that can be made in future research, I took sentence 6 from Hollow's first story and analyzed it using the same procedure as the other sentences received, but with a highly specific association of POS tags to the morphemic components within the sentence instead of the more generalized words. Given the amount of necessary tags for this specific example, the code for this sentence can be seen in Appendix A. The visual drawn tree has been included in Figure 5 in order to highlight the differences in syntactic accuracy when tagging Mandan POS on a word or morpheme basis. The generated tree for this sentence is extremely large in size and is highly specific in its syntactic representations.

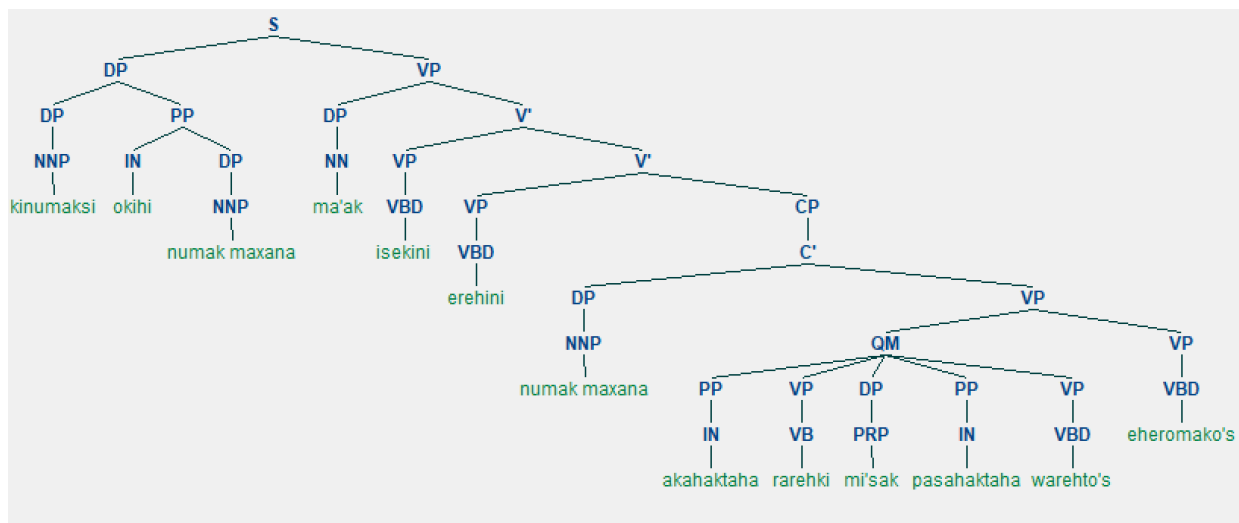
It becomes clear that if this project is to continue in the future, then the morphemic analysis of Mandan would be the superior choice when tagging the materials in order to convey the accurate syntactic relationships of the parts of speech. This analysis also allows specific aspects of Mandan's SOV behavior to be better accounted for such as the PRO drop discussed earlier in this paper. One concern with a tree generation of this size is its usefulness in representing true

Figure 5: Generated Tree for Morphosyntactic tagging



spoken speech when studied in the future. The contained PRO drops in this tree are not phonologically realized, so while syntactically correct, it does not adhere to Mandan phonology. An optimal solution would have sentences be represented by a tree that are built upon syntactic structure and another built upon realized phonology, though this does extend the work load and

Figure 6: Flat Structure of Quoted Material



time commitment necessary for this project.

While not included as an example within this paper, another specific formatting of the Mandan tree creation that was performed in this procedure was the creation of a new quoted materials tag in addition to the existing Penn treebank tags. The code for the sentence example that included this new tag can also be seen in Appendix A. The quoted material tag was applied in two separate instances to compare its potential usage in the context of this research. The first application applied as a mother node in the syntax tree to all of the POS tagged words within that portion of the entire sentence being analyzed leading to a section of the syntax tree being rendered as flat and this can be seen in Figure 4 which is a rendering of the file `hollow_2_01.py`. The other application involved labeling the quoted material as such, but maintaining the node structuring of the overall sentence leading to the drawn tree looking no different from its counterpart in which the new tag was not applied. If future work is done on revising the quoted material tag's internal node structuring in the syntax tree generation, then it can serve as a highly useful search specification when analyzing the Mandan language.

4. Results

The resulting completed trees, as the project stands now, are quite few in number given the amount of work needed in order to begin this process. The necessary hand annotations for POS tags due to Unicode limitations and corrections based on limited Mandan resources to check made the initial set-up portion of this project the most time consuming aspect of this research.

The significant products that have come out of this research are the discovery of the helpful tag additions that can be made to the Penn tag set when handling Mandan data, and the beginnings of a treebank that can be built upon in further research endeavors. As more tagged data is created and added in the future, more trees can be created and the ones presented in this paper can become more refined. This paper answers the question as to whether the creation of a treebank for Mandan is possible given the current set of tags utilized in corpus POS tagging and serves as a basis of continuing this process.

5. Discussion and Conclusion

During the course of this project, I have documented the processes that I took in annotating Mandan data with its respective parts of speech, creating tags for each association within the NLTK toolkit in Python, and generating workable syntax trees for the beginning of a treebank. I have also documented some of the issues that I stumbled across in completing these steps. The Penn tag set that was created is based primarily upon a one word to one tag ration as this is how English parts of speech are typically assigned. The Mandan morphosyntax makes this association too broad in comparison. There was also a need to add an additional quoted material (QM) tag in this project for ease of organization and representation of the verbal syntactic relationships in the sentences that contained quotes.

As previously mentioned, the majority of treebank projects have been conducted in a team format with multiple contributors and the available option of referencing past corpora, work, and treebanks for their target language, much like the process of the Penn treebank building upon prior efforts. These projects not only have access to broad resources, but are also typically undergone by native speakers of the language being worked with.

Compared to other treebank projects based on languages such as English or even other SOV based languages like Japanese, Mandan is extremely limited in its available resources. As of the year 2016, Mandan has been classified as a dormant language with no native speakers and there are only a few written corpora of the language of which the Hollow (1973a,b) source used in this project is one.

Future steps from this point include the continuation of the tagging process for the rest of Hollow's corpora as well as remaining Mandan sources. Once more data has been glossed and POS tagged, then the continuation of building this treebank can be easily facilitated to create a more in depth reference for this language in the future. Work must also be done to adapt the Mandan data into a format that makes working with NLTK and Python easier and more accurate to the true realization of Mandan data.

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Appendix A: Python code for (3) and Figure 4

```
from nltk.tree import *
dp1 = Tree('dp', [Tree('d', []), Tree('NNP', ['kinumaksi'])])
dp2 = Tree('dp', [Tree('d', []), Tree('NNP', ['numak maxana'])])
dp3 = Tree('dp', [dp1, Tree('CC', ['eheni']), dp2])
dp4 = Tree('dp', [Tree('d', []), Tree('NN', ['iwahekanase'])])
vp1 = Tree('VP', [Tree('VB', ['wakaina'ni']), Tree('VBP', ['ewereho's'])])
vp2 = Tree('VP', [Tree(dp4, vp1)])
tree = Tree('S', [dp3, vp2])
print(tree)
tree.draw()
```

Appendix B: Python code for Figure 5

```

from nltk.tree import *
v1 = Tree("V'", [Tree('V', ['kasirah'])])
vp1 = Tree('VP', [v1])
tbar1 = Tree("T'", [vp1, Tree("T", [' '])])
tp1 = Tree("TP", [Tree('DP', ['pro A']), tbar1])
c1 = Tree("C'", [tp1, Tree("C", ['-ni'])])
cp2 = Tree('CP', [Tree("CC", ['kani']), c1])
cp1 = Tree('CP', [cp2, Tree("C'", [' '])]) #first CP block
v2 = Tree("V'", [Tree("V", ["ki'h"])])
vp2 = Tree('VP', [v2])
t3 = Tree("T'", [vp2, Tree("T", [' '])])
t2 = Tree("T'", [Tree('AdvP', ['tehak']), t3])
pp1 = Tree('PP', [Tree('PP', ['pro sub A']), t2])
c2 = Tree("C'", [pp1, Tree('C', ['-ak'])])
cp2 = Tree("CP", [c2]) #end of the second CP block
d1 = Tree("D'", [Tree('NP', ['tawarukiri']), Tree("D", ['-s'])])
dp1 = Tree("DP", [d1])
npos1 = Tree("NPOS'", [dp1, Tree('NPOS', [' '])])
v3 = Tree("V'", [npos1, Tree('V', ['kahorarahi'])])
vp3 = Tree("VP", [v3])
t4 = Tree("T'", [vp3, Tree('T', [' '])])
tp2 = Tree("TP", [Tree("DP", ['pro B']), t4])
c4 = Tree("C'", [tp2, Tree('C', ["-ni"])])
cp3 = Tree("CP", [c4])
v4 = Tree("V'", [Tree("V", ['nak'])])
vp4 = Tree("VP", [v4])
t5 = Tree("T'", [vp4, Tree("T", [' '])])
tp3 = Tree('TP', [Tree('DP', ['pro B']), t5])
c5 = Tree("C'", [tp3, Tree('C', ['-ak'])])
cp4 = Tree("CP", [c5]) #end of CP4
v5 = Tree("V'", [Tree('DP', ['pro B']), Tree('V', ['kirusa'])])
vp5 = Tree('VP', [v5])
t6 = Tree("T'", [vp5, Tree('T', [' '])])
tp4 = Tree("TP", [Tree('DP', ['pro A']), t6])
c6 = Tree("C'", [tp4, Tree('C', ['-ni'])])
cp5 = Tree("CP", [c6]) #end of cp5
v6 = Tree("V'", [Tree('DP', ['pro C']), Tree('V', ['wakih'])])
vp6 = Tree('VP', [v6])
t7 = Tree("T'", [vp6, Tree('T', ['-kara'])])
tp5 = Tree("TP", [Tree('DP', ['pro A']), t7])
c7 = Tree("C'", [tp5, Tree('C', ['-ni'])])
cp6 = Tree("CP", [c7]) #end cp6
v7 = Tree("V'", [Tree('DP', ['pro B']), Tree('V', ['ikisek'])])
vp7 = Tree('VP', [v7])
t8 = Tree("T'", [vp7, Tree('T', [' '])])

```

```

tp6 = Tree("TP", [Tree('DP', ['pro A']), t8])
c8 = Tree("C'", [tp6, Tree('C', ['-ak'])])
cp7 = Tree('CP', [c8]) #end cp7
v8 = Tree("V'", [Tree('V', ['kinaka'])])
vp8 = Tree("VP", [v8])
t10 = Tree("T'", [vp8, Tree('T', [' '])])
t9 = Tree("T'", [Tree('AdvP', ['inak']), t10])
tp7 = Tree("TP", [Tree('DP', ['pro B']), t9])
c9 = Tree("C'", [tp7, Tree('C', ['-ha'])])
cp8 = Tree('CP', [c9]) #end of cp8
v9 = Tree("V'", [Tree("V", ['kinahka'])])
vp9 = Tree("VP", [v9])
t9 = Tree("T'", [vp9, Tree('T', [' '])])
tp8 = Tree("TP", [Tree('DP', ['pro B']), t9])
c10 = Tree("C'", [tp8, Tree('C', [' '])])
cp9 = Tree("CP", [c10]) #end cp9
v11 = Tree("V'", [Tree('V', ['kawopax'])])
vp10 = Tree("VP", [v11])
t11 = Tree("T'", [vp10, Tree('T', [' '])])
tp9 = Tree("TP", [Tree('DP', ['pro A']), t11])
c11 = Tree("C'", [tp9, Tree("C", [' '])])
cp10 = Tree('CP', [c11]) #cp10
t13 = Tree("T'", [Tree('VP', ['rashot']), Tree("T", [' '])])
t12 = Tree("T'", [Tree('DP', ['iwahunre']), t13])
tp10 = Tree("TP", [Tree('AdvP', ["ma'ust"]), t12])
c13= Tree("C'", [tp10, Tree("C", ['-ni'])])
c12 = Tree("C'", [Tree('DP', ['ishak']), c13])
cp11 = Tree("CP", [Tree('DP', ['kinumskshi']), c12]) # end cp11
t14 = Tree("T'", [Tree('VP', ['-mak']), Tree('T', [' '])])
tp11 = Tree("TP", [Tree('DP', ['pro']), t14])
c14 = Tree("C'", [tp11, Tree('C', ["-omoko'sh"])])
cp12 = Tree("CP", [c14]) #end cp12
c14 = Tree("C'", [cp11, cp12])
c15 = Tree("C'", [cp10, c14])
c16 = Tree("C'", [cp9, c15])
c17 = Tree("C'", [cp8, c16])
c18 = Tree("C'", [cp7, c17])
c19 = Tree("C'", [cp6, c18])
c20 = Tree("C'", [cp5, c19])
c21 = Tree("C'", [cp4, c20])
c22 = Tree("C'", [cp3, c21])
c23 = Tree("C'", [cp2, c22])
cp13 = Tree('CP', [cp1, c23])
s=cp13
tree = s
print(tree)
tree.draw()

```

Appendix C: Python code for Figure 6

```

from nltk.tree import *
dp1 = Tree('DP', [Tree('NNP', ['kinumaksi'])])
dp2 = Tree('DP', [Tree('NNP', ['numak maxana'])])
dp3 = Tree('DP', [Tree('NN', ['ma'ak'])])
pp1 = Tree('PP', [Tree('IN', ['okihi']), dp2])
pp2 = Tree('PP', [Tree('IN', ['akahaktaha'])])
pp3 = Tree('PP', [Tree('IN', ['pasahaktaha'])])
vp1 = Tree('VP', [Tree('VBD', ['isekini'])])
vp2 = Tree('VP', [Tree('VBD', ['erehini'])])
vp3 = Tree('VP', [Tree('VB', ['rarehki'])])
vp4 = Tree('VP', [Tree('VBD', ['warehto's'])])
vp5 = Tree('VP', [Tree('VBD', ['eheromako's'])])
prp1 = Tree('DP', [Tree('PRP', ['mi'sak'])])
# lone man 'quoted material' said
#making 'quoted material' below:
qm1 = Tree('QM', [pp2, vp3, prp1, pp3, vp4])
dp4 = Tree('DP', [dp1, pp1])
vp6 = Tree('VP', [qm1, vp5])
c1 = Tree("C'", [dp2, vp6])
cp1 = Tree('CP', [c1])
v1 = Tree("V'", [vp2, cp1])
v2 = Tree("V'", [vp1, v1])
vp7 = Tree('VP', [dp3, v2])
s = Tree('S', [dp4, vp7])
tree = s
print(tree)
tree.draw()

```

Deictic motion verbs in a Nakoda migration story^{*}

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Abstract: This article deals with linguistic and ethnohistorical aspects of a traditional Nakoda migration story. First, I show that the narrator uses direct and indirect quotative verbs to encode her second and third hand sources respectively. Second, I analyse how the rich system of deictic motion verbs is used to express the movements of the protagonists and to switch the point of views as the story develops. Lastly, I provide a comparative overview with other North American cultures where the crossing-the-water/ice mythological motif occurs and propose that the story could be a brief account, or the frame of a much larger story, of a past migration from the Great Lakes area westwards.

Keywords: evidentiality, deictic verbs, migration story, crossing of the water/ice motif.

1. Introduction

In June 2019 the late Wilma Kennedy (1923–2020), one of the last fluent speakers of Nakoda, narrated a migration story of her people that she had heard from her grandmother. The story depicts the group's hardships in their former homeland and their journey across a strait of islands into a bountiful country that could sustain them. After a while the group decides to go back to their original homeland, only to find out that the water had risen and submerged the strait, forcing them to stay in the new land they found. Although the story is quite short (totalling 20 sentences) it has linguistic and folkloric points of interest since this story presents striking parallels with other known North America emergence myths and migration stories.

This article unfolds as follows. In §2, I present the story in question in Nakoda with an interlinear English translation, along with the narrative sequences. I discuss the use of hearsay quotative particles to frame the story as a third hand narrative, a grammatical strategy that usually occurs with historical narratives (i.e. oral history) and not with legends or episode involving the cultural trickster. In §3, I shed some light on how the narrator exploits the complex lexical system of deictic motion verbs (of going, coming, arriving and departing) to anchor the changing

^{*}This paper was presented at the 42nd Siouan and Caddoan Language Conference held in Charlottesville (Virginia) in 2022. I thank the participants who offered many useful comments. I wish to thank Wilma Kennedy who shared her beautiful language and stories with me, as well as Tom Shawl for his help in suggesting some corrections of the original version that was initially published (but unanalysed and untranslated) in Collette, McArthur & Kennedy (2019). I also thank Linda Cumberland who provided useful comments on an earlier draft of this paper. Lastly, I want Dr. Kevin Brousseau for proofreading this article and also for his thoughtful comments. All errors of analysis and/or interpretation are mine.



perspectives of the main character through their journey across the land and their attempt to go back home. Lastly, §4 is a comparative overview of the literature on migration stories and specifically those involving the common crossing-of-water/ice mythological motif in Siouan, Algonquian and Iroquoian cultures. I then highlight the potential ethnohistorical relevance of and speculate that it may depict a westward prehistorical migration from the Great Lakes area.

2. Narrative structure of the story

The migration story under study was recorded in Carry The Kettle, Saskatchewan, the largest Nakoda speaking community in Canada. Nakoda, also known as “Assiniboine”, is an endangered Siouan language spoken in southern Saskatchewan, Canada and in northern Montana, United States. It is closely related to Stoney, as well as Dakota and Lakota. Mrs. Kennedy first narrated the story in English¹ and then in Nakoda. According to her the story depicted the migration of the Nakoda people out of Siberia, across the Beringia strait into North America a few thousand years ago.²

Before analysing the linguistic features of the story, it is important to have a general idea of the story’s narrative structure. Table 1 is an analysis of the story based on Freytag’s well-known narrative model (1900): exposition, inciting incident, rising action, climax, falling action, and denouement. The verses or lines are indicated in the left column.

Table 1: Translation and structure analysis

Line	Nakoda text	Structure
1	<i>Wanágaš én, néci ʔhíbi.</i> ³ long.ago in over.here we.arrive.here “Long ago, we arrived over here from there.”	synopsis
2	<i>Mniwája agásam-padahq ʔhíbic’éhq” eyá.</i> sea cross.from.other.side.to.here we.arrive.here she.said ‘We arrived here from there across the sea,’ she said.’	synopsis

¹The English version runs as follows: “She told us, she said, uh, that her people were starving with famine, I guess. And some men went out hunting. So, she said, these men went hunting and they were gone for a few days and they came back. They were excited because they found land. Beautiful land, with lot of wild animals so they can survive. So, I guess, they decided they’re going to move, she said. So, they all moved she said and came across an island, a strait, I guess, and came back to this country, she said. And it was just beautiful, she said, everything was... she said, fruits, animals, she said. It was just a great place, so they stayed, I guess, and some of them got lonesome and wanted to go back. So, I guess, they got all ready and then they were gone to go back and they couldn’t find the strait. There was nothing, no connection between Siberia and this other land they just found. So, they never went back. So, she said, this is where we stayed.”

²I first transcribed the story myself, then Mrs. Kennedy and I listened to it very slowly adding minor corrections to my transcription. Later, Tom Shawl, a fluent Nakoda language speaker, re-listened to the recording and verified my transcription and proposed some minor corrections that were added to the final version presented here.

³The story is presented in the Fort Belknap Orthography which is largely phonemic except for plain stops *p*, *t*, *k* and the affricate *c* [tʃ] which are written as voiced *b*, *d*, *g* and *j* in initial and intervocalic positions.

Line	Nakoda text	Structure
3	“Néciya [FS] žéci ʉk’ʉbi žéci waná dágu, dágu nówa over.here over.there we.are over.there now things things all.these ʉyúhabišj cén waná ʉk’ʉšibjкта”, she said eyá.⁴ we.do.not.have and now we.are.poor she said she.says “Over here [FS] we lived over there, and now we lacked everything and because of this we were poor,” she said.’	exposition
4	“Žécen, dóna iyápe [FS] watápe nówa iyápe yábi nówa. so.then many hunt ... bison.hunters all hunt they.go all “And then many hunters [FS] ... all of the buffalo hunters left from here.’	inciting incident
5	Makóce wqží iyéyabi cén. land one they.find thus ‘And they found land thus.’	inciting incident
6	Ēn makóce gacédu wóguýena,” gáya. in land it.is.over.there nice they.say ‘The land there was beautiful,” they say.’	rising action
7	Yigáhq gáhqn. they.remain for.a.time ‘They remained there for a time.’	rising action
8	Dágu nówa, wóskuya kó óda cén dágu nówa ĩš. things all berries too it.is.a.lot and things all too ‘Everything, including berries, was found in quantities.’	rising action
9	ʉs dgyq ʉbjkte nówa iyéyabi cén. because.of well they.will.live all they.find thus ‘Because of this boutifulness, they would live well and find everything they needed.’	rising action
10	Hibi⁵ hq’uka,⁶ dókiyam padáhq makóce dókiyam they.arrive.here and.thus from.source other.side land from.source mniwája agásam. sea other.side ‘They arrived here from there thus, from across the land and the sea.’	repeats the synopsis

⁴The subordinating particle *cén* is versatile and difficult to translate, meaning ‘so then; because’ as in line 3. In sentence final position, however, *cén* is not translated by ‘because’ since it seems to link a sequence of events (lines 5, 8–9) (Cumberland 2005:418).

⁵Here Mrs. Kennedy produced the vertitive or return verb *kibi* ‘they arrive back there’. However, upon hearing the recording she corrected herself and said she wanted to say *hibi* ‘they arrive here from there’, so I integrated the corrections here.

⁶The coordinator *hq’uka* is loosely translated as ‘and (then)’ or ‘when’. In narratives it can occur in sentence-final position followed by a pause or between two constituents. *Hq’uka* seems cognate with Dakota *uŋkán* ‘and (and so; and then); because’ and Lakota *yunkáŋ* ‘and (then), but (then)’, a coordinator that can also indicate non-probability or temporal cohesion between two events (Pustet 2013:156–162). In accordance with Dahlstrom (1982:75), Lakota

Line	Nakoda text	Structure
11	<i>Žécen wicáhtiyq gáyabi cén: “Owá néci híbi hq’uka,</i> so.then old.men they.say thus all here they.arrive.here and.so <i>miní né, miní agásam”.</i> water this water other.side ‘And so, what the elders said is, “They have all arrived around here from there as a group, from the other side of the water.”’	repeats the synopsis
12	<i>Dágu makóce amáni híbi žé.</i> thing land walking.on they.arrive.here that ‘They arrived here from there traveling through some land.’	repeats the synopsis
13	<i>Owá néci makóce nén iyógipiyq tibiha.</i> all here land here happily they.are.living ‘All lived happily over here on the land.’	rising action
14	<i>Abá knábi cijábi cén.</i> some go.back they.want so ‘Some wanted to go back home.’	climax
15	<i>Owá knábikta škábi hq’uka iyáyabi gáya.</i> all go.back they.feel.like and.so they.depart they.say ‘They all felt like going back home, and so they left from here, they said.’	climax
16	<i>Dókiyota híbi žé, žécedu iyúhana miní hq’uka.</i> direction.from they.arrive that it.is.there all water thus ‘In the direction they had arrived here from there, there was a lot of water.’	falling action
17	<i>Nená makóce wídayagen yigé žé, iyúhana mnimáhen</i> these land island.like they.are.located that all water.in <i>iyáyahq cén.</i> it.is.gone thus ‘The strait (lit. these island-like land) that was there was all gone under water.’	falling action
18	<i>Dóken tiyám kníbi žécen.</i> where at.home they.arrive.back and.then ‘And then, they arrived back from where they had left from.’	falling action
19	<i>“Waná gáhqan néci, néci úbi,” gáya.</i> now it.is.a.time here here they.live they.say ‘Now we have lived around here for some time,” they say.’	denouement

yunkán can also mean that a surprising, unexpected event is going to happen. The use of sentence-final *hq’uka* in line 16 seems to convey this meaning.

Line	Nakoda text	Structure
20	“Žéci [FS] žehádahq néci ɣk'úbi ɣká” eyá. over.there [FS] from.that.time here we.live thus she.says “From then on, we lived here thus,” she said.’	denouement

Lines 1 and 2 (repeated in lines 10–12) constitute a synopsis of the story, where the second-hand narrator speaks in the name of the Nakoda people, hence the use of the 1st person plural inflection *ɣ-...-bi*. Line 3 (which is also in the 1st person plural) is the exposition of the problem (poverty, lack of food) that needs to be solved by migrating. Lines 4 and 5 are the inciting incident: new land has been found by the hunters. Lines 6, 7, 8, 9 and 13 constitute the rising action: the story is being built up and the bountifulness of the new country is depicted. Lines 14–15 constitute the climax of the story since homesickness arises as the major obstacle which drives them to return home. Lines 16 to 18 depict the falling action, the moment of suspense where the trek of the group towards their original homeland is halted by the rising water. Lastly, lines 19 and 20 constitute the denouement where the intrigue finally ends as the group returns back to where they had left in the new land. As we will see in §3 the switch between two sets of distinct deictic verbs of motion—in lines 16 and 18—marks a turning point in the story since it signals that the group now considers their new homeland as their permanent base.

Before analysing the story, I present a few features of Nakoda grammar. Nakoda verbs are obligatorily inflected for person and number (for animate subjects only), polarity, grammatical aspect and modality, but not tense. Hence Nakoda is a tenseless language like other Siouan languages; the temporal occurrence of an event may be expressed by temporal adverbs or post-clitics, but is not obligatory. What is important in Nakoda is the coding of the grammatical category of aspect or the manner in which an action extends over time. This is expressed by verbal enclitics that indicate the punctual, continuative, durative, and habitual aspects. Verbs are also marked for epistemic modality—the speaker’s attitude towards what s/he is saying or the possibility that something (a proposition) will happen—with the enclitic *-ktA* ‘potential mood’.⁷ Other post-verbal grammatical particles also express deontic modality which indicate whether someone is able obligated to do something or not. Some particles also indicate evidentiality or the source of knowledge of the speaker (Cumberland 2005:330–334). The interplay between modality and evidentiality, and whether or not evidentiality is a grammatical category on its own, is a complex and controversial subject that will not be addressed here.

In Nakoda the source of a verb unmarked for evidentiality is generally interpreted as direct eyewitness. On the other hand, when a speaker’s knowledge is a second-hand source, two particles can be used. *Hystá* (which does not occur in the migration story) is a post-verbal hearsay particle used to indicate that the speaker has no firsthand knowledge of the events in question. It is translated as ‘so they say’ or ‘it is said’. Another option is to use speech verbs that express the source of knowledge: *eyÁ* ‘s/he says’ is a direct quotative verb (inflected as *epá* ‘I say’, *ehá* ‘you say’) and it is used with first person plural inflection, while *gáyA* ‘s/he/they said’ (along with *gáyabi* ‘they said’) is an indirect quotative or reportative verb formed with the

⁷Some words that end *a* or *q* may change to *e* or *i* when followed by certain suffixes, enclitics, demonstratives, verbs, or particles that trigger ablaut. This process is indicated by capitalized letters A or Ȧ in the Nakoda citation form. Two very common ablauting elements include the negative enclitic *-ṣ̌i* that triggers e-ablaut (e.g. *wódA* > *wódeṣ̌i* ‘s/he does not eat’) and the potential enclitic *-ktA* that triggers i-ablaut (e.g. *wódA* > *wódi̇kta* ‘s/he will/can eat’).

distal demonstrative *gá* and *eyÁ*. Following Cumberland (2005:204), an indirect quote (as in “It rains”, they said, he said) is different from a report (where only the message is being conveyed). Cumberland (2005:330) notes that when *gáyA* is used as an evidential particle, it is translated as ‘they said’ regardless of its 3rd person singular morphology.

The use of *eyÁ* ‘she said’ for the second-hand source (Mrs. Kennedy’s grandmother, in lines 2, 3, and 20) and *gáyA* ‘they said’ for the third hand source (the chain of elders who passed down the story to her grandmother in the first place, in lines 6, 11, and 15) contribute to differentiate and layer the sources of evidence from the most remote one to the contemporary second-hand source. Evidentiality has often been analyzed as a deictic system where an evidential marker indexes information to a source and an interpreter of that source (i.e. the speaker or narrator) (cf. Jakobson 1990[1957]). These hearsay quotative verbs have a deictic formation since *gáyA* is built with the distal demonstrative *gá* used to refer to entities that are far away or out of sight, while *eyÁ* is not built with a demonstrative. More recent studies (cf. Hill & Irvine 1993) have highlighted the fact that evidential systems are built-in the cultural and moral systems. It is hardly conceivable in Nakoda culture that this migration story be told without indicating the source, but here note that the English version has only second-hand hearsay verbs “she said”, while the Nakoda version has both direct second-hand and indirect third hand quotes “they said”. For instance, the use of the indirect quotative *gáyabi* (in line 8), suggests a quote that Mrs. Kennedy’s grandmother heard, or that the dissemination of the story—from the original eyewitness—has been passed down up to the present. Since one cannot know the identity of this third hand source, it is left to interpretation by the listener. Therefore, the remoteness (or recentness) is, in a sense, co-constructed via the interaction between the storyteller and the listener.

In sum, the interplay of two evidential hearsay verbs give a temporal depth to the story and make it less vulnerable to challenge. The evidentials also classify the genre of the story as oral history, which Echo-Hawk (2000:270) defines not as the testimony of direct witnesses of historical facts, but as oral tradition or “verbal memoirs that firsthand observers have passed along to others”.⁸ A myth would not have required the use of evidential hearsay verbs.

3. Deictic motion verbs

3.1. Form and meaning

Siouan languages have an elaborate system of coming and going verbs (cf. Taylor 1976 for a comparative study across the Siouan family; Hopkins 1990 on Chiwere; Osswald & Van Valin 2022 on Lakota). The Nakoda system is based on four basic monomorphemic verbs and eight derived or compounded verbs. These four basic verbs can be classified along two dimensions:

⁸Oral traditions have not received as much attention in American anthropology and history as oral history, and the use of oral traditions in scientific archaeology and historiography remains controversial and often polarized by two extreme positions (see esp. Kurkiala 2002 on the opposing views concerning Lakota claims to the Black Hills). On the one hand, there is an academic tradition going back to the 19th century that discards oral traditions as a source of reliable archaeological data (cf. Lowie 1915, 1917; Mason 2000), while on the other hand some Indigenous scholars and spiritual leaders insist on a reading of oral traditions as literal attestation of remote events (Kurkiala 2002:449–451). The middle ground position follows the scientific method of inquiry by seeking external corroboration of events encoded in oral history in the fields of historical linguistics, archaeology, and ethnohistory (cf. Buffalohead 2004 and Echo-Hawk 2000:272).

each verb expresses either a movement of PROGRESS or ARRIVAL and either a movement TOWARDS the speaker or AWAY from the speaker (Cumberland 2005:285; Taylor 1976:288. The following data are adapted from Collette & Kennedy (2023):

Table 2: Verbs of PROGRESS and ARRIVAL

<i>ú</i>	‘s/he comes here from there’
<i>hí</i>	‘s/he arrives here from there’
<i>yÁ</i>	‘s/he goes there from here; s/he departed from here’
<i>í</i>	‘s/he arrives there from here’

The second set of verbs expresses the notion of RETURN. These verbs are derived with the vertitive or “return” prefix *ki-* (with an allomorph *k-* voiced as *g-* before a vowel at the beginning of a word) to indicate return to a starting point. According to Taylor (1976:288-289), the basic verb *ú* is regular, but the other basic verbs require morphophonemic variants. First, the initial consonants in *hí* and *yÁ* switch to *n* when preceded by the vertitive prefix. Second, *í* is preceded by an underlying aspirate *h* (*k-hí* spelled ⟨kí⟩) and if this was not the case, then the vertitive would be voiced (***gí*).

Table 3: Verbs of RETURN

<i>g-ú</i>	‘s/he comes back here’
<i>k-ní</i>	‘s/he arrives back here; returns, comes home’
<i>k-nÁ</i>	‘s/he goes, returns there from here; returns back to where s/he is from’
<i>h-í</i>	‘s/he arrives back there (after leaving); returns back to where s/he is from’

Lastly, the third set of verbs expresses the notion of DEPARTURE and show unique properties cross-linguistically (according to Bourdin 2022:107) since they are compounds (or in one case a reduplicated derivative) made of the two other basic verbs (*hiyú*, *iyáyA*), or the two other vertitive verbs (*knÁ*, *kiknÁ*) of their respective set. More precisely *hiyú* is made of *hi* ‘arrive from’ + *u* ‘go from’ (with epenthetic *y*), and *iyáyA* is made of *i* ‘arrive to’ and *yA* ‘go to’ which is then reduplicated. The vertitive compound *knícú* is made of *kni* ‘arrive back’ and *gu* ‘come back’ (with palatalized *g > c*), while *kiknÁ* is made of *ki* ‘arrive back’ and *knA* ‘go back’.

Table 4: Verbs of DEPARTURE

<i>k-ni-c-ú</i>	‘s/he departs, leaves to come back here’
<i>i-yá-yA</i>	‘s/he sets to go from here, departs from here (before or shortly after departure)’
<i>hi-y-ú</i>	‘1) s/he departs, is setting to come here from there 2) it begins, appears, arises, turns into smth’
<i>k-i-k-nÁ</i>	‘s/he leaves home’

Cumberland (2005:287–288) provides a refinement of the semantics of these lexically complex verbs by analyzing their lexical and deictic meaning with the following notions:

Table 5: Definitions for motion verbs

TRAVELLER	This is the entity that is moving from and to a destination. It is the subject of the verb.
BASE	This is the location (indicated by • in the following figures) with which a traveller is associated. Depending on context, this can be a hometown, house, or country, etc. If one is at work and goes to the coffee shop and comes back, his/her workplace would be the base. The traveller's base can match the deictic center if the speaker is the traveller.
APOGEE	This is the point at which a traveller decides to return back to his/her base, and therefore the point at which one starts using one of the return verbs.
DEICTIC CENTER	This is the reference point of view from which the verb is interpreted. The point of view can be that of the speaker, the traveller or the main character in a story. The movement of the subject can be: a) from the traveller's base and towards the speaker's deictic center and back to the traveller's base (Figure 1 below); or b) from the speaker's base and deictic center away and back (Figure 2 below).

A somewhat idealized summary of the progress, arrival, return and departure verbs involving the speaker and a traveller is provided in Figures 1 and 2 below. Figure 1 describes a situation where a friend of mine would be coming over for a couple of days. He departs from his home (*hiyú*), or his traveller's BASE, and arrives (*hí*) at my house (the DEICTIC CENTER of the story and the traveller's APOGEE). He stays for a week and departs, returning home (*kiknÁ*) to his traveller's BASE. Just before arriving in his town, he calls me to let me know that he is finally arriving home (*kí*) and that his trip went well. The DEICTIC CENTER is that of the speaker describing the event.

Figure 1: Speaker's deictic center and outbound traveller's base are separate

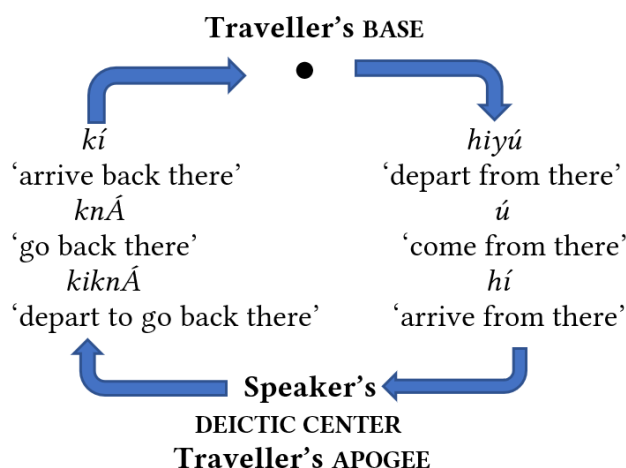
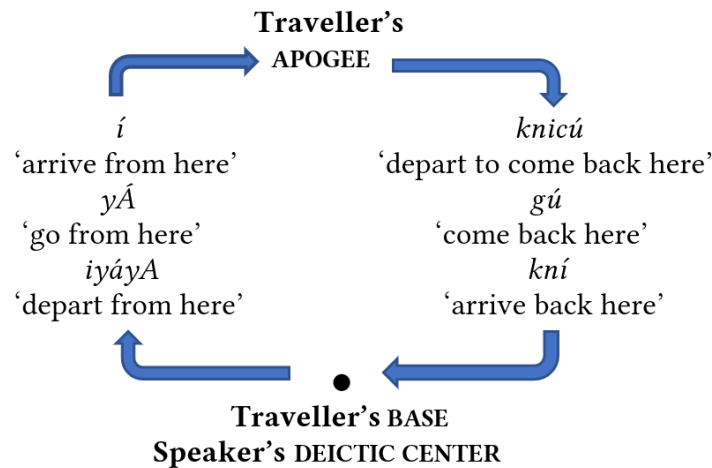


Figure 2 describes a situation where I, the speaker and traveller, decide to go for a round

trip to town to do some shopping. I depart from my house (*imnámnA*; note that verbs will be inflected for 1st person singular for this situation), and this is the speaker's BASE and the DEICTIC CENTER, and I arrive in town (*wa'i*). This is the speaker/traveller's APOGEE. Around 7 o'clock at night I call my wife to let her know that I am on my way back home (*wagú*). The verbs are interpreted according to the speaker/traveller's BASE that is also the DEICTIC CENTER. In narratives with a third person subject, the main character occupies the DEICTIC CENTER in both diagrams.

Figure 2: Speaker's deictic center and separate outbound traveller's base



While in theory one could think that speakers are free to use a set of verbs when talking about the whereabouts of an entity, in practice this is not always the case because a storyteller reports the actions of the characters and it is the movements of the characters that dictate which set of verbs ought to be used (Cumberland 2005:298). In other words, the secondary character adopts the base of the main character. Consider the following example of a story about a woman, the main character, who wants to go back to her people but she encounters a bear. In (1) the verb *ú* 's/he comes here from there' indicates that the traveller's base is away from the main character's deictic center: the bear is coming towards her from somewhere else.

- (1) *Kiyána Ø-ú ga'éca, wañ'áksije e-Ø-cé.*
 close 3s-come.here.from.there then bear DS-3s-be
 'And so something is coming from there, it is a bear'

Upon seeing the bear, the woman plays dead to save her life and the bear sniffs her but decides to leave her behind, as show in (2). To express departure or return in this instance one would expect the use of *knÁ* 's/he goes back there' the return verb matching *ú* but instead *yÁ* 's/he goes from here', which belongs to the other lexical system is used (Figure 2). There is a switch in the traveller's base since the bear's base now matches the main character's base or deictic center.

- (2) *Wíyq žé iħpé-Ø-Ø-ya, duktá-m Ø-yá.*
 woman DEM.MED cast.away-3P-3A-CAUS away-LOC 3s-go.there.from.here
 'He cast the woman away and went from here.'

While main character base attraction of secondary characters is common in Nakoda narratives, base switch for a main character is not as common. In other words, the deictic center

associated with the main character, can also switch in the progression of a narrative. Cumberland (2005:299) reports a deictic center shift in a story about a horned serpent that scares away two men that were swimming in a lake. At the beginning of this story as shown in (3), the men arrive at a lake (i.e. *í* ‘s/he arrives there from here’) and swim to the middle of the lake.

- (3) *Gá-ki téhq í=bi, miní cogám gá-Ø-ya.*
 DEM.DIST-APPROX far arrive.there.from.here=3PL water middle DEM.DIST-3S-say
 ‘They had gotten far in the middle of the lake, they said.’ (Cumberland 2005:428)

When they get scared by the horned serpent they manage to get back to the shore and from there to their village. These sequences are expressed with the vertitive verb *kní* ‘s/he arrives back here’ and so we see that the base is their village. However, in the next episode of this story they tell a holy man about the serpent and the lake becomes the deictic center. The narrator describes the village people’s action to and from the lake using the verbs *hiyú* ‘s/he departs from there to here’, and *knÁ* ‘s/he goes back there’ (or its derivative *aknÁ* ‘s/he goes back there with it’). Example (4) depicts what the old man says to the serpent in his prayer: the traveller’s base is the village, and the narrator’s deictic center is the lake and consequently, the action is now seen from the serpent’s perspective.

- (4) “*Waná hiyú ú=bi no” e-Ø-yá, gá-Ø-ya.*
 now depart.from.there.to.here be=3PL DECL DS-3S-say DEM.DIST-3S-say
 “‘They [village people] are coming now,” he said, they say.’ (Cumberland 2005:428)

In this section I described the form and meaning of deictic motion verbs and showed the existence of both base switches and deictic center switches for narratives involving more than one character. In the next section, I analyse base switch and deictic center switches involving only one character and try to shed light on how they modify the point of view and structure of the narrative.

3.2. Deictic motion verbs in the Nakoda migration story

There are five deictic motion verbs in the migration story under study: *hí*, *knÁ*, *yÁ*, *iyáyA* and *kní*. In the introductory sentences (lines 1 and 2; reproduced in (5)–(6)), Mrs. Kennedy quotes her grandmother from whom she heard the story. I use the terms “new land” (NL) for the new land discovered and “old land” (OL) for the group’s original homeland.

- (5) “*Wanágaš én, né-ci ú-hí=bi.*
 long.ago in DEM.PROX-APPROX 1-arrive.here.from.there=PL
 “‘Long ago we arrived over here (NL) from there (OL).” (line 1)
- (6) *Mniwája agásam-padahq ú-hí=bi-č’ehq” e-Ø-yá.*
 sea across-from.other.to.here 1-arrive.here.from.there=PL-PAST DS-3S-say
 “‘We arrived here (NL) from there (OL) across the sea,” she said.’ (line 2)

The verb *hí* indicates that the traveller’s base (OL) is located away from the narrator’s deictic center (NL). The adverbial suffix *-padahq* ‘from there to here’ also parallels the semantics of *hí*. Next, in (7) (reproducing line 4), the narrator seems to quote a remote third hand source that lived in the old land and who was part of the scene.

- (7) *Žécen, dóna iyápe watápe n-ówa iyápe yá=bi nówa,*
 so.then many hunt bison.hunter PROX-all hunt go.there.from.here=3PL PROX.all
makóce wqží iyéya=bi cén.
 territory one find=3PL thus

And then many hunters... all of the buffalo hunters went hunting (from OL to NL), and found land thus.' (line 4)

The switch in the deictic center—coded by the use of *yÁ* 's/he goes there from here, s/he departed from here'—results in a vivid change of perspective since both the traveller's base and the narrator's deictic center are now in the original homeland. More precisely, the verb *yÁ* indicates that the narrator relates to the events as if an ancient Nakoda, so to speak, was narrating the events. In other words, the audience is transported in the original homeland where this migration story begins.

After crossing the strait (*makóce wídayagen*, lit. 'land island-like'), the whole group arrives in North America and decides to stay here. The traveller's base is still the old land but the deictic center is that of the modern Nakoda (including the narrator) now living in their new homeland. This is indicated by the use of *hí* 's/he arrives here from there' in (8)–(10), reproducing the synopsis in lines 10 to 12.

- (8) *Hí=bi hq'úka, dókiya-m padáhq makóce, dókiya-m*
 arrive.here.from.there=3PL and.so source-LOC from.other.side land source-LOC
mniwája agásam.
 sea across

'They arrived here (NL) from there (OL) thus, from across the land and across the sea.' (line 10)

- (9) *Žécen wíca-htiyq gá-ya=bi cén, "Owá né-ci*
 and.thus man-INTENS DEM.DIST-say=3PL thus all DEM.PROX-APPROX
hí=bi hq'úka, miní né, miní agásam".
 arrive.here.from.there=3PL and.then water DEM.PROX water across

'And so what the elders said is, "They have all arrived around here (NL) from there (OL) as one group, from the other side of the water."' (line 11)

- (10) *Dágu makóca-m a-máni, hí=bi žé. Owá né-ci*
 thing land-LOC LOC-walk arrive.here.from.there=3PL DEM all DEM.PROX-APPROX
makóce nén iyógipi-ya tí=bi=hq.
 land here happy-ADV live=3PL=HAB

'They arrived here (NL) from there (OL) traveling through some land. All lived happily around here on the land.' (lines 12–13)

In (11), reproducing lines 14–15, the narrator states that some of the Nakoda were starting to long for their original homeland and so they wanted to go back home.

- (11) *Ába kná=bi cigá=bi cén. Owá kná=bj=kte*
 some go.back.home=3PL want=3PL but.then all return.there.from.here=3PL=IRR
šká=bi hq'úka iyáya=bi" gá-Ø-ya.
 fell.like=3PL and.so depart.from.here=3PL DEM.DIST-3S-say

“And then some of them wanted to go back home (from NL to OL). They all felt like going back home, and so then they left from here (NL) to there (OL),” they said.’ (lines 14–15)

The vertitive verb *knÁ* ‘s/he returns back to where s/he is from’ belongs to the same set as *hí* (see Figure 1) and both share the same traveller base. However, in this sentence there is also a departure verb *iyáyA* ‘s/he sets out from here, departs from here’ following the two other vertitive/progress verbs. One can wonder why the narrator did not use the vertitive/departure verb *kiknÁ* ‘s/he departs to go back there’ since it matches *knÁ*. As seen above, the use of deictic motion verbs belonging to two different lexical sub-systems enables the narrator to switch the traveller’s base from the old land to the new homeland in a single sentence and express the uncertainty of a part of the group as to their “real” homeland, enhancing greatly the climax of the story.

Finally, the group leaves and makes it to the strait only to discover that the passage is now under water.⁹ The group decides to go back from where they had left in the new homeland as is indicated in (12), reproducing lines 18–19, by the use of the vertitive/return verb *kní* ‘s/he arrives back there (after leaving); returns back to where s/he is from’. This verb indicates that the travellers made it back to their new homeland in a full circle fashion since this verb belongs to the *iyáyA* and *yÁ* set (Figure 2). I interpret the use of these three verbs as a lexical means signalling a progression in the identification of the new land as being their new established homeland.

- (12) *Dóken tiyám kní=bi žécen. “Waná gáhqñ*
 where at.home arrive.back.here.from.there=3PL thus now for.a.time
né-ci, né-ci ú=bi,” gá-Ø-ya.
 DEM.PROX-APPROX DEM.PROX-APPROX stay=3PL DEM.DIST-3S-say
 ‘And then they arrived back here (NL) from there (the strait). “Now we have lived here for a certain time,” they said.’ (lines 18–19)

In sum, the analysis shows how switches between the two systems of deictic motion verbs enable the storyteller to make a reversal of the narrative’s perspective—or to change the point of view—from the Nakoda’s original homeland on the other side of the sea (*mni-wája*, lit. ‘water-one body of’) to their new homeland, and vice versa. Specifically, line 15 (and also 18) is a turning point and the occurrence of two different bases (traveller’s base away from the narrator’s deictic center and then traveller’s base matching the narrator’s deictic center) to speak about the actions of the same character in a single sentence vividly indicates a turning point in the group’s attachment to their new homeland.

4. Crossing the water/ice motif in North American cultures

The migration story presented here depicts the crossing of the sea (or *mniwája*) by island-hopping through a strait (or *makóče wída-yagen*, literally ‘land island-like’) in search of a sustainable new land. At first sight, one is tempted to associate this migration story with a distant memory of

⁹Line 17 has a departure verb *iyúhana mni máhen iyáyahq cén* ‘it [land] had gone under water,’ that is not anchored to a source or goal (see Cumberland 2005:305 for more examples), and therefore lies outside the deictic motion verb system.

the migration of Native Americans through the Bering Strait into North America.¹⁰ This is a very controversial topic in archaeology and it cannot be fully addressed here. However, even an overview of the literature reveals that migration stories involving the crossing of water or an ice barrier in search of better living conditions are part of a widely distributed mythological motif in North American cultures. Wheeler-Voegelin & Moore (1957:72) note that emergence myths are often associated with migration stories where “[u]nder a leader, either a supernatural or a human being, the people start travelling on earth, seeking a predestined location in which to settle.” The fact that the character can evolve in the natural and/or supernatural realms explains why migration material are often seen as “pseudo-history for the various groups.” In the rest of this section I provide a comparative overview of such migration stories, in Siouan, Algonquian and Iroquoian cultures.

Siouan migration stories occur in Chiwere, Mandan, Catawba, Biloxi, Dakota, and Lakota. An original account by Stephen H. Long later published in Dorsey (1886) indicates that the Chiwere resided north of the Great Lakes and migrated southward, leaving behind many groups who would become the Hocank, the Ioway, and the Missouri (see also Gallatin 1836:127 and esp. McMillan 2014). Swanton & Dixon (1914:386) note that a reference to a large body of water in the Mandan emergence myth is interpreted as referring to the Atlantic Ocean by modern Mandan. The fact that the Mandan link the Atlantic Ocean to be the place of origin of the Eastern Siouan groups shows that this is a distorted interpretation since the Eastern Siouan groups like the Catawba and the Biloxi say they originated from the northwest of their present location and not from the eastern sea (Swanton & Dixon 1914:384–385). DeMallie (1976:10) reports that a modern Dakota account of the use of dogs starts with an episode of the Dakota people crossing Beringia.¹¹ In a Lakota myth a very tall man begins his westward journey by first stepping across the sea (Beckwith 1930:368). Since this story depicts the journey of the seven Sioux bands and their acquisition of horses (Beckwith 1930:374) while moving westward, the sea mentioned at the beginning of the story may represent Lake Superior.

Migration stories are also found in Algonquian cultures, including Ojibwa, Blackfoot, Shawnee, and Nanticoke. The prophetic migration story of the Ojibwa people, made famous by historian William Warren (1984[1885]:chapter 5), recounts the prehistoric westward odyssey of the Ojibwa nation from the eastern seaboard, through the eastern great lakes area, to Lake Superior and beyond. It is said that they encountered the Dakota on the north shore of Lake Superior, and one can note that some aspects of this migration story (like reaching the seven fires), resemble that of the Lakota migration story mentioned above.

A Blackfoot myth tells the story of an old man (named *Napioa*) leading the migration of his people, the Sarcee, and thirty other lodges from the other side of the sea, across the ice and to their actual location east of the Rocky Mountains. After settling down the old man also taught the other surrounding tribes the art of civilization, and after completing his tasks he visited the

¹⁰The Beringia interpretation may have been influenced from another piece of oral history published by Long (1942:19) where it is said that long time ago the Nakoda lived “in a land always covered with snow”. According to Schaeffer (1962:72–73), who reviewed Long’s book, the interpretation that the Nakoda lived in the Arctic circle stems from the author’s misreading of the ethnonym “Chippewa” (one of the neighboring Algonquian groups) which he took for “Chipewyan”, a Dene group living near the Great Slave Lake. More work is needed to see if this migration story is not in fact the beginning of a myth called “How the summer came to be” recasted with human actors.

¹¹DeMallie (1976:10) notes that the Dakota origin stories were not of great importance and not represented in the literature, but that they were used in political land claims. One story in particular relates the origin of the Dakota people to a little girl who survived a great flood by taking refuge on a hill.

Sioux (most likely a term for the neighboring Stoney or Nakoda) and disappeared (Wissler & Duvall 1908:22-23). Other details about the old man indicate that the Bloods did not know where he was from, or if he was Indigenous or not, only that he lived near a great sea in the south (Maclean 1893:166). In another version collected by Grinnell (1892:154–156), the details align with those of the Nakoda migration story and go as follows: Long ago, a tribe lived far to the south, on the other side of the mountain and game became scarce. The old man had a dream in which he was told to cross the mountain with his children in search of a better place to live. After crossing the last peak, they came upon a rich land. His sons went to war in all directions and thus were formed the Blood and Piegan Blackfoot tribes. According to M. Schultz (p.c. in Grinnell 1892:156), this migration story is of recent origin, and “embellished by extracts from missionary teachings, for they now say that when the old man and his children were making this journey they came to a great salt lake, and the old man ‘made medicine’; whereupon the waters parted and they crossed on dry land”.

Another Algonquian group, the Shawnee also have a migration myth. Their migration south is first reported in the Delaware’s *Walam Olum*, an epic story that includes a deluge myth, a creation story, and multiple migration episodes; the following passage reads as follows: “When Little Fog was chief, many of them went away with the Nanticoke and Shawnee to the land in the south” (Voegelin 1954:157–158). Brinton (1885:146) cites a version obtained by Schoolcraft in 1812 (1854:254) who made the following comments:

The Shawnees, who at various times were in close relation with the Delawares, also possessed a vague migration myth, according to which, at some indefinitely remote past, they had arrived at the main land after crossing a wide water. Their ancestors succeeded in this by their great control of magic arts, their occult power enabling them to walk over the water as if it had been land. Until within the present century this legend was repeated annually, and a yearly sacrifice offered up in memory of their safe arrival. It is evidently a version of that which appears in the third part of the *Walam Olum*.

Brinton (1885:139) also mentions a similar story with the same motif amongst the Nanticoke (an Eastern Algonquian group), but here again the intervention of God gives it a Christian flavour:

At some remote age, while on their way to their present homes, “They came to a great water. One of the Indians that went before them tried the depth of it by a long pole or reed, which he had in his hand, and found it too deep for them to wade. Upon their being non-plussed, and not knowing how to get over it, their God made a bridge over the water in one night, and the next morning, after they were all over, God took away the bridge.”

Turning to the Iroquoian family,¹² consider here a synopsis of the Tuscarora migration legend with line numbers (from Wallace & Reyburn 1951:46–47):

¹²Other Iroquoian groups, like the Cherokee, have a migration myth produced from an assemblage of elements which we are now familiar: an old man leading his people to a new land and the people come to a large river, crossing it by attaching vines together (an element found in other Iroquoian traditions as well as in Mandan) (Mooney 1995:428-429, based on Buttrick 1884:229).

Table 6: Tuscarora migration legend

1–4	Long ago a people started to starve as nothing grew in the old world.
5–11	They held a council and decided to migrate in order to find food.
12–14	They walked over the ice.
15–20	They split into two groups in search for food. One went eastward the other one westward.
21–26	The eastward runners continued a long time and they saw a huge black snake.
27–34	The eastward runners separated in seven directions and maintained contact with one another.
35–37	The seventh runner found land and food to live on and decide to go back to bring the others.
38–41	They went back where they had crossed but the ice had melted and they were not able to reach the others.

The crossing-the-water/ice motif and other aspects of this Tuscarora migration story are nearly identical to those found in the Nakoda migration story: people cross water/ice in search of food and finally find a land that can sustain them, but they are unable to cross the ice barrier back home. This nearly identical phrasing is hard to explain by cultural exchange, considering that the Tuscarora (eastern North Carolina) and Nakoda (northwestern Ontario and eastern Manitoba) historical homelands are separated by more than 1200 miles, unless both descend from a common ancestor.

Wallace & Reyburn (1951) have suggested that the Tuscarora migration story may in fact be a segment borrowed from the Walam Olum, since the Tuscarora had a clan division (called the *Chowan*) that was said to be Algonquian in origin. There has been much controversy since the publication of the Delaware Walam Olum in mid-1800s, and it is now considered a historical hoax by some scholars (cf. Oestreicher 2005). Other scholars however, remain more cautious. For example, Denny (1991:113) notes that the Walam Olum is likely a mixture of old and recent material, and suggests the different parts need to be corroborated externally and independently from one another. This is a good point of departure since the Walam Olum contains mythological elements—like a deluge and a migration story—found in other North American emergence myths (Wheeler-Voegelin & Moore 1957). Even Wallace & Reyburn (1951:45) admit that the Tuscarora connection to an ancient migration across Beringia may well be a later rationalization of the early anthropologists or Indigenous informants and add that “the details of the story, however, do not have the ring of recent fabrication”. The same caution should be kept in mind while reading the Blackfoot and Nakoda migration stories.

In sum, I do not think, following Echo-Hawk (2000:272), that the Nakoda migration story was fabricated as a recent piece of fiction and I also doubt the story depicts the crossing of the Bering Strait by the ancestors of the Nakoda people. Instead my hypothesis is that this migration story may be a very brief account, or the frame of a prehistorical migration account, original or borrowed, that was disseminated through an uninterrupted line of storytellers.¹³ I speculate that

¹³Oral traditions, by nature, do not go unaltered through time and change is inevitable. Boas (1914:381) mentions that continuous dissemination can be halted and that simple tale frames can be borrowed into foreign cultures. The frame of the Nakoda migration story might have been borrowed from a neighboring Algonquian group where such

the story could represent the westward journey of the Dakotan people (the ancestors of Nakoda, Stoney, Dakota, and Lakota) along the shores of Lake Michigan, Lake Superior or even Lake Winipeg. However, to confirm or invalidate this working hypothesis would require interdisciplinary research that seeks corroboration from ethnohistorical, historical linguistics (i.e., lexical reconstruction leading to the identification of Proto-Dakotan homeland), genetics, and archaeological data pertaining to the western and southwestern parts of the Great Lakes area.

5. Conclusion

The objective of this article was to analyse a Nakoda migration story by highlighting linguistic and ethnohistorical points of interest. In §2, I have shown that the storyteller uses direct and indirect quotative verbs in a layered fashion: the second-hand source (the narrator's grandmother) is quoted directly with *eyÁ* 's/he says', while the unknown third hand source is quoted indirectly with *gáyA* 'they said'. Since one cannot know the identity of this third hand source, it is left to interpretation by the listener and so the remoteness of the account is co-constructed via the interaction between the storyteller and the listener, but in both cases the inclusion of a more remote source (*gáyA*) within the narrative makes it less vulnerable to challenge. In §3, I analyse the use of deictic motion verbs and show how they can be manipulated by the narrator to indicate the movements and progression of the main character and to switch the deictic center creating a reversal of the narrative's perspective. This marks a major turning point in the group's attachment to their new homeland. Lastly, I have provided comparative data from other North American Indigenous cultures where the crossing-the-water/ice motif occurs and proposed that this story could be a brief account or the frame of a much larger story depicting a prehistorical migration from the Great Lakes westwards which was disseminated through an uninterrupted line of storytellers.

Abbreviations

A	agent	INTENS	intensifier
ADV	adverb	IRR	irrealis
APPROX	approximative	LOC	locative
CAUS	causative	MED	medial
DECL	declarative	NEG	negative
DEM	demonstrative	P	plural
DIST	distal	PL	plural
DS	discontinuous stem	PROX	proximal
FS	false start	S	singular
HAB	habitual		

a story occurs, like in Blackfoot.

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Word-initial allophones of /r/ in Ho-Chunk^{*}

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Abstract: Ho-Chunk has one liquid phoneme, traditionally transcribed [r], and usually described as a flap or trill. We find that in archival recordings collected by Kenneth Miner in the 1970s, a speaker sometimes produces word-initial /r/ as [l], or more rarely as a nasal. When /r/ is produced as a rhotic, it varies in manner between a tap, approximant, r-colored vowel, or a combination of manners. We did not find clearcut examples of trills. Different tokens of the same word may have different allophones of /r/, showing some level of free variation.

Keywords: Ho-Chunk, Hoocąk, rhotics, allophony

1. Introduction

Ho-Chunk has one liquid consonant, typically transcribed [r]. It is usually described as a trill or a tap/flap. Table 1 summarizes linguists' impressionistic descriptions of the sound's articulation.

Table 1: Descriptions of Ho-Chunk /r/

Source	Verbal description (verbatim)
Susman 1943	single-flap tongue-tip trill in alveolar position
Lipkind 1945	a single rapid flap of the tip of the tongue against the alveolar ridge
Sebeok 1947:168	trill
Marten 1964:46	flap [r̥]... in very slow, careful speech this sometimes has a lateral quality
Danker 1985:45	single lateralized flap of the tip of the tongue
Miner 1992:4	dental trill
Wolff 1951:201	initial allophone of Winnebago /r/ is [d]
White Eagle 1988:xvii (introduction by Philip LeSourd)	flap r
Helmbrecht & Lehmann 2010	voiced alveolar tap

When a language has only one liquid phoneme, it is common for that phoneme to have both rhotic and lateral allophones (Maddieson 1984:83), and sometimes nasal or stop allophones

^{*}This project was supported by the Undergraduate Research Opportunity Program (UROP) at California State University, Long Beach.



as well. For example, Boas (1911:16–17) notes that Pawnee “contains a sound which may be heard more or less distinctly sometimes as an l, sometimes an r, sometimes as n, and again as d, which, however, without any doubt, is throughout the same sound, although modified to a certain extent by its position in the word and by surrounding sounds.”

Ho-Chunk /r/ is known to have a nasal allophone, which occurs predictably after a nasal vowel and is traditionally transcribed [ɲ] (Susman 1943:16, Lipkind 1945:1, Miner 1992:5, among others). An acoustic study found that [ɲ] varies in duration between values typical of a nasalized flap [ɾ̃] and a full nasal stop [n] (Panick 2021, Panick & Hall 2023).

There is scant mention in the literature of other phonetic variation in the realization of Ho-Chunk /r/. Susman (1943:16) does single out /r/ as sounding different in word-initial versus word-internal position, but her claim that “r seems to be clearer and sharper intervocalically” is hard to interpret in terms of phonetic features. Wolff (1951:201) claims that “the initial allophone of Winnebago /r/ is [d].” A wordlist from Hayden (1868) also contains a few examples of initial /r/ transcribed as *d*, such as *du-za*’ for ‘wash’ (/ruʒa/) and *da’-ba-ra* for ‘beaver’ (/raab-ra/). However, Hayden transcribes most other initial /r/s as *r*, and he also transcribes some non-initial /r/s as *d*, so this seems more likely to reflect his inconsistent interpretation of [r] rather than the allophony pattern claimed by Wolff.

Marten (1964) mentions of /r/ that “in very slow, careful speech this sometimes has a lateral quality.” Danker (1985) also described /r/ as “lateralized,” although Danker does not suggest that the lateralization varies depending on speech style.

Walker (1974:399) reports that Ho-Chunk speakers interchange [r] and [l] in English, citing an unpublished manuscript by Amelia Susman claiming that “the Winnebago substitute a l sound for the English r in pray.” Walker further reports that:

The substitution of [l] for [r] in English words as pronounced by Winnebago speakers is confirmed by Nancy O. Lurie who wrote... that “Old timey Winnebago like Blowsnake pronounced flute and fruit exactly the same way Prut.” Frances Perry... also wrote... that “when my Indian friend Flora and I write to each other we call ourselves Frora and Plances interchanging P and F and l and r, which pairs sound alike to them.”

Interchanging /r/ and /l/ in a second language is common among bilinguals whose first language has a single liquid with [r] and [l] allophones.

Researchers working with archival Ho-Chunk recordings in our lab have frequently noticed words where initial /r/ sounds like [l]. The initial impetus for the current study was to follow up on these observations and to see whether there was a pattern to the occurrence of [l] allophones. As we noticed more variation, we decided to document other allophones of /r/ as well.

2. Methods

We analyzed tokens drawn from 1974–75 fieldwork recordings collected by Kenneth Miner, now archived at the University of Wisconsin-Milwaukee Libraries. These recordings feature mostly elicitation of single words or short phrases. Most speech is by Lavina Thorud (Maḡxiánaḡiḡiga) who was born in 1912; there is also some speech by Robinson Johnson. An ongoing annotation project at CSULB (Hall et al. 2019) has isolated and transcribed around 8400 word tokens.

We extracted all tokens of words transcribed with initial /r/. This yielded 312 tokens, some of which were unusable due to poor sound quality or other problems (such as being produced directly after an English word ending in /r/). In the first pass of analysis, both authors listened and independently marked which tokens sounded [l]-like to us. Later, about a third of the tokens were examined using Praat (Boersma & Weenink 2019), in order to explore the range of phonetic variation among [r]-like tokens as well. We inspected spectrograms and waveforms to identify manner of articulation.

There are some inherent limitations in working with this corpus. The recordings were not taken in a sound-attenuated environment; some tokens are faint, and there is always some level of background noise. This can pose challenges for both acoustic analysis and auditory identification of sounds. Partly for this reason, we did not attempt to classify every token. Our focus is on documenting the range of allophones present, using the most clear-cut tokens available. We will not try to quantify the relative frequency of different rhotic allophones.

3. Results: types of allophones

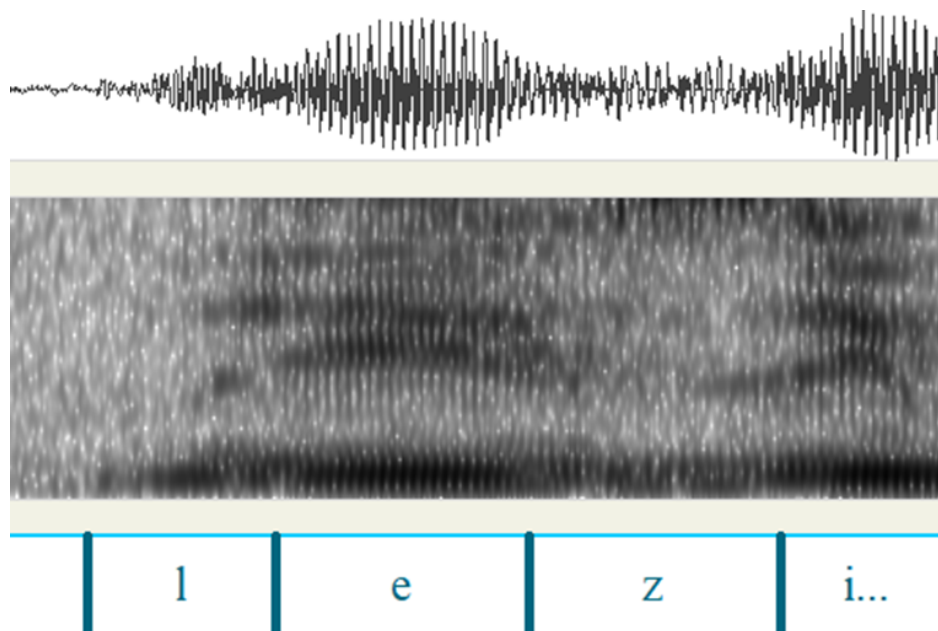
In this section, we describe the range of allophones observed in the data. All tokens used as illustrations were produced by Lavina Thorud, except where noted.

3.1. Lateral approximant allophones

There were indeed many tokens of initial /r/ produced as [l]. 23 tokens were identified as [l] by both researchers, and there were another 51 tokens where the authors disagreed. 24 of these disagreements were in words beginning with /ru/ or /ruu/, where the first author tended to hear [l] while the second author heard a rhotic. This suggests that there is some degree of individual idiosyncrasy in the way that non-native listeners interpret this combination of Ho-Chunk sounds.

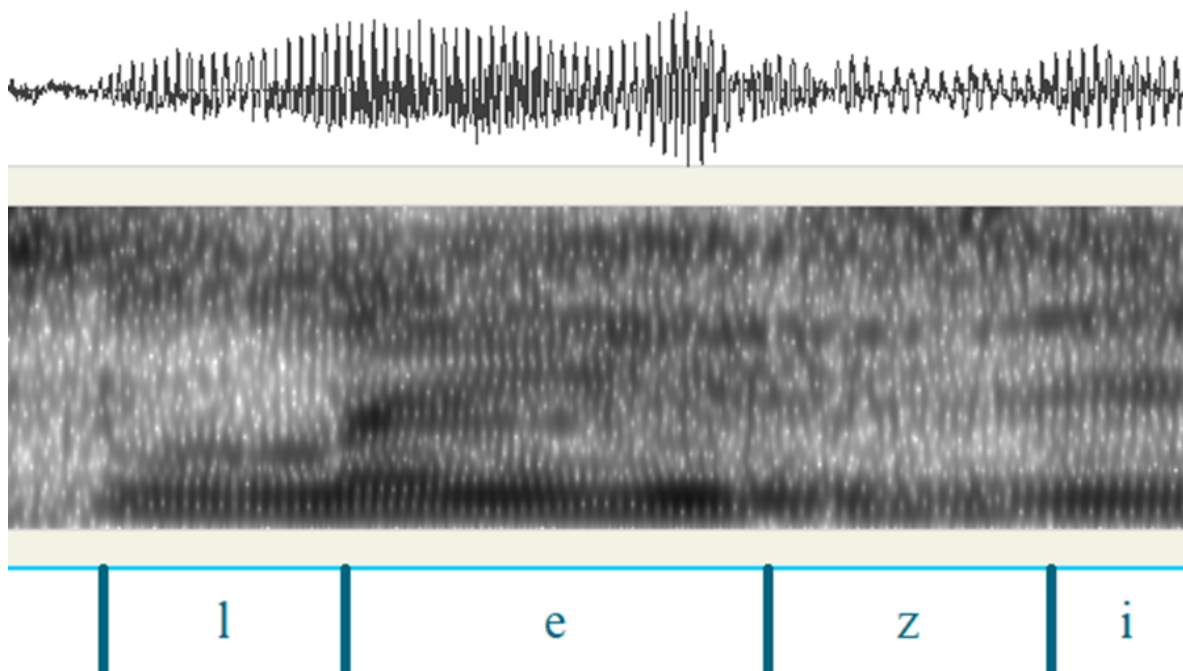
Figure 1 is an example of a clearly [l]-like production. In this example, formants begin to be visible midway through the lateral approximant. F3 is fairly high (3115 Hz), which is typical of laterals (Ladefoged & Maddieson 1996:193). The duration of this token is 140 ms.

Figure 1: Beginning of /reziwayuuk/ 'stick out your tongue,' with /r/ realized as a lateral approximant



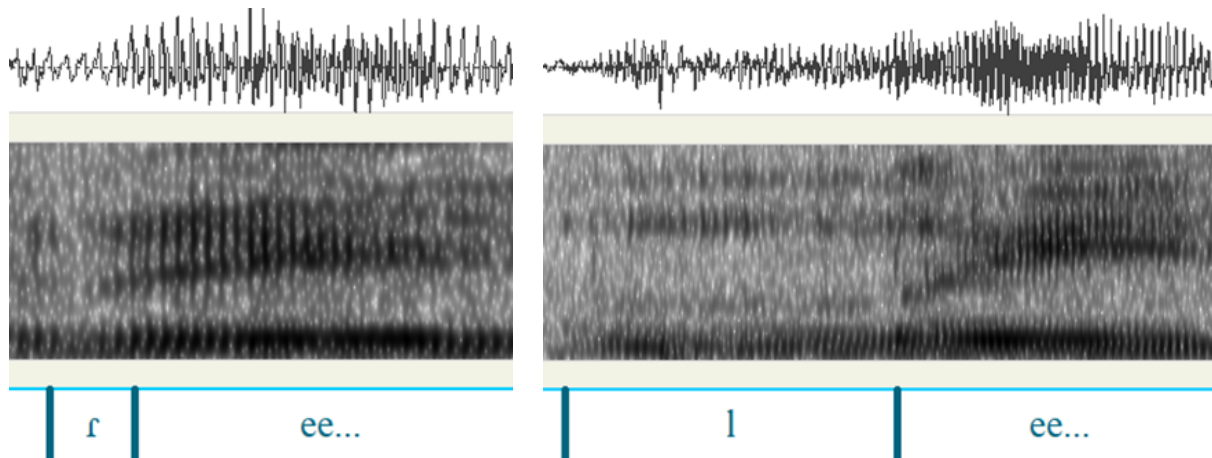
In the token below, the formant structure is visible throughout the lateral, whose duration is 87 ms. F3 is around 3540 Hz, and the space between F2 and F3 is noticeable.

Figure 2: Token of /reezinap/ 'stick out tongue,' with /r/ realized as a lateral approximant



The same word could be produced with laterals in some tokens and rhotics in others, as shown below for two tokens of /reezi/ ‘tongue.’ The r-like token on the left is a voiced flap with a duration of about 40 ms (although the onset is hard to identify precisely). The [l]-like token on the right is 283ms long, and sounds slightly disfluent, as if the speaker is hesitating on the sound. It again has a clear F2-F3 gap, and F3 is around 3130 Hz.

Figure 3: Two tokens of /reezi/ ‘tongue,’ with /r/ realized as [r] and [l].



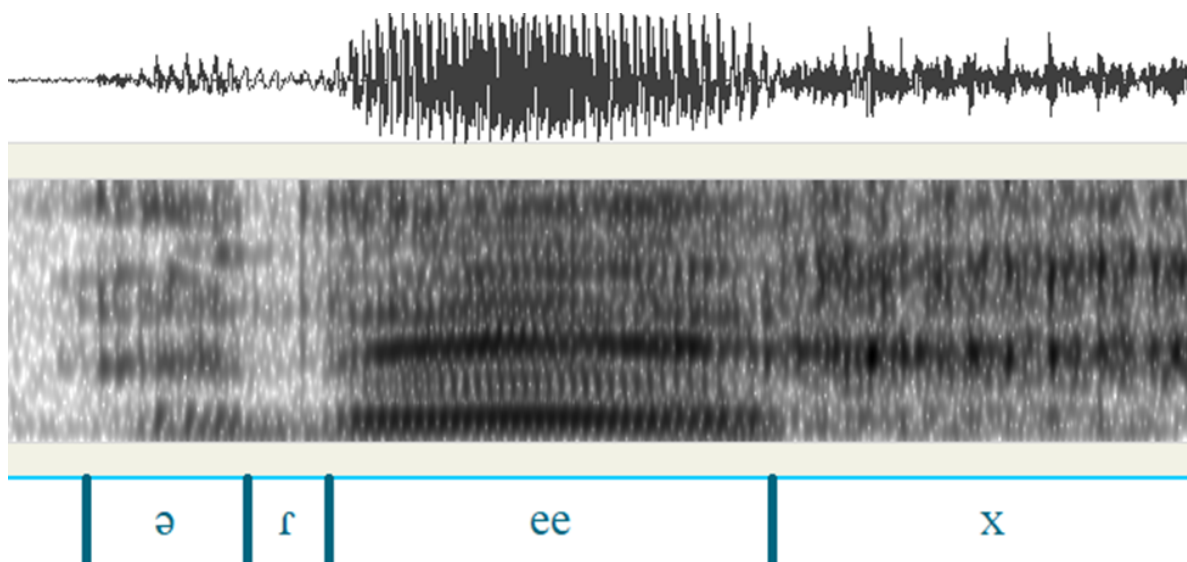
There was no obvious pattern as to what phonetic environment the [l] allophones occurred in, aside from being apparently confined to word-initial position.¹ We found examples before all five vowel qualities, as in [laayo] ‘lungs,’ [luza] ‘wash,’ [liidʒəre] ‘bend it,’ [logadʒikʔi] ‘suspenders,’ and [leezi] ‘tongue.’ The lack of a conditioning environment, and especially the existence of within-word variation, suggest that the [l] is a stylistic variant. As noted above, Marten (1964) associated [l] with “very slow, careful speech.” The elicitation sessions in these recordings fit that description; the speakers mostly produce the words slowly and in isolation so that the linguist can transcribe them.

3.2. Flap allophones

As shown in Table 1, most linguists describe Ho-Chunk /r/ as a flap, and flap realizations were indeed very common. The flap allophone is easiest to see in those cases where there is a vowel preceding it. This can happen in a phrasal context, if the preceding word ends in a vowel. It can also happen in a token produced in isolation, if the speaker produces an excrescent schwa before the occlusion, as in the example below (which was produced by the male speaker). The schwa-like vocoid before the flap is non-phonemic and not consistently present. In this token, the /r/ appears to be a non-continuant flap: the intensity dips, and there are no strong formants during the occlusion. This flap is about 44 ms long.

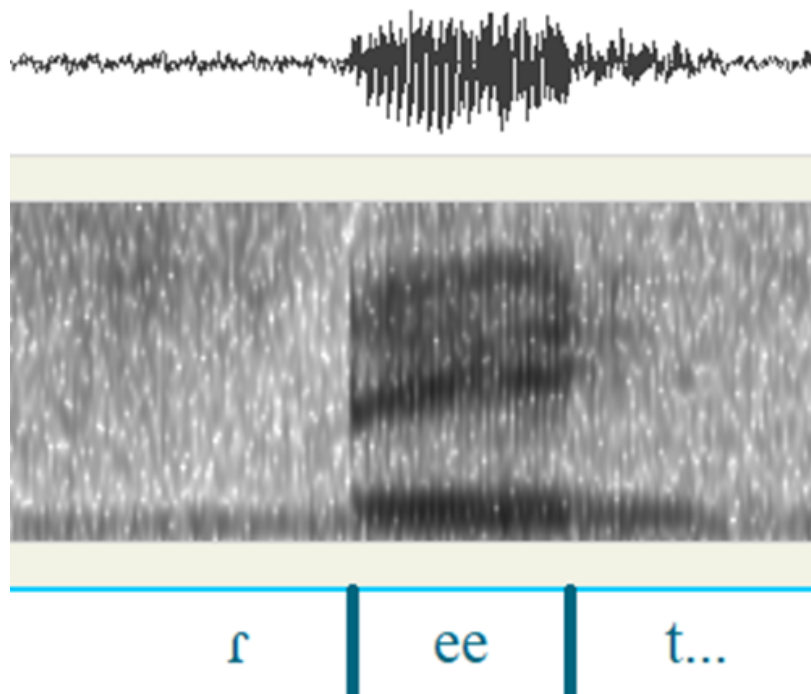
¹To be clear, we did not examine medial /r/ ourselves, but Sean Panick conducted an extensive study of word-medial /r/ using the same corpus, and did not encounter any cases of [l] allophones in that position (Panick 2021, Panick & Hall 2023). /r/ does not occur word-finally in Ho-Chunk.

Figure 4: Token of /reex/ ‘pail,’ produced by male speaker, with excrescent schwa before the flap



Most flap tokens, however, do not have a pre-vowel. In these cases, it is not possible to measure the duration of the flap. In the token below, for example, there is a clear point where the flap is released and the vowel begins, but there is no acoustic marker of when the flap occlusion begins.

Figure 5: Beginning of /reetʰɥwaakʃana/ ‘lying laying down,’ showing flap with no clear onset

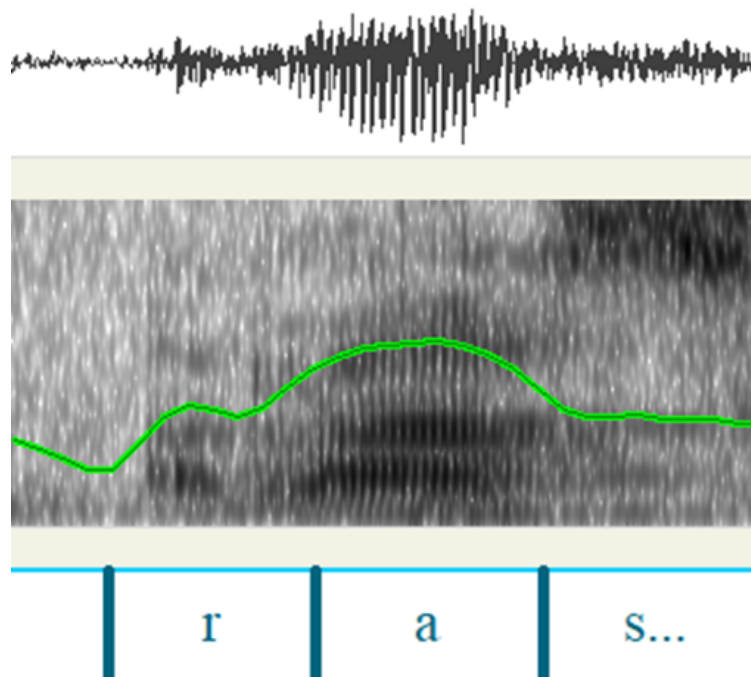


As mentioned earlier, Wolff (1951) claims that /r/ is produced as [d] word-initially. While we did not hear any of the tokens as [d], it is worth noting that the spectrogram in Figure 5 does look similar to an unaspirated stop. It could well be that some styles of producing or perceiving tokens like this could produce an impression of initial [d].

3.3. Trill allophones?

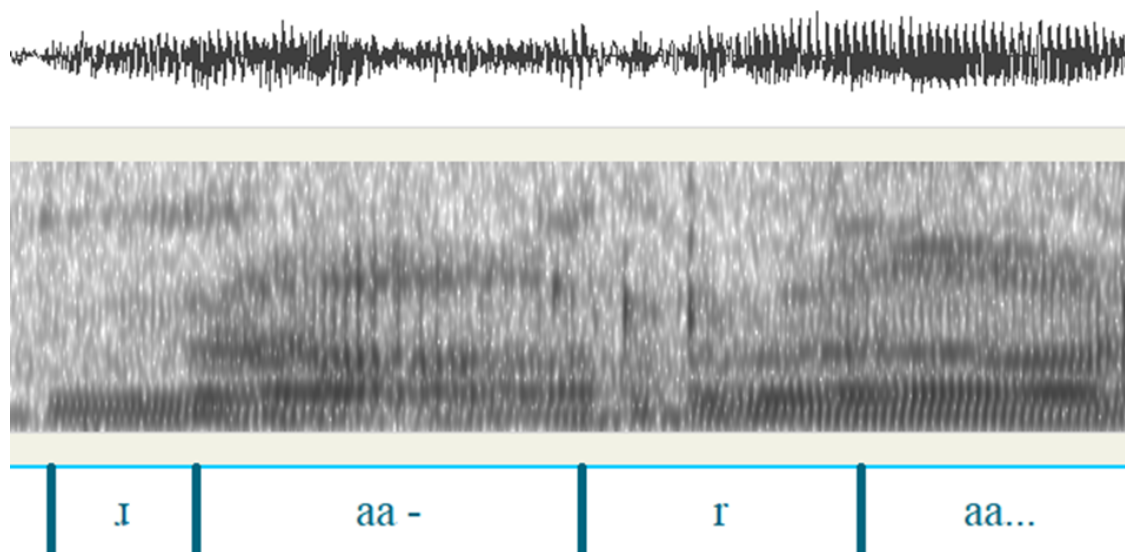
Although several sources have described Ho-Chunk /r/ as a trill, we did not find unambiguous examples of trills in the data. A trill should contain two or more rapid tongue-tip occlusions. Based on the intensity curve (shown in green), the token below could be interpreted as a two-tap trill, with a total duration of 130ms. However, it could also possibly be a flap with an excrescent pre-vowel, similar to that in Figure 4.

Figure 6: Token of /raasga/ ‘lighter,’ with possibly trilled onset. Green line = intensity



There are no clear-cut examples of trills with more than 2 occlusions. The single marginal example we found is shown below. In this utterance, the speaker stops and repeats the word's initial syllable. The first time, the /r/ appears to be an approximant, but the second time the /r/ sounds clearly trilled, with at least 3 rapid occlusions. However, given that this trill was produced in the context of a disfluency, it is not an ideal example to show the trill as a regular allophone.

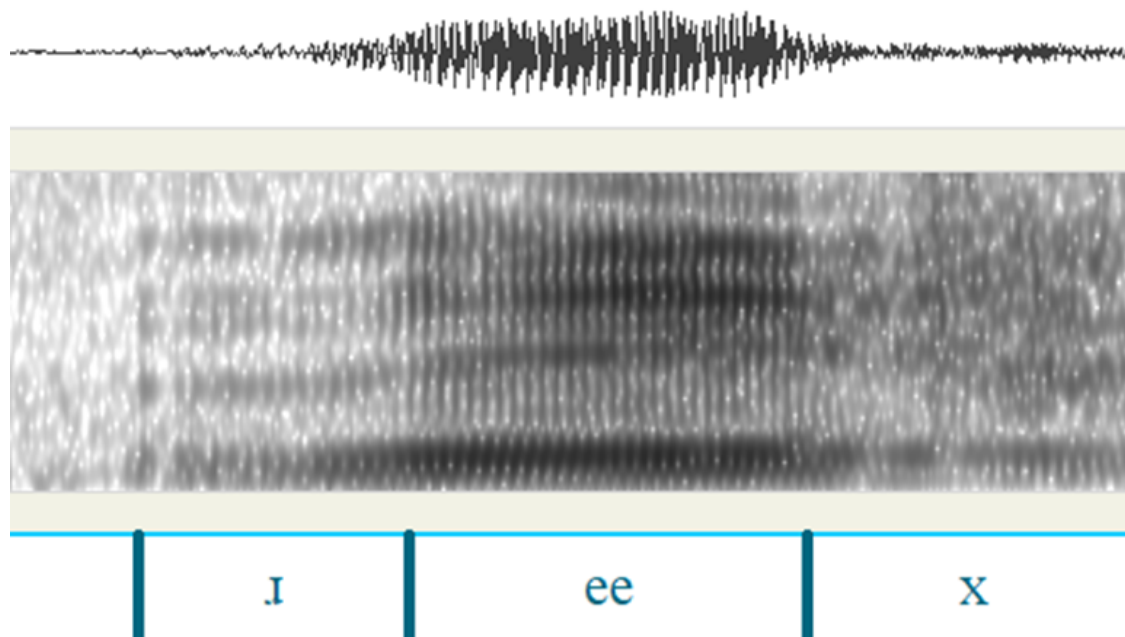
Figure 7: Token of /raaf/ ‘name,’ stopped and re-started



3.4. Low-intensity rhotic approximant allophones

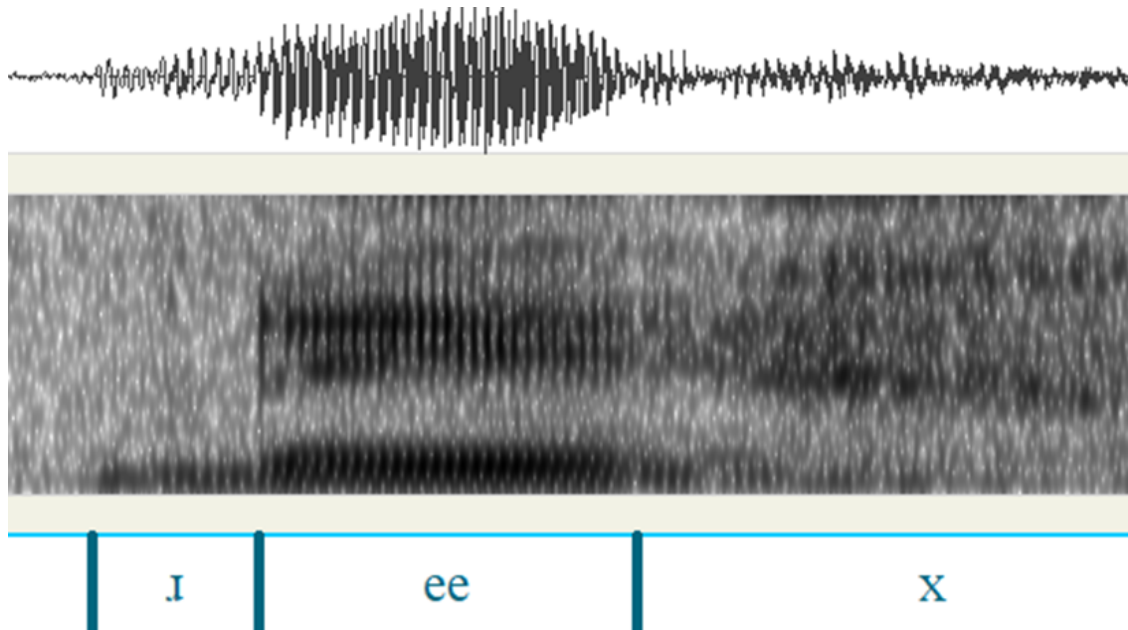
In some cases, /r/ was produced as a low-intensity rhotic approximant (which we will transcribe [ɾ]). The token below displays a period of voicing as well as formant structure, with a duration of 107 ms. The mean F3 is 2832 Hz.

Figure 8: Token of /reex/ ‘pail,’ with rhotic approximant



Some tokens of approximants have a period of voicing but no visible formant structure. The token below has a duration of 83 ms. It is auditorily somewhat ambiguous between [ɾ] and [l].

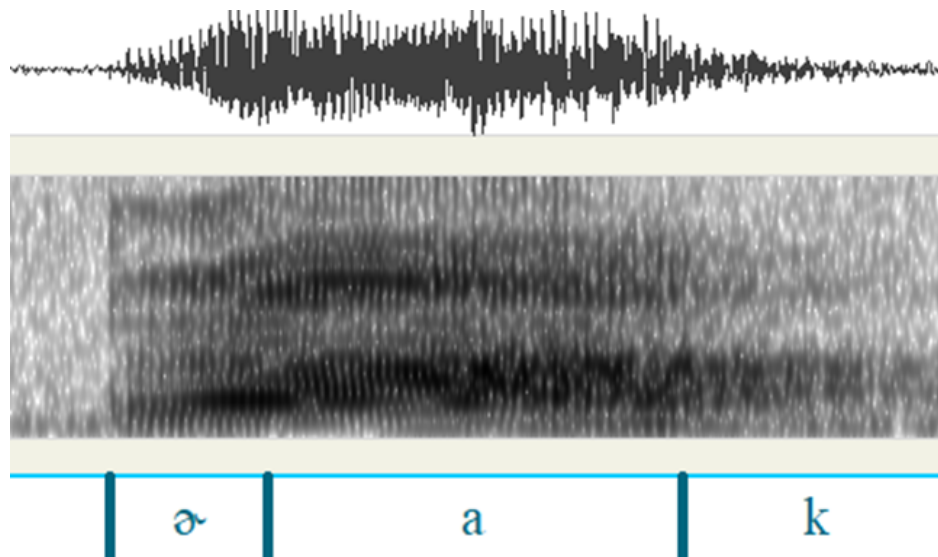
Figure 9: Token of /reex/ ‘pail,’ with rhotic approximant



3.5. R-colored vowel allophones

While the approximant tokens above had low intensity and weak formant structure, there are other tokens that could be considered r-colored vowels. We have transcribed the /r/ in the token below as [ɤ] to distinguish it from the weaker approximants above, although its intensity is somewhat less than that of the following [a]. Its duration is 91 ms. The formants are difficult to separate, but there is a clear formant transition between the rhotic and following [a].

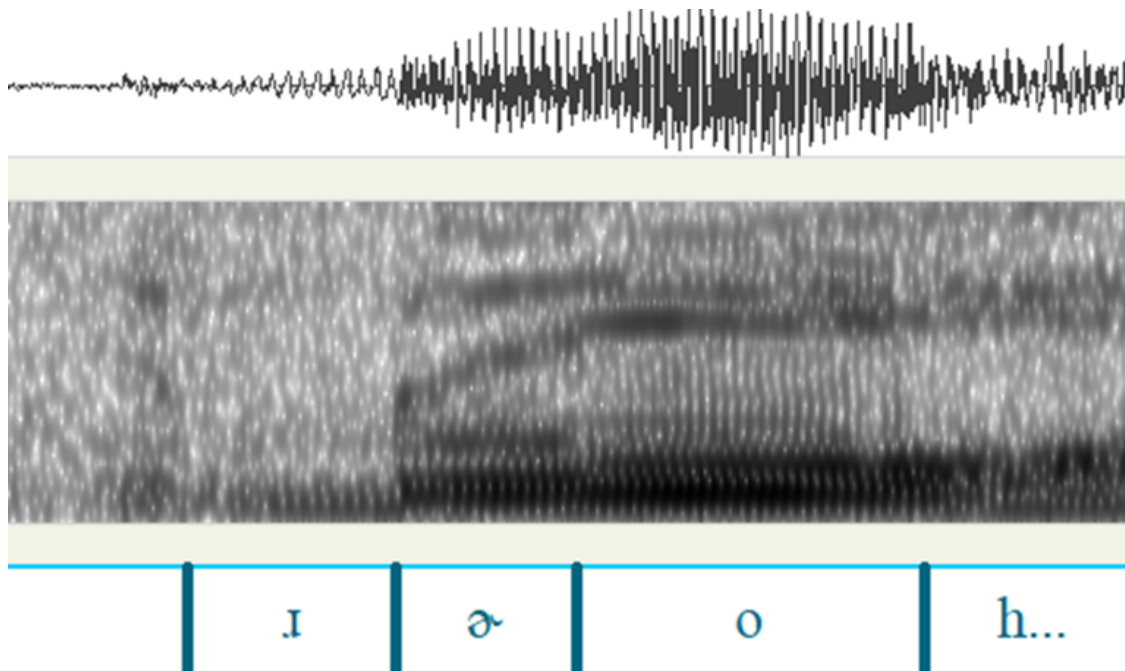
Figure 10: Token of /raak/ ‘white ash,’ with vocalic /r/



3.6. 2-part articulation with r-colored vowel

In the token below, the /r/ appears to be realized with two distinct parts: a consonantal occlusion and an r-colored vowel. The consonantal portion is 78 ms and tentatively transcribed [ɹ], although it is very quiet and hard to identify auditorily. The vocalic portion is 67 ms. Its F3 begins very low (1900 Hz), which is characteristic of rhotics.

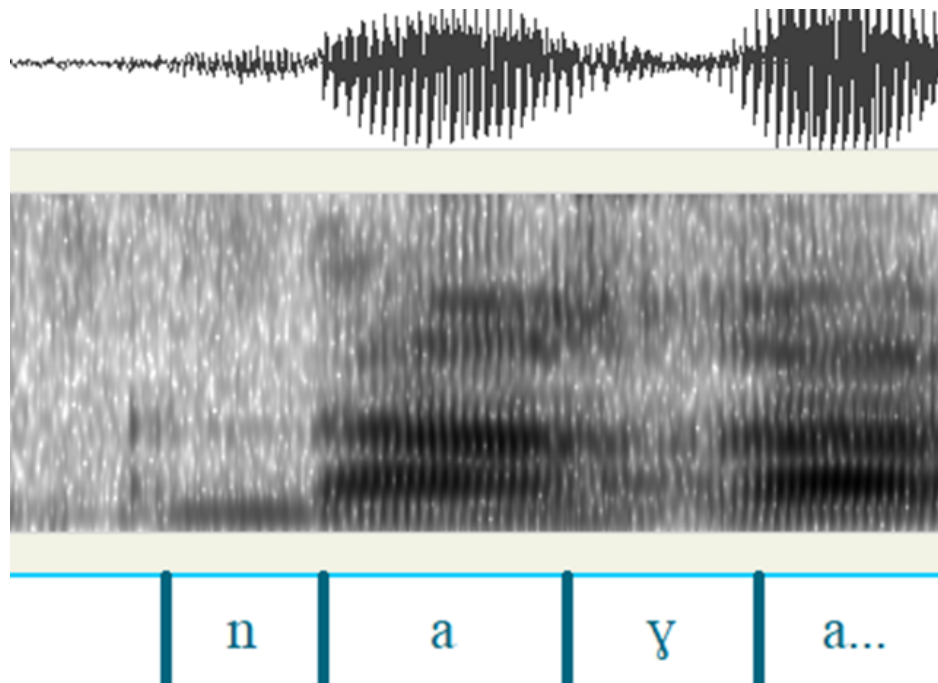
Figure 11: Token of /raak/ ‘white ash,’ with vocalic /r/



3.7. Nasal allophones

To our surprise, a few tokens sounded like nasals to one or both authors. There were 5 tokens that both authors identified as [n], and another 9 tokens with reasonably good audio quality that one author or the other identified as [n], while the other author heard an [l] or [ɹ]. An example of a token that both authors heard as [n] is shown below. The duration of the [n] is 99 ms.

Figure 12: Token of /rayakʃawək/ ‘you cry moving,’ with apparently nasal /r/



Ho-Chunk /r/ is known to become nasalized after nasal vowels, but in these cases there is no preceding nasal vowel to trigger such a change, so finding [n]s was unexpected.

We have not explored whether such examples are acoustically identical to lexical /n/.

3.8. Summary

The corpus contained examples of at least 6 allophones of /r/ in word-initial position: flap, lateral approximant, rhotic approximant, r-colored vowel, consonant plus r-colored vowel, and nasal. The flap could be produced with or without an excrescent vowel preceding.

4. Speaker's metalinguistic discussion of [l] allophones

Interestingly, Miner and Thorud discuss and comment on the r/l variation during the elicitation sessions. These conversations show that Thorud was able to hear and control the variation, and that she equated the [l] allophone with English [l].

In the conversation in (1), Thorud appears to deliberately produce [l] as an alternative realization of /r/. Both Thorud and Miner agree that there are two ways to produce the same word.

- (1) Miner: What do you call the Chippewa Indians?
 Thorud: [ɹeegatʃi], [reegatʃi] ... [leegatʃi], you could put it [leegatʃi] on there.
 Miner: See, that's what I'm wondering. There's two choices on that first sound.
 Thorud: Yeah. It is.

Another case in which both Miner and Thorud acknowledge the existence of two variants is:

- (2) Miner: How would you say ‘tongue’?
 Thorud: [leezi] ... *lazy* (laughs) ... but did the pronounces ... the pronunciation is... [leezi]
 Miner: If I pronounced it [reezi], would it be OK...
 Thorud: Yeah... [reezi], you could say [reezi] too.

Thorud is apparently amused by the similarity of Ho-Chunk [leezi] and English *lazy*. This is one of at least three times that she compares a Ho-Chunk [l] variant with an English word beginning with [l].

When discussing the morphology of /reegatʃi/ ‘Chippewa,’ she compares the sequence [leeg] to English *lake*.

- (3) Miner: Now that word for Chippewa...
 Thorud: [reegatʃi]
 Miner: Yeah. Does that have a meaning?
 Thorud: (under breath) [lereeeee ga tʃi]
 Miner: Mean anything else other than Chippewa?
 Thorud: Just the [tʃi] part is a house, but that wouldn’t, wouldn’t come near it... I don’t know why they call those Chippewa [leegatʃi] unless they... *lake-atʃi* but then the *lake* is in English, so that wouldn’t be for that either. Just uh, they just call them [leegatʃi].

Similarly, when discussing /raak/ ‘white ash tree,’ Thorud jokingly compares the [l] variant to the English word *log*.

- (4) Miner: And the word they have here for the other one, the white ash, is something like [rook]
 Thorud: [ʁaak]. Sure.
 Miner: [raak]?
 Thorud: [laak]. Just...you can just even put *log* down for that (laughs)
 Miner: Hmm?
 Thorud: You can even put *log* down for that. (inaudible sentence). Yeah. [laak]

Thorud’s ability to hear and control the r/l variants is somewhat unusual for allophonic free variation, which cross-linguistically is usually below the speaker’s level of awareness. This could relate to her being bilingual in English, which has a phonemic r/l contrast.

5. Discussion

In these recordings, Lavina Thorud often produces word-initial /r/ as [l], confirming a little-noticed observation by Marten (1964). The rhotic realizations of /r/ also have several variants, including a tap, approximant, rhotic vowel, or combinations of these. We did not find clear-cut examples of trills, contrary to previous descriptions. We observed occasional realizations of /r/ as [n], which have not to our knowledge been previously reported in this context. [n] is known to regularly occur as an allophone of /r/ following nasal vowels, but in these cases there was no preceding vowel. We did not find examples of the [d] allophones reported by Wolff (1951).

The various allophones appear to be in free variation, as the same word is often produced multiple ways in close succession. This supports Marten’s claim that the [l] is a stylistic variant, rather than a phonologically conditioned allophone.

The finding that /r/ has [n]-like realizations (in a non-nasal context) may shed light on the diachronic and synchronic interplay of these sounds in Ho-Chunk. Historically, /r/ became /n/ before nasal vowels, and as noted in §1, there is a synchronic alternation in which /r/ becomes [ɲ] after nasal vowels as well. If /r/ is sporadically nasalized even not in a nasal context, this may shed light on why it has been particularly prone to undergo nasal assimilation.

The occurrence of [l] and [n] allophones in word-initial position could relate to a cross-linguistic pattern that Labrune (2021) calls “word-initial rhotic avoidance.” Labrune claims that many languages avoid rhotics in word-initial position through various means. In some languages, rhotic phonemes are banned in initial position, in others they are statistically dispreferred. In other languages, the rhotic has lateral or nasal allophones in word-initial position. Labrune cites Warao, where the flap is realized as [d] word-initially (Romero-Figueroa 1997), and Wichita, where /r/ is nasalized word-initially (Garvin 1950). Another possible example is Chaha, where /r/ becomes [n] word-initially: [nik'im] ‘pick!’ versus [jirak'im] ‘he picks’ (Banksira 1997, cited in Rose 2000).

The findings presented here should be seen as preliminary and limited. They are based mostly on a single speaker, and the uneven recording quality did not allow us to fully explore the phonetics of all the liquid allophones. Nevertheless, it is clear that Ho-Chunk has more allophones of /r/ than have been previously described, and we hope that this study will help linguists to recognize these and other variants in other data sources.

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Yesa:sahí (Tutelo-Saponi) language reclamation and revitalization

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Abstract: The reclamation and revitalization of dormant North American languages is underway among many Indigenous communities in the United States. One of these languages is Siouan Yesa:sahí (Tutelo-Saponi-Monacan). The authors of this paper have been heavily involved in Yesa:sahí revitalization in collaboration with the Living Tongues Institute of Oregon. In this chapter, we explore the many challenges inherent in revitalizing Yesa:sahí. We analyze certain grammatical and extragrammatical elements of the language. Revitalization of Yesa:sahí is unfortunately somewhat hampered by the lack of extant texts to help explain the context of word use and phrases. We thus frequently have to look to its much better documented Ohio Valley sister language Biloxi for context and examples appearing in Biloxi texts. We also discuss our process of forming new words, neologisms, in a language long dormant. However, especially in the realm of discourse and pragmatic usage, questions remain as to the nuanced meanings created by certain affixes. Yesa:sahí was not only the mother tongue of Yesą peoples but also once served as a trade language around the large Occaneechi trading center. What we learn from Yesa:sahí's use as a trade language is that it is flexible in adapting to the needs of non-native speakers, including those who spoke English or other Indo-European languages. We keep this flexibility in mind during the process of revitalization, especially in those inevitable cases where we may not have context or examples for certain word usage and grammatical elements.

Keywords: Tutelo-Saponi-Monacan, revitalization, Siouan, Living Tongues Living Dictionaries

1. Introduction

In this paper, we discuss our work on Yesa:sahí (Tutelo-Saponi-Monacan) reclamation and revitalization, including our work on the online Living Dictionary and certain aspects of Yesa:sahí grammar, particularly in the realm of morphosyntax and suffixation, as a basis for new word creation.¹ We discuss suffixes that modify the meaning of nouns and verbs and their use that are evident from our analysis of the language. We also discuss the challenges of revitalization for contemporary Yesą tribes and descendants as well as the difficulties in analyzing data and understanding morphology with, at times, indistinct meanings and environments. Yet, despite

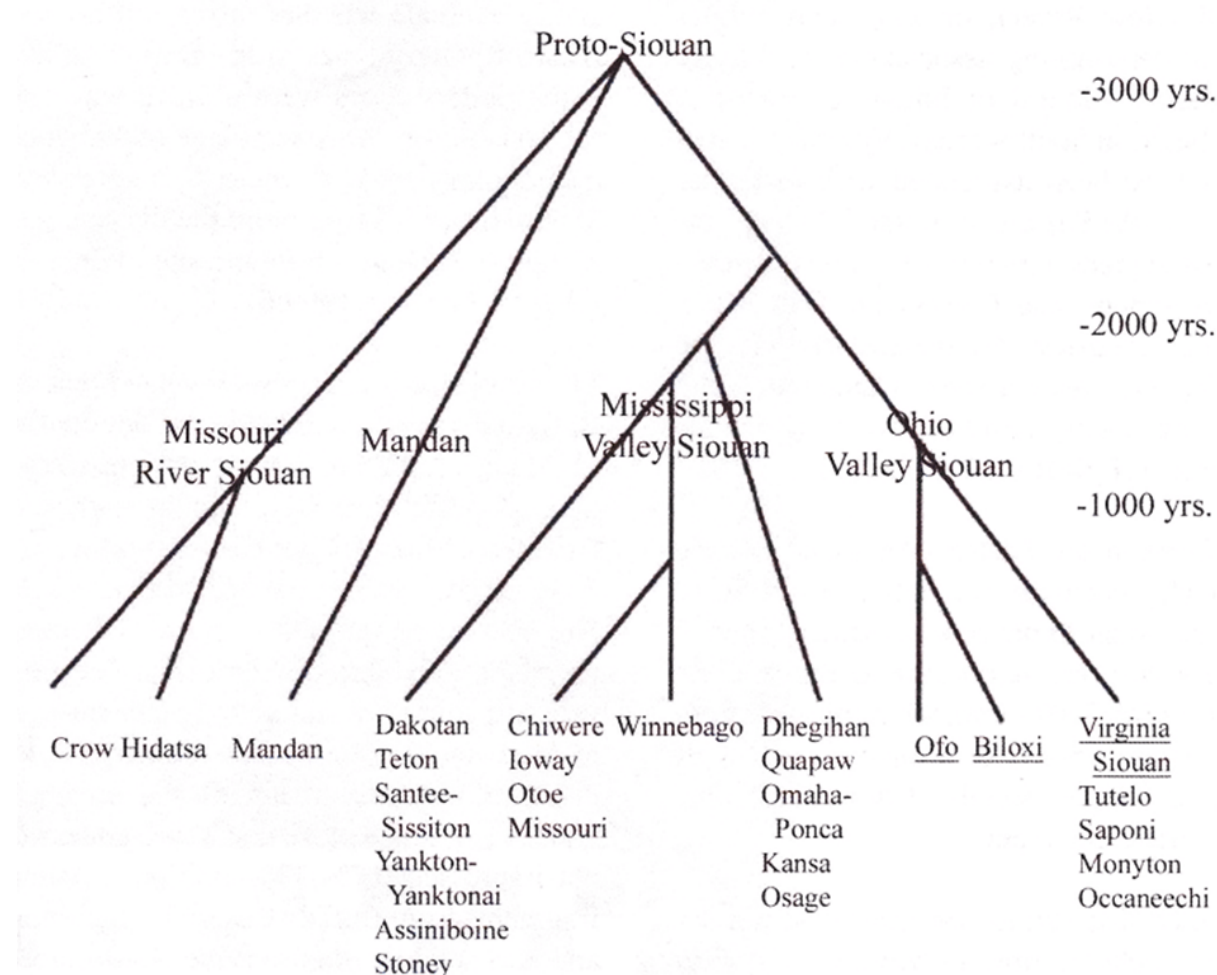
¹Language reclamation is defined as a “larger effort by a community to claim its right to speak a language and to set associated goals in response to community needs and perspectives” (Leonard 2012), while language revitalization is focused primarily on developing new speakers (Hinton 2001).



the challenges, Yesa:sahí reclamation and revitalization are underway, with Yesa descendants reclaiming their heritage and ancestral language.

Tutelo, Tutelo-Saponi, or what some contemporary descendants call Yesa:sahí (*yesa* ‘people’ + *sahí* ‘speech’), is a Siouan language. It is part of the Southeastern, or Ohio Valley (OV), branch of this family that also includes Biloxi and Ofo, as shown in Figure 1. Yesa:sahí, like other Siouan languages, is moderately agglutinative with a predominant subject–object–verb (SOV) constituent order. Yesa:sahí is the most conservative of the OV Siouan languages and maintains, for example, the Siouan initial *w-* or *m-* in words like ‘water,’ *mani*, which Biloxi and Ofo lost (*ani* ‘water’) as well as the active-stative verb split that Biloxi and Ofo no longer have. Unfortunately, whatever written texts existed in the language no longer survive, making language reclamation and revitalization more challenging, as we will discuss. The language has been little studied and published by scholars but is the focus of an intensive reclamation and revitalization campaign by Yesa descendants throughout North America.

Figure 1: Siouan language cladogram/family tree (based on Rood 1979).



The Tutelo-Saponi (Monacan) Living Dictionary is an online application actively managed by the authors and other community members.² We and other scholars are reviewing all Yesa:sahí

²To access the dictionary: <https://livingdictionaries.app/tutelo-saponi/entries/list>.

linguistic materials, creating new words, developing curriculum materials, and uploading audio files of words and phrases for use of Yesą peoples and others. Yesa:sahí is spoken to varying degrees by members of tribes and communities in North Carolina, Virginia, Ohio, New York, and Ontario, Canada, though it currently has no fluent speakers.³

As noted in Sutton & Kaufman (this volume), Biloxis and Ofos remained largely to the south in closer contact with Muskogean language speakers and formed part of Mississippian Culture (ca. 1000–1700 CE; aka Mississippian Ideological Interaction Sphere [MIS]).⁴ They also joined the Lower Mississippi Valley (LMV) sprachbund, or language area (Kaufman 2014, 2019). Yesą remained to the north, interacting primarily with Algonquian and Iroquoian language speakers.

2. Prior scholarship

Labeled “extinct” by some scholars and researchers, Yesa:sahí has been documented since the 1670s and is a living language for Yesą descendants throughout North America. Early explorers of the Piedmont, eastern Virginia and North Carolina—John Lederer, Abraham Wood, and William Byrd—recorded Saponi and Tutelo place names, later confirmed to be Siouan. Later, John Fontaine encountered the Saponi Nation at Fort Christanna in 1716 and recorded a small vocabulary of forty-six words, of which twenty-three are known to be Siouan. The other words may be Algonquian or Iroquoian, which reflects the ethnic and linguistic diversity of the Saponi Nation at this time as well as perhaps Yesa:sahí’s use as a trade language. The Saponi Nation and its allies, including the Tutelos, made peace with their former Iroquoian enemies in 1722, and a large portion of the Tutelos and Saponis moved north, eventually settling on the Six Nations Reserve in Ontario, Canada, leaving other communities south within their traditional territories (DeMallie 2004:286–300, Oliverio 1996:1–19).

On the Six Nations Reserve, the language endured longer and was documented by scholars. Horatio Hale fostered academic interest the Tutelo language in 1870 and confirmed it as Siouan. Other researchers included James O. Dorsey, J. N. B. Hewitt, Edward Sapir, and Leo J. Frachtenberg. Frank G. Speck recorded Tutelo materials while documenting the Tutelo Spirit Adoption Ceremony and other ceremonial and social dances in the 1930s (Oliverio 1996:6–19). One source of language information rarely mentioned is ethnomusicologist Gurtrude Kurath’s work on Tutelo rituals in the 1940s, published in 1981. Kurath noted how “the language was not as obsolescent as the linguists thought. In 1940, there were still a number of fluent speakers of the Tutelo language” (1981:5). Wallace Chafe interviewed Jane Owl, a Cayuga from Six Nations

³For a more in-depth discussion of Yesą history, see Sutton & Kaufman (this volume).

⁴What is termed “Mississippian Culture” (a.k.a. Mississippian Ideological Interaction Sphere [MIS] and Southeastern Ceremonial Complex [SCC]) was a sociopolitical and religious tradition ca. 1200–1700 CE that spread over a broad swath of North America from what is now southern Canada down to northern Florida, sharing certain motifs (such as the Quetzalcoatl-like flying serpent iconography) with probable influence from Mexico. Mississippian Culture is generally linked with the “Moundbuilders” since Mississippian Culture involved the creation of large cities (e.g., Moundville, Bottle Creek, Haynes Bluff, Etowah) at the heart of which were one or more several large earthen mounds topped by temples or elite residences surrounded by one or more plazas (serving as ceremonial spaces and/or marketplaces), often surrounded by palisades and sentry towers manned by warriors. These cities were surrounded by farms, especially for the growth of maize. Although not representing a single “empire” with centralized rule, individual cities and territories shared certain cultural or ideological motifs, often presided over by elites.

at the Seneca-Cayuga Green Corn Festival in Oklahoma in 1961. She was able to remember a few numbers, some of which are confirmed Tutelo. In 1982, Marianne Mithun interviewed Albert Green, who had spoken Tutelo in his childhood but had not spoken it since. Mithun (1981) collected words from Green through much prompting, using older sources. These materials have not been fully analyzed and may hold additional linguistic value (Mithun p.c.). The last individuals with living knowledge of the language, having heard it spoken consistently, passed away in Ontario in 1982 and 1991 (Roberts 2020:14).

Yesa:sahí was published most thoroughly by scholars as part of academic work. Oliverio produced her well-researched Ph.D. dissertation (1996) and culled together most of the known linguistic materials. As a dissertation, Oliverio's audience was predominantly Siouanists and linguists. It was difficult for community members and nonlinguists to adequately make use of. Roberts's Master's thesis (2020) aims to make the grammar more palatable for community members and provide a basis for new word creation.

3. Language reclamation and revitalization

The process of reclaiming or revitalizing a language that no longer has native speakers can be a daunting, painstaking, and tedious endeavor. It involves acquiring an intimate base knowledge of the grammar and an understanding of how words are formed in the language in order to create new words, or *neologisms*, for concepts that did not formerly exist, for words such as refrigerator, airplane, and automobile.⁵

The earliest known effort at Yesa:sahí revitalization was done by Haliwa-Saponi elder Arnold Richardson in the late 1970s and early 1980s. As a teenager, Haliwa-Saponi tribal citizen Dr. Marvin Richardson learned about Saponi from Arnold Richardson and began researching the language to find it was mutually intelligible with Tutelo, which was more extensively documented than Saponi. Almost simultaneously and independently, Marvin Richardson and Lawrence Dunmore III, of the Occaneechi Band of the Saponi Nation, began studying and revitalizing the language in the early 1990s.

In 2021, the first author of this paper, Marvin Richardson, and tribal citizen Matthew Richardson, both members of the Haliwa-Saponi Tribe of North Carolina, and independent linguistic anthropologist David Kaufman began working with the Living Tongues Institute of Oregon to develop an online Tutelo-Saponi Living Dictionary, a work still in progress. Roberts provides monthly language classes online, and others are teaching and learning the language in person and online throughout the country. In 2022, tribal citizens and Yesą descendants came together to form the nonprofit Yesa:sahí Language Project in order to work collaboratively between groups, standardize the language, and pool resources. Plans are in place to develop pedagogical materials and a learner's grammar.

Through the Living Dictionary project and other revitalization efforts, we have identified new morphemes and linguistic attributes as well as clarified morphemes and concepts identified by Oliverio (1996). This aids in the process of language revitalization using the comparative method, that is, comparing Yesa:sahí grammar and vocabulary with that of other, especially closely related, Siouan languages.

⁵See new words created for these in §5.

For Yesa:sahí revitalization, we first check its close sister languages, Biloxi and Ofo, for exact or similar forms. The online Comparative Siouan Dictionary has been an invaluable resource in this regard (Rankin et al. 2015). Beyond that, we check words from languages in other branches of Siouan, such as Lakhota (Dakotan) or Osage (Dhegihan) (see Fig. 1). In the next sections, we review affixation and noun compounding as important tools for creating neologisms, and we provide examples of new words created using these methods.

4. Neologisms using affixation

The process of new word creation involves an intricate analysis of a language's grammar and its process of word formation. In this section, we examine new words developed both with the use of suffixes and with noun compounding.

Like other Siouan languages, Yesa:sahí has numerous ways to create new words. As in other Siouan and indeed many Native American languages (not to mention Turkic, Finno-Ugric, and other languages around the world), affixation (the use of prefixes and suffixes added to “root” words) is crucial to word formation and sometimes to creating slightly nuanced changes of meaning. Such forms include assertive or emphatic verb marking, topic marking on nouns, and suffixes that are used to slightly alter a word's meaning.

The suffixes *-kA*,⁶ *-nq*, and *-xti* have been used to create new words modeled after the same or similar suffixes in Biloxi, as follows.

4.1. The simulative suffix *-kA*

The simulative suffix *-kA* means ‘similar to’ or ‘having properties of,’ often with a meaning similar to English “-ish” or “-like” (e.g., largeish, birdlike). It is a suffix used in other Siouan languages, including in Biloxi and Hidatsa (Missouri Valley). Oliverio calls this a “root extension,” without further explanation of its exact meaning or usage. Under the entry for *ka* ‘root extension,’ she offers the following example:

- (1) *mapha-masa-(w)-o-ho-ka*
 cow-breast-LOC-EPEN-mix-EXT
 ‘churn’ (lit. ‘like mixing [the substance] at the cow’s breast’) (Oliverio 1996:211)

Oliverio also acknowledged another example using the “root extension” in the dictionary: *aka:theka* ‘hot, warm’ = *á-* locative, ‘on’ + *ka:the* ‘be hot’ + *-ka* EXT from *aka:the* ‘hot, warm.’ Based on this formation we thus get *saní:ka* ‘cool’ (“coldlike”) and *tapuničkaika* ‘electricity’ (“lightninglike”).

We see this suffix sometimes occurring in Biloxi, as in the words *kadêêska* ‘bird’ (*kadêêsi* ‘striped/spotted’ + *-ka*) (lit. ‘striped/spottedlike,’ ‘something spotted/striped’) and *čuutka* ‘lilac, purple’ (*čuuti* ‘red’ + *-ka*) (lit. ‘reddish’).⁷ The same occurs with Hidatsa *-ga*: *uaga* ‘sister-in-law’ (*ua* ‘wife’ + *-ga*) (lit. ‘wifelike’) (Boyle p.c.).

⁶A capital *A* is used here since it is an “ablauting” vowel in Yesa:sahí, varying between *a* and *e*. In Siouan languages, certain vowels ablaut, or change (sometimes called metaphony), usually alternating between *a* and *e*, but ablaut can also involve other vowels in certain positions.

⁷Current Biloxi orthography per Kaufman (2020).

Along with the examples Oliverio identified, we noted several other Yesa:sahí words that may use the similative:

- (2) *yádsté:ka*
yáto-sté:-kA
love-good-SIM
'love'
- (3) *isi:-ka*
bad-SIM
'evil spirit'
- (4) *yəphq-ka*
long-SIM
'long, longish, kind of long'

The suffix *-ka* is a particularly versatile one in the formation of neologisms, since it allows new word creation developed from vocabulary already attested in the language.

4.2. The suffix *-nq*

The suffix *-nq* is an agent nominalizer, added to a verb to indicate someone or something that does something habitually, like the English *-er* (e.g., doer, listener). There is an example of this suffix in Oliverio (1996:223): *kowahadónq* 'lead to where the singer is sitting.'

- (5) *asne-na*
steal-NOM
'thief, stealer'
- (6) *həq-na*
make/do-NOM
'maker/doer'

Using this suffix, we have created the Yesa:sahí forms *ó:nq* 'maker, doer' and *wa:ki:čhí:nq* 'dancer.' This is another fairly versatile suffix used for creating nouns from verbs.

4.3. *-xti* augmentative or 'real, genuine'

The suffix *-xti*, common across Siouan languages, is an augmentative or intensifier as well as meaning 'real, true.' There is one example of this in Yesa:sahí: *pha:xti* 'nose.' It is possible that the word *pha:* originally meant 'nose' but *-xti* was added when the meaning of *pha:* was semantically extended to include the whole head, thus *pha:xti* now only refers to the nose. This is similar to the Biloxi words *qksaapi* 'gun' and *qksaapixti* 'bow.' The word *qksaapi* was the original word for 'bow' in Biloxi; after the introduction of guns, the word's meaning shifted to be used for gun while *-xti* was added to distinguish the original word for bow from gun (i.e., bow is the "real" or "true" [first] gun).

5. Neologisms using compounding

Besides using established suffixes as a source of neologisms, another primary method of new word creation is through the use of noun compounding, as in:⁸

- | | |
|---|--|
| (7) a. <i>yíhí:-histé:k(i)</i>
tobacco-stone
'pipe' | g. <i>mq:tq:-mìkolaha:pi</i>
sky-canoë/boat
'airplane' |
| b. <i>čhɔ:gi-tq:-yìk</i>
dog-big-little/young
'colt, young horse' | h. <i>mq:s-okla:ka</i>
metal-speak
'telephone' |
| c. <i>ej:k-athi: (ej:ki-athi:)</i>
God-house
'church' | i. <i>mq:s-čhɔg(i)-tq</i>
metal-dog-big
'car' |
| d. <i>oyilana:h(a)-athi</i>
read-house
'school' | j. <i>san(i)-okhú</i>
cold-box
'refrigerator' |
| e. <i>oyilana:h(a)-athi:-tq</i>
read-house-big
'college/university' | k. <i>aka:th(i)-okhú</i>
hot-box
'oven' |
| f. <i>tapuničkaik(a)-wasu:ti</i>
lightning/electric(ity)-brain
'computer' | |

6. Challenges to language reclamation and revitalization

There are many challenges inherent in language reclamation and revitalization. For example, understanding speaker-centered discourse marking such as those we will see using the suffixes *-se*, *-sel[a]*, and *-ya* is difficult without actual native speakers who can naturally intuit when these types of markers should be used and what nuances of meaning they create.

There are also phrases that can seem confusing to non-native speakers, such as:

- (8) *hu:k mq:sq:-ya mqi-ma-ɔ:-wa wqcék mqi-latku:se-ta*
all knife-TOP 1pl-?-do-REAL stick 1pl-cut-IRR
'We all using knives cut stick(s)' (modified from Oliverio 1996:301)

In (8), we must ask why both realis (declarative) *-wa* and irrealis *-ta* are used in the same phrase. We suspect that in this case, the irrealis or potential suffix *-ta* is used to convey the idea of "in order to," thus, 'We are using knives in order to cut sticks,' focusing on the present actual use of the knives while leaving the final goal of cutting sticks in the realm of ongoing uncertainty or a goal yet to be achieved. But, lacking any living native speakers with whom we can consult to ascertain this, such deductions can now only remain in the realm of educated best guesses.

⁸Neologisms with vowels in parentheses are vowels deleted in compound formation.

6.1. Topic marker *-ya*

Focus and topic marking fall under the extragrammatical domain of discourse, or pragmatic, marking. Such marking is especially difficult to pin down in a language that no longer has native speakers, since discourse markers are subtly employed, often at speaker discretion, to aid the listener in comprehension. Thus, native speaker intuition is important in this domain. In Yesa:sahí, it is especially difficult to identify such features since, unlike with Biloxi for example, there are no written texts that demonstrate their use in the spoken language or in storytelling.

One of the current authors previously analyzed the Biloxi suffixes *-di* and *-yq* as focus and topic markers, respectively (Kaufman 2008). The topic marker *-ya/-yq* is generally used with a person or an object that is culturally salient and well known or has been mentioned previously in discourse. The latter also occurs in Yesa:sahí, which we also gloss as a topic marker, referring to old or familiar information rather than newly given information as conveyed by a focus marker.⁹ In Biloxi we have:

- (9) *Ayaa xohi-yq thê-yê*
 person/woman old-TOP kill-CAUS
 ‘He killed the Old Woman’ (Dorsey & Swanton 1912:44)

In (9), the Old Woman is a prominent figure in Biloxi mythology, so, since she is culturally salient and well known, the speaker uses the topic marker to identify her as ‘that one who is known to us.’ Unfortunately, since there are no extant Yesa:sahí texts, we cannot now know which characters may have figured prominently in Yesa mythology.

- (10) *hącek-ya wa-ktam-wa*
 stick-TOP 1SG.A-break-REAL
 ‘I broke the stick in pieces.’ (Dorsey 1882)

In (10), it is likely that the stick is already known or has already been established in discourse, and the speaker is thus emphasizing “the one you already know about or that I have already mentioned.” Again, since we have no extant Yesa:sahí texts, we cannot know exactly how the discourse actually went, but, based on its use in Biloxi, we can make an educated and reasonable assumption.

While not necessarily required by a language’s grammar, such discourse marking, in the realm of speaker preference or desire for clearer communication, remains an interesting but difficult to pin down topic of Siouan and indeed other especially non-Indo-European languages around the world. Much more analysis on these markers is needed.

6.2. The suffix *-i*

The suffix *-i* in Yesa:sahí remains somewhat obscure. It appears used especially with kinship and body part terms (e.g., *yite:kai* ‘your son,’ *wįphasu:i* ‘my head’) or with other things that are considered inalienably possessed (an intrinsic part of the possessor and thus inseparable from it). It also occurs on terms like ‘chief,’ *e:kowe:i*, and ‘warrior,’ *e:luta:qi* (Oliverio 1996:188), perhaps a marker of respect, indicating the perceived unequal status between speaker and person addressed

⁹The equivalent of the Biloxi *-di* noun focus (new information) suffix has not yet been found in Yesa:sahí.

or talked about or a reverential marker for something culturally important, like the example *Okahu:k Ama:i* ‘land of all lands’ (*ama* ‘land’ + *-i*), a place name given in Sutton and Kaufman (2023, this volume). In this case, this suffix somewhat resembles Biloxi *-di*, but Yesa:sahí *-i* is more difficult to ascertain. Oliverio (1996) mentions that *-i* is an indefinite marker (similar to English ‘a/an’), but the data, with examples often referring to specific or possessed body parts, kin, or objects that would seem unlikely to be “indefinite,” often do not bear out this interpretation.

6.3. Assertive or emphatic suffixes *-se* and *-l(a)*

In Yesa:sahí, the suffixes *-se* and *-la* (often reduced to simply *-l*) serve to give more emphasis or immediacy to a verb. The *-l(a)* assertive appears to be used only by men, while *-se* can be used by men and women (Oliverio 1996:121).

- (11) *ki-le:-ta-se*
 VERT-go-IRR-ASRT
 ‘one will go home’ (Oliverio 1996:232)
- (12) *wa-lakpe-se*
 1SG-drink-ASRT
 ‘I drink’ (Oliverio 1996:228)

This is equivalent to the *-di* suffix sometimes used on verbs in Biloxi (not gender-specific), as in:

- (13) *Eke-kq¹⁰ wahe-di*
 then-DS squall-ASRT
 ‘And then she squalled (cried)’ (Dorsey & Swanton 1912:55, Kaufman 2020:298)

7. Positional auxiliary verbs

Another challenge is in the use of positional auxiliary verbs, which is something that demands further analysis across Siouan languages, including in Yesa:sahí. One of the few examples available of this in Yesa:sahí is:

- (14) *Mqi-o-laske-ta kohoc(e) mąk-hiye-yuk(e)*
 1PL-LOC-cut-IRR hole 1PL-CAUS-MOVE
 original: *máolaskéta kohótcmanh hiyéyuq*
 ‘We will cut a hole tomorrow’ (Oliverio 1996:223)

Example (14) demonstrates the use of the positional auxiliary *yuke* MOVE indicating, as in Biloxi, continuing or ongoing action, that the act of cutting is, or will be, ongoing. (Example 14 is probably better translated as ‘We will be cutting a hole tomorrow.’) Such positional auxiliaries are evident in Yesa:sahí (STAND, SIT, LIE/RECLINE, MOVE) as they are used in other Siouan languages,

¹⁰Biloxi, like Hidatsa and Mandan, has a switch-reference marking system: *ha* used at the end of a clause indicates that the next clause contains the same subject as in the one prior, but *kq*, as used here, refers to a new or different subject from the one in the prior clause. The Muskogean languages Choctaw and Chickasaw also use a similar such system. There is currently no such switch-reference system known in Yesa:sahí.

although which are used with particular nouns, and when, can be complex (not always corresponding to actual physical position) and needs further analysis.¹¹

8. Writing system

A fully standardized writing system for Yesa:sahí has not yet been fully established. Currently, the Living Dictionary works to standardize phonetics and pronunciation of the language, while recognizing and preserving dialectal variants. This process of standardization includes a review and analysis of original language materials, comparative linguistics, and, in some cases, a deviation from the phonemicized system created by Oliverio (1996). We have made progress in this regard in, for example, the establishment of the unaspirated versus aspirated stops *p*, *t*, *k*, *č* and *ph*, *th*, *kh*, *čh*. In many cases, *b* and *p* are indistinguishable in Yesa:sahí, depending on the word. Both phonemes appear word initially, but *p* is often *b* intervocalically. The same is true for *t* (*d*) and *k* (*g*). The voiceless stops *p*, *t*, *k*, *č* often become voiced *b*, *d*, *g*, *j* in word-initial position as well as intervocalically within words.

We have established the use of the colon : to mark vowel length and the use of accent marks over stressed vowels, but these have not yet necessarily been finalized. We have changed *w-* to *m-* in the first-person plural verb conjugation to more accurately reflect its predominant occurrence in the data.

While attempting to standardize pronunciation and spelling as much as we can, we try to note and reflect, where possible, alternative (dialectal) pronunciations and spellings. Such challenges are ongoing as we work to further analyze and refine Yesa:sahí language data.

9. Yesa:sahí as a trade language

Oliverio & Rankin (2003) noted that Yesa:sahí once served as a trade language, and evidence of this is apparent in our ongoing revitalization work. This aspect of the language has been little discussed. Certain clues give us insight into Yesa:sahí's use as a trade language since, in certain cases, it underwent simplification and streamlining for use by non-native speakers. This evidence includes using *hu:k* 'all' for plural, as in:

- (15) *hu:k* *yi-luka-hi* *ta*
 all 2P-turn-HORT POT(IRR)
 'You will turn it over' (Oliverio 1996:86)

As Oliverio states, "this usage of the adverb 'all' to mark plurality and the disappearance of verbal suffixes (i.e., *-pu* and *-hele*) is consistent with the hypothesis that Tutelo, as well as Saponi, was used as a trade language, and thus that the speakers were simplifying its complex verbal morphology" (1996:86–87).

There is also the leveling of a set of instrumental prefixes that originally had two other forms: *lu-* 'by hand' and *nq-* 'by foot' were both leveled to *la-*, which was originally a prefix

¹¹See Eschenberg (2005) for an in-depth treatment of the Dhegihan Omaha-Ponca positional auxiliary article system; also see Kaufman (2013) for a discussion of Biloxi positional auxiliaries.

meaning only ‘by mouth.’ While in other Siouan languages, including in Biloxi, these instrumental prefixes remain distinct, the obvious consolidation of these prefixes in Yesa:sahí would seem to indicate either simplification of these three prefixes to a single one, or the consolidation may have arisen through nonnative speaker error that became standard usage.

10. Conclusion

Reclamation and revitalization of Yesa:sahí is underway, and the authors of this paper have been heavily involved in this endeavor through our work with the Living Tongues Institute, in particular with the Living Tongues Online Dictionary project. During the course of our work, we face many challenges as we analyze the grammar and sometimes extragrammatical (discursive) elements of the language.

The revitalization of Yesa:sahí is somewhat hampered by the lack of extant texts to help explain the context or give examples of word use and phrases. We thus frequently have to look to its much better documented Ohio Valley sister language Biloxi for context and examples appearing in texts. Luckily, several Yesa:sahí suffixes are very close or even identical to those in Biloxi, which makes creating neologisms a simpler task in this regard. However, especially in the realm of discourse and pragmatic usage, questions remain as to the nuanced meanings created by certain suffixes, as with the verbal assertion markers (*-se*, *-sel[a]*) and the nominal topic marker *-ya*.

Yesa:sahí was not only the mother tongue of Yesá peoples (Tutelos, Saponis, Monacans, and others), but it also once served as a trade language, likely around the large Occaneechi trading center, among people of different ethnicities speaking other languages as their native tongues. What we learn from Yesa:sahí’s use as a trade language is that it is flexible in adapting to the needs of non-native speakers, including those who spoke English or other Indo-European languages. This flexibility should be kept in mind during the process of reclamation and revitalization, especially in those inevitable cases where we may not have context or examples for certain word usage and grammatical elements.

Clues in ongoing research suggest that there may be more Yesa:sahí language sources to find. We remain vigilant for any new sources and materials. In any case, Yesa:sahí is in the process of reclamation and revitalization by Yesá descendants. We are at the forefront of the revitalization process and hope that the language will once again be spoken and heard on a daily basis.

Abbreviations

A	active (versus stative verb)	LOC	locative
ASRT	assertive	NOM	nominative
CAUS	causative	PL	plural
DS	different-subject (versus same-subject switch-reference marking)	POT	potential
EPEN	epenthetic	REAL	realis
EXT	extension	SG	singular
HORT	hortative	SIM	similative
IRR	irrealis	TOP	topic
		VERT	vertitive

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Revisiting Iroquoian and Caddoan: Inflectional and derivational morphology*

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Abstract: This study provides a much needed revision to the literature connecting the Caddoan and Iroquoian language families. It takes as a foundation the groundbreaking work of Chafe (1973, 1976, 1979) and Rudes (1974). Since these publications, a veritable revolution in Caddoan and Iroquoian linguistics has taken place. This paper restarts the work of Iroquoian and Caddoan comparison by focusing on works published in this revolutionary period with particular focus on inflectional and derivational morphology in the nominal and verbal domains. Although it does not provide a definitive answer to the question of genealogical relatedness, it does provide clear avenues for future research.

Keywords: Caddoan, Iroquoian, Macro-Siouan, Trans-Mississippian Connection

1. Introduction

This paper renews the discussion on the question of a genealogical relationship or intense historical contact between Caddoan and Iroquoian. Though the question of the genealogical relatedness of the Caddoan, Iroquoian, and Siouan languages has a long history, no significant work has been published since the foundational studies of the 1960s and 1970s primarily by Chafe (1964, 1973, 1976). During this pause there has been a revolutionary improvement in the documentary and descriptive records of most languages within both families. For Caddoan, the descriptive research largely took place in the 1970s (Rood 1969, Parks 1976, Merlan 1975, Chafe 1979) and then again in the 21st Century (Chafe 2018). During the gap between these time periods there was a tremendous leap forward in documentation, largely recorded by Douglas Parks, David Rood, and Wallace Chafe. Further description in the family is ongoing and the literature should be considered highly underdeveloped. Modern description in Iroquoian languages begins with Lounsbury (1953), however the bulk of the comprehensive descriptive record has only reached presses in the 21st Century. Though the dictionary-writing has been highly successful, most languages remain without a comprehensive grammar or large, well-glossed collection of texts. This situation is summarised in the following table.

*Thanks to Ryan Kasak and Armik Mizayan for all their hard work. Thanks also to the ever helpful comments of Marianne Mithun and the support of Hunter Brown and Jean Rohleder.



Hancock, J. Drew. 2025. Revisiting Iroquoian and Caddoan: Inflectional and derivational morphology. In Ryan M. Kasak & Armik Mirzayan (eds.), *Proceedings of the 42nd and 43rd Siouan and Caddoan Language Conferences*, 69–101. Norman, OK: Siouan and Caddoan Languages Conference. DOI: [10.5281/zenodo.14368375](https://doi.org/10.5281/zenodo.14368375)

Table 1: Some major sources in Iroquoian and Caddoan Linguistics

Caddoan			
	Grammar	Dictionary	Texts
Caddo	Melnar (2004), Chafe (2018)	Chafe (2018)	Chafe (1977)
Wichita	Rood (1969, 1976)	Rood (n.d.[a],[b])	Rood (1977)
Kitsai			Lesser (n.d.)
Arikara	Merlan (1975)	AISRI (2016)	Parks (1991)
Skiri	Parks & Pratt (2008)		Parks (1977)
South Band	Parks (1976)	AISRI (2016)	Parks (1977)
Iroquoian			
	Grammar	Dictionary	Texts
Cherokee	Montgomery-Anderson (2008)	Feeling (1975)	Feeling, Pulte & Pulte (2018)
Tuscarora	Mithun (1974)	Rudes (1999)	Rudes & Crouse (1987)
Wendat	Lukaniec (2018)		
Wyandot	Kopris (2001)		Barbeau (1960)
Seneca	Chafe (2015)	Chafe (2013)	Chafe (2015), Mithun & Woodbury (1980)
Cayuga	Dyck et al. (2024)	Froman et al. (2002)	Mithun & Woodbury (1980)
Onondaga	Woodbury (2018)	Woodbury (2003)	Mithun & Woodbury (1980), Woodbury (1992)
Oneida		Michelson & Doxtator (2002)	Michelson, Kennedy & Doxtator (2016)
Mohawk	Bonvillian (1973), Martin (2018)	Kanatawakhon (2002)	Mithun & Woodbury (1980), Williams (1976)

Given that this foundational descriptive period is to some degree mature—in that most languages have some kind of grammar and dictionary and many have the Boasian Trilogy—it is now time to restart the comparison of these families. A strong caveat must still be placed on this work: that the proto-families are not well reconstructed. The major works in the reconstruction of Proto-Iroquoian are Mithun (1979) on Proto-Northern Iroquoian and Julian (2010) on Proto-Iroquoian. Major concerns remain despite these efforts, particularly due to the very early deaths of several languages,¹ and the poor understanding of Cherokee dialectology. The state of the Proto-Caddoan literature is much worse still. While study of the topic began quite early with Taylor (1963) and Chafe (1979), only three studies of historical Caddoan have followed this: Parks (1979) on cognate rates and time-depth in Northern Caddoan, Sutton (2017) on the development of the Caddoan verb, and Hancock-Mac Tamhais (2023b) on phonological and lexical issues in the reconstruction of the Proto-Caddoan word for ‘woman’. Given that there is no work providing a cross-Caddoan set of core cognates with reconstructions and a relative chronology of sound changes, Proto-Caddoan should—in this author’s opinion—be considered almost completely unreconstructed. With these limitations in mind, this paper should be read as preliminary and exploratory. It highlights areas of inescapable lexical resemblance between the families in core morphological domains often resistant to change which could serve as avenues for future research into the Trans-Mississippian Connection. The paper begins with some causes for intrigue namely; typological similarities, era and homelands of the proto-families, and archaeogenetic evidence. It then moves to on the rather small set of affixes which occur with nouns. Last, the plentiful verbal affixes are highlighted.

2. Setting the scene

Research into the historical linguistics of the Eastern Woodlands has a long tradition, represented best by the advanced reconstructions of Proto-Siouan (Rankin et al. 2015) and Proto-Muskogean (Broadwell 2005). Research into inter-family connections in the region began at least as early as Latham (1846) on Cherokee and Catawba. Beginning with Morgan (1871) was the linking of Siouan and Iroquoian as families. This was continued as the Hokan-Siouan family in the infamous lumping of Sapir (1929) where Iroquoian and Caddoan were first introduced as a subgroup. Later works within what came to be known as the Macro-Siouan hypothesis either did not mention the Iroquoian and Caddoan languages—instead focusing on Siouan-Catawba and Yuchi—or assumed this Iroquoian-Caddoan subgrouping with key publications in the general Macro-Siouan theory being Carter (1980), Chafe (1964, 1973, 1976), Kasak (2016), Rankin (1998), and Rudes (1974). Following the independent reconstruction of Proto-Siouan culminating in Rankin et al. (2015), a direct relationship between Proto-Iroquoian and that family has looked increasingly less likely. This study has therefore chosen to look at the lower-level proposed Iroquoian-Caddoan relationship. In respect to this connection being agnostic to the inclusion of Siouan-Yuchi, this paper will term this possible relationship the Trans-Mississippian Connection.² This section will provide a

¹Laurentian, Nottoway, and Susquehannock are scarcely documented, and Neutral, Erie, and Wenro are completely undocumented. Also see Kopris (2001:361-377) and Lukaniec (2018:8-11) on the position of Wyandot within the Iroquoian family.

²Trans-Mississippi has been chosen here as it is neutral towards—often colonial—language names and instead highlights the geographic distribution of the families.

background in the proto-families, highlighting areas where there is significant overlap in their histories and reconstructions.

2.1. Homelands, time depths, and archaeogenetics

Aside from an ultimate Beringian and Siberian origin of the Caddoan and Iroquoian languages, linguistic inquiry has not yet been able to comment on the distributions of these families outside of the Greater Mississippi. Possible dates of the earliest reconstructable languages have been proposed using glottochronology (Lees 1953, Swadesh 1950, 1955) and ASJP (Holman et al. 2011). A list of all proposed dates organised by method is included below.

Table 2: Iroquoian and Caddoan time depths

	Glottochronology	ASJP
Proto-Caddoan	>3500 (Swadesh and Welfish 1955 via Hughes 1968:81-82)	4828 (Holman et al. 2011:859)
Proto-Northern Caddoan	2000 (Parks 1979:205)	3035 (Holman et al. 2011:859)
Proto-Iroquoian	3500-3800 (Lounsbury 1961:11)	4,624 $\pm$ 1,341 (Schillaci et al. 2017:467) 4855 (Holman et al. 2011:859)
Proto-Northern Iroquoian	2,400-1,900 (Lounsbury 1961:11)	2,100 $\pm$ 609 (Schillaci et al. 2017:467) 3176 (Holman et al. 2011:859)

As Table 2 shows, the proto-families' time depths seem to appear at the same times across various lexicostatistical methods. While this would be otherwise unremarkable, their proposed homelands might be rather close as well. The Proto-Caddoan homeland, following the summary of archaeological and linguistic evidence presented in Hughes (1968), was in the plains-woodlands transition area of the present-day eastern borders of Texas and Oklahoma. In contrast to the seeming consensus of the Proto-Caddoan Urheimat, the question of Proto-Iroquoian origins has enjoyed a long running debate in the literature. While a full treatment of this discussion is necessary here (see Birch 2015 for a recent overview), there are two general positions: Proto-Iroquoian was spoken in the Great Lakes, i.e. the Northern branch is "in-situ" (Buell 1979, Lounsbury 1978, Mithun 1984, Schillaci et al. 2017), or Proto-Iroquoian was spoken South of the Great Lakes, known as the "migrationist" proposal (Snow 1995, 1996, Stothers 1977). Schillaci et al. (2017) represents the most recent study on this topic. It argues in favour of the in-situ hypothesis on the basis of cognates for native flora and dateable technological or biological introductions, namely: native trees, corn, beans, the bow, and smoking pipe. While their study clearly confirms the in-situ hypothesis for Proto-Northern Iroquoian, Cherokee does not have cognates for relevant native flora to the region and so the evidence can only show that the Southern branch probably broke away from the Northern branch prior to the introduction of corn and the bow, but after the introduction of the smoking pipe. Given that no region can be firmly established on their evidence, it cannot be ruled out that the Proto-Iroquoian homeland prior to their divergence was not more southerly or westerly, as granted in the conclusion to Schillaci et al. (2017) and the homeland distributions of Buell (1979) who places the most southerly border of Proto-Northern Iroquoian into Ohio and Pennsylvania, much closer to the Central Mississippi Valley homeland

presumed by Hughes (1968). Of course, given the plentiful navigable waterways in the Mississippi Basin, these homelands are not particularly far away by boat. The travel of people, culture, and goods up the Mississippi and Ohio rivers is well documented in the archaeological literature (Smith 1990, Wilson 2017), though the integration of archaeological findings with the work presented in this paper is an issue for the future.

In addition to these points of overlap, archaeogenetics offers hard data pointing to a shared origin of Caddoan- and Iroquoian-speaking populations. Lawrence et al. (2010) sampled human remains from the Mobridge (39WW1), Larson (39WW2), and Leavenworth (39CO9) ancestral Arikara sites. The authors compared this mitochondrial DNA with that of other Indigenous populations in the Eastern Woodlands that had been previously reported. They found that the ancestral Arikara populations shared ancient ties with Cherokee populations as well as ancient and more contemporary ties with Siouan and Northern Iroquoian DNA. They also had recent admixture with Algonquian populations, but no ancient ties to these populations were found. While this is highly suggestive of an ancient and mid-range connection between Caddoan, Iroquoian, and Siouan populations—essentially providing supplementary evidence for a Macro-Siouan proposal—study into the genetic history of the region has not progressed at all since this publication; likely due to the impacts of colonial research practices (see Raff 2022).

2.2. Proto-Caddoan and Proto-Iroquoian

This section will provide a comparative introduction to Proto-Caddoan (PC) and Proto-Iroquoian (PI) typology. Some attention will be paid to relative chronologies of sound changes however, as mentioned earlier, the development of contemporary Caddoan languages is highly understudied and so sound changes in this family are poorly understood. As a consequence the correspondences presented must be understood as only presumed rather than firmly known.

In his survey on Caddoan languages, Chafe (1979) notes that his reconstructed consonant inventory for Proto-Caddoan was almost exactly the same as Proto-Iroquoian, here represented by Julian (2010). In the inventory included below, the brackets around $*p$ and $*k^w$ represent the unsure reconstruction of this proto-phoneme between the works of Chafe (1979) and Hancock-Mac Tamhais (2023b). Note that the reconstruction of Proto-Northern Caddoan (PNC) in Taylor (1963) proposes that both $*p$ and $*k^w$ might be necessary, but further research in the languages has not yet substantiated this need, and I follow Chafe (1979) in assuming they were one and the same.

Table 3: A Proto-Caddoan and Proto-Iroquoian consonant inventory

$(*p)$	$*t$		$*k,(*k^w)$	$*ʔ$
	$*ts$			
	$*n$			
	$*s$			$*h$
$*w$	$*r$	$*j$	$*w$	

Regardless of if one follows the Chafe (1979) or Hancock-Mac Tamhais (2023b) reconstructions of Proto-Caddoan $*p/*k^w$, the consonant inventories of the proto-families are practically identical. With an inventory as small as this, it might be typologically unremarkable—and

therefore not likely to be a worthy site of comparison—that these would be identical, however it is notable that both families seem to lack /m/. If one follows the argumentation in Hancock-Mac Tamhais (2023b) that the proper reconstruction of Proto-Caddoan is with *k^w, then both families exceptionally avoid all bilabials. Given that the consonantal development of Iroquoian is well reconstructed and that this paper will mostly be comparing Proto-Iroquoian forms, it is unnecessary to provide a complete reckoning of the relative chronologies in this area and piece-meal discussion will be given where relevant. The Caddoan consonant correspondences are much less well understood and so the basics will be presented before continuing. Chafe (1979:226) represents the most recent pass at Caddoan consonant correspondences and this paper will assume that reconstruction as a base with but the modification to the reconstruction of *p following Hancock-Mac Tamhais (2023b) and the addition of the Kitsai reflexes. This correspondence set is represented in the table below.

Table 4: Caddoan consonant correspondences

PC	Caddo	Wichita	Kitsai	Pawnee	Arikara
*k ^w	b	w-, k ^w	k ^w	p	p
*t	d	t-, -ts	t	t	t
*k	k	k	k	k	k, tʃ
*ts	tʃ	ts	ts	ts	s
*s	s	s	s	s	ʃ, x
*w	p-, w	w	w	p-, w	w
*n	t-, n	n-, r	n	r	n
*r	t-, n	n-, r	n-, r~n	r	n-, r
*j	d-, j	h-, j	n-, j	r	h
*ʔ	ʔ	ʔ	ʔ, -Ø	ʔ	ʔ
*h	h	h	h	h	h

As can be seen from Table 4, the Caddoan consonants have mostly remained stable over their history. The notable exception to this is the development of the resonants. The *n and *r have fallen together in all languages except for Arikara and occasionally Kitsai where the *r remains distinct in intervocalic position but not word-initially. This presents a major problem for the reconstruction of some forms in the family as it is often difficult to tell whether a morpheme should be reconstructed with *n or *r especially as cognate rates—even among the Northern Caddoan languages—are quite low (Parks 1979).

The reconstructed vowel inventories differ more between the families. Consider first the vowel inventories of Proto-Caddoan and the contemporary languages (slightly modified from Chafe 1979:218):

Table 5: Proto-Caddoan vowels and their reflexes

PC	Caddo	Wichita	Kitsai	Pawnee	Arikara
*a	a	a	a	a	a
*i	i	i	i	i	i
*u	u	i	u/o	u	u
*a and *i in various sequences		e	e	e	e
uncertain origin					o

Proto-Caddoan is reconstructed as having a simple, cardinal three-vowel system. The Northern branch has innovated /e/ from *a and *i both in clusters and—at least in the case of Wichita—across syllables. Chafe (1979) notes some unsurety in the origins of Arikara /o/ and future work in the reconstruction of the family will have to answer this question. In contrast to the three-vowel system of PC, Proto-Iroquoian is reconstructed with seven vowels, as in the following from Julian (2010):

Table 6: Proto-Iroquoian vowel inventory

*i(:)	*u(:)
*e(:), *ẽ(:)	*o(:), *õ(:)
*a(:)	

Iroquoian vowels over their life span so far have been remarkably stable but changes resulting in Cherokee and Proto-Northern Iroquoian (PNI) are still worth noting. A summary of the change proposed in Julian (2010) is included below:

Table 7: First-level changes in Iroquoian vowels

Proto-Iroquoian	Cherokee	Proto-Northern Iroquoian
*i	i	*e
*i:	i:	*i
*e	e	*e
*e:	e:	*e
*ẽ	o	*ẽ
*ẽ:	o:	*ẽ
*a	a	*a
*a:	a:	*a
*u	u	*o
*u:	u:	*o
*o	o	*a
*o:	o:	*a
*õ	ã	*õ
*õ:	ã:	*õ

The most fundamental change to note is the loss of the length contrast in the development of Proto-Northern Iroquoian. Since this contrast has been fully maintained in Cherokee, one can

rely on the Cherokee cognate—should there be one—to show for the length in Proto-Iroquoian. In addition, Proto-Northern Iroquoian has largely but not completely maintained the qualities reconstructed in Proto-Iroquoian. The oral back vowels have cycled one level lower, with *u(:) replacing *o(:), and leaving *o(:) and *a(:) homophonous as /a/. Two other smaller but still meaningful changes also took place: Proto-Northern Iroquoian lowered *i to /e/, and Cherokee backed and denasalised *ẽ(:) to /o(:)/. As the reconstructed vowel inventory of PI is much larger than the that of PC, it is likely that regardless of the ultimate nature of the Trans-Mississippian Connection the comparison of these vowels will pose a complicated problem to the field.

This section has provided an overview of historical Caddoan and Iroquoian. It focused on areas of overlap in the proposed homelands, time depths, and archaeogenetics of the families showing that before 4000 years before present, contact or dispersal from a shared ancestral group is not only possible, but likely. The reconstructed phonological inventories also show promise. The reconstructed consonant inventories are either identical or differ in one consonant. The vowel inventories however provide a more complex picture with PC having a canonical three-vowel system and PI being reconstructed with a seven-vowel system. Further work in the Trans-Mississippian connection will have to be cognisant of the possibility for over-identifying cognacy with this possible many:one relationship in vowels. With this foundation now laid, let us turn to the morphological comparisons, beginning with the nominal domain.

3. Nominal morphology

The Caddoan and Iroquoian languages generally speaking have little in the way of nominal morphology compared to the elaborate verbal domain. Despite the relative paucity, this section will point to several areas where the families share strong lexical resemblances, namely: the noun-forming suffix, a locative, and a definiteness/nominal marker. Please note that when this study was first presented at the 42nd Siouan and Caddoan Languages Conference, it also included proposed resemblances between the feminine marker in Mohawk and PC, the populative in PNI and Proto-Panian, and the nominaliser in Caddo and PNI. The first was included due to an error in reading the Mohawk morphophonology,³ and the latter two cannot be solidly reconstructed without more comparison within Caddoan. Therefore these will not be included here.

Although the PC noun has not been reconstructed, it is reasonably clear from the descendant languages that it allowed a feminine gender marking prefix and several suffixes of various meanings, largely marking instrumental, locative, or diminutive notions. Very often, these suffixes were followed by the noun-forming suffix, which will be discussed in §3.1 below. It seems that only the root was strictly necessary, but that the noun-forming suffix was very common. A sketch of this structure is included in the table below with optional elements placed in brackets.

Table 8: Sketch of the Proto-Caddoan noun

(Feminine)	Root	(Derivation)	(Noun-Forming Suffix)
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The PI noun had a very similar structure. The left edge hosted a pronominal prefix which specified a number of inanimate noun classes or human genders (for a discussion of noun class se-

³Thanks to Marianne Mithun for pointing this out.

mantics see Mithun 2021, Hancock-Mac Tamhais 2023a). These third person pronominal prefixes developed during the Proto-Iroquoian stage and were not well-established by the dispersal of the Cherokee or even the Coastal group (Mithun 2021, Hancock-Mac Tamhais 2023a). Coming after the root were a small number of clitics of diverse functions and, in Proto-Northern Iroquoian, the noun-forming suffix. The development of the clitics is poorly understood and there are almost no cognates between Northern Iroquoian and Cherokee reconstructed in Julian (2010). This structure is presented in the table below, where the optional affixes are again in brackets.

Table 9: The Proto-Iroquoian noun

(Pronominal)	Root	(Clitics)	(Noun-Forming Suffix)
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From a comparative perspective these two reconstructed noun templates are remarkably similar. Optional gender and noun class inflection is the sole prefixal element in both proto-families. The roots take a selection of derivation-like suffixes or enclitics with meanings like diminutive, augmentative, or locative. The Northern Caddoan family also marked standalone nouns for instrument-hood, something marked on verbs in Iroquoian. Most nouns in PC and most nouns in PNI took a noun-forming suffix as well. Having sketched the nominal templates of both proto-families, lexical resemblances in this domain will now be presented.

3.1. The noun-forming suffix

Almost all languages in both families have a suffix which occurs on unincorporated nouns but not on incorporated nouns. This suffix serves no known purpose and simply occurs on most unincorporated nouns. In the Iroquoianist literature it is usually called the ‘noun-forming suffix’ or *NFS* and in the Caddoanist literature it has usually been called the ‘absolutive’. This paper will follow the Iroquoianist convention as the term ‘absolutive’ implies that this cannot occur on agents, which is not the case. Consider the following short data set from Onondaga:⁴

- (1) The noun-forming suffix in Onondaga
- a. *Waʔgyəthwáʔ* *neʔ ohnéhaʔ*.
 waʔ-k-yəthw-aʔ *neʔ o-hnéh-aʔ*
 FACT-1SG.A-plant-PFV NE 3.O-CORN-NFS
 ‘I planted corn.’ (Woodbury 2018:224)
- b. *Waʔgnəhayéthwaʔ*
 waʔ-k-nəh-a-yəthw-aʔ.
 FACT-1SG.A-corn-NVJ-plant-PFV
 ‘I planted corn.’ (Woodbury 2018:223)

The data set in (1) represents a minimal pair showing a morphological noun (see Mithun (2000) on the distinction between nominals and nouns in Northern Iroquoian) both unincorporated and incorporated into the same verb root. The noun root *-hnəh-* ‘corn’ occurs unincorporated with a pronominal prefix and a noun-forming suffix in (1a). When it is incorporated—as in

⁴Abbreviations follow the Leipzig Glossing Rules with the additions present in the Abbreviations section at the end of this article.

(1b)—it appears without either of these affixes. This same phenomenon is found in Arikara. Note that in Arikara orthography, capitalisation marks allophonic devoicing. Consider the following example:

- (2) The noun-forming suffix in Arikara
- a. *wah t'naákUx* *skuúnu'*
 wah ti:-na-kux *skun-u?*
 now PROX-GER-be.sitting.SB fur-NFS
 'Now this fur...' (Parks 1991:228)
- b. *iinareskuNIhuuNU*
 i:-na-ra-i-skun-rihun-u
 MED-PTCP-PORT-EV-fur-be.big-PFV.SB
 'where they have thick fur.' (Parks 1991:236)

In (2), the noun root *-skun-* 'fur' first appears excorporated from the verb *-kux* 'be sitting' where it occurs with the noun-forming suffix. When incorporated into a verb as in (2b), however, it appears without the noun-forming suffix.

This suffix is reconstructable to Proto-Northern Iroquoian but not to Proto-Iroquoian as Cherokee does not have a cognate. The suffix occurs across Northern Iroquoian with either a glottal fricative or a glottal stop; both occurring in most languages as allomorphs. It is often but not always preposed by a vowel which is usually /a/ but can also be a non-low front vowel. Julian (2010:75) reconstructs this back to Proto-Iroquoian as "a glottal stop preceded by */a/ when a root ended in a consonant." Although his final reconstruction is *-aʔ, it seems clear that the vowel is epenthetic and that the proper reconstruction—following his logic—is *-ʔ. The alternation between -h and -ʔ in the child languages is not discussed in any of the reconstructions of historical Iroquoian, though, given that it is widespread in the family and that there is no cross-family phonological alternation deriving one laryngeal from the other in _# position, it seems necessary to project both back as allomorphs. The reflexes and the reconstructions are included below.

Table 10: The Iroquoian noun-forming suffix

Proto-Northern Iroquoian	*-ʔ/*-h	
Tuscarora	-ʔ/-eʔ/-eʔ/-eh	(Mithun 1974:202)
Wendat	-aʔ/-h	(Lukaniec 2018)
Wyandot	-aʔ/-ah/-a	(Kopris 2001:341)
Seneca	-aʔ/-ah	(Chafe 2015:86)
Cayuga	-aʔ	(Dyck et al. 2014:17)
Onondaga	-aʔ/-iʔ/-h	(Woodbury 2018:80)
Oneida	-aʔ/-eʔ/-iʔ/-ʔ	(Michelson, Kennedy & Doxtator 2016:360)
Mohawk	-ʔ/-aʔ/-oʔ	(Bonvillian 1973:222)

The Caddoan noun-forming suffix is exceeding similar. All languages except for Kitsai include a glottal stop and a vowel. Kitsai presents a regular correspondence with the Cahniks branch⁵ of Ø:ʔ in word-final position and so it is probable that this is a full cognate. The vowel

⁵Following Sutton (2019), I have adopted the term 'Cahniks' for the branch also known as Pawneean. This term is the reconstruction of the shared endonym. Panian will be used to refer to both Pawnee languages as a whole.

may be either before—as in the Chaniks languages, or after the glottal stop—as in Caddo and Wichita. In Wichita, the vowel is an /a/ while all the other languages have /u/. Keeping in mind both the variation in vowel quality and in the order of stop and vowel, it seems possible that this vowel is also epenthetic and so I tentatively reconstruct *-ʔ for the noun-forming suffix in Proto-Caddoan and Proto-Northern Caddoan. The reflexes are summarised below in Table 11.

Table 11: The Caddoan noun-forming suffix

Proto-Caddoan	*-ʔ	
Caddo	-ʔuh	(Chafe 2018:15)
Proto-Northern Caddoan	*-ʔ	
Wichita	-(k)ʔa	(Rood 1969:7)
Kitsai	-u	(Vantine 1980)
South Band	-u(?) ⁶	(Parks 1976:97)
Skiri	-uʔ	(Parks & Pratt 2008:xvi)
Arikara	-uʔ	(Merlan 1975:54)

While the reconstruction presented in Table 11 above is tentative pending a better understanding of epenthetic processes in historical Caddoan, it is clear that the proto-form would be nearly homophonous with the independently reconstructed noun-forming suffix in Proto-Iroquoian. As this suffix is inflectional and is without obvious meaning or function, it seems very unlikely to be borrowed in the context of cross-linguistic norms (Thomason & Kaufman 1988).

3.2. A locative

Another lexical resemblance can be found in a locative morpheme. Both the exact semantics and the degree of attachment of this morpheme differs between languages within a family and between the families themselves. The morpheme in Caddoan seems to occur solely in the Cahniks branch, in which it has a rather general locative meaning. Here is a set of examples from South Band Pawnee:

- (3) A locative suffix in South Band Pawnee
- a. *Cahrikstahkat*
cahriks-rar-kat
people-PL-LOC
'among the people' (Parks 1976:107)
 - b. *Ripiktahkat*
ripi:k-rar-kat
egg-PL-LOC
'on the eggs' (Parks 1976:107)

⁶Note that texts differ in reporting a glottal stop here for South Band or not and it is possible that there was variation in the realisation.

- c. *Tuhrahu*^ʔ:tit *etkickat*
 ti-ut-rahui:tik-Ø e:t-kic-kat
 IND-DAT-dip-PFV breast-water-LOC
 ‘He dipped it in the milk.’ (Parks 1976:99)

The Cahniks languages are closely related and so their reflexes are all suffixes and are phonologically practically identical. The reflexes are summarised below.

Table 12: A locative suffix in Cahniks

South Band Pawnee	-kat	(Parks 1976:98)
Skiri Pawnee	-kat	(Parks & Pratt 2008:xv)
Arikara	-kaṭ	(Parks, Beltran & Waters 2007)

Northern Iroquoian languages have a strong lexical resemblance to this Cahniks morpheme in what is sometimes called the ‘lateral locative’ in Iroquoian linguistics. The morphological structure of the reflexes is somewhat varied with the root appearing in several child languages only with added material. There seem to be no obvious candidates for Cherokee or Ontarian cognates.

Table 13: The lateral locative in Northern Iroquoian

Proto-Northern Iroquoian	*-akt	
Tuscarora	-akt	(Rudes 1999:694)
Seneca	*-akt ⁷	(Chafe 2013)
Cayuga	-aktatye?	(Dyck et al. 2014:21)
Onondaga	-akt	(Woodbury 2003:244)
Oneida	-akta?/-aktōti/-aktati	(Abbott 2006:37)
Mohawk	-akta/-aktōtye?	(Bonvillian 1973)

Although Western Lakes languages—Wendat, Wyandot, Seneca, and Cayuga—either have no reflex of *-akt or have but artifactual reflexes, the presence of clear, productive Tuscarora and Central and Eastern Lake reflexes is enough to project this back to Proto-Northern Iroquoian. This Proto-Northern Iroquoian root *-akt would have had a meaning like “next to, beside” and so it is not a clear semantic match for the highly general Proto-Cahniks *-kat locative. However, both share their locative semantic core and all their segments, if in a slightly different order.

3.3. Definite Marking and Related Notions

A strong lexical resemblance exists as well in the marking of definiteness and nominality. In the Caddoan family, there is some diversity in the marking of definiteness, a portion of which is straightforwardly reconstructable. The reconstructable part of this morpheme is nearly identical to the Proto-Iroquoian morpheme marking nominals and/or definiteness. A dataset showing the three relevant Caddoan patterns is presented below.

⁷This seems to appear in but three stems in the dictionary: *-ya’takt- ‘next to someone’, *-nōhsakt- ‘next to a house’, and *-iyhakt- ‘next to a bush.’ (Chafe 2013)

(4) Definiteness marking in Caddo and Arikara

a. Caddo

Tutánná:bah *ná: hatsihdi’*
 nu-t-hán-yá:bah ná: hatsihdi?
 3.BEN-BEN-ANIM.P-be.ANIM.PL DET child
 ‘The children took it over.’ (Chafe 2018:170)

b. Arikara

piiranešáánu’ ná’U nootiRAhuukaata’iíšAt
 pi:ra-ne:ʃa:n-uʔ naʔu no:-ti-ra-hu:ka:ta-ʔi:ʃat
 child-chief-NFS DEF then-IND.3-PORT-edge.of.water-take.PFV
 ‘Then the chief’s son took him to the bank.’ (Sutton 2017)

In (4a), the particle *ná:* seems to mark the following nominal as definite or specific. The morpheme is sometimes glossed as ‘that’, ‘the’, or THAT depending on the source, and so here it is taken to be a general determiner. It shares most of its shape with the definite article in the Cahniks branch, here exemplified by Arikara *ná’U* in (4b). In that example, the article is postposed to the modified nominal, which is more similar to the—probable—Wichita cognate *-re’eR/-re:R*⁸ an example of which is given below.

(5) Definiteness in Wichita

- a. *Asskhátitawa* *ha:ri’ hánc’a* *nace:rak’áskih...*
 asskhah=ti-tawa ha:riʔ hánts-ʔa na-t-re:R-rakʔa-skih
 last=IND3-hang.PL DIST grass-NFS PTCP-1A-DEF-say-IPFV.SB
 ‘It goes last, that grass which I was talking about...’ (Rood n.d.[a])
- b. *Wi:cé’eh*
 wi:c-reʔeh
 man-DEF
 ‘the man’ (Rood 1976:6)

The probable cognate to the Caddo and Arikara definite markers in Wichita occurs most often as a verbal affix, exemplified here in (5a). Rood (1976:6) notes that this phenomenon most often occurs with the verb ‘to be.’ It can also surface as a suffix to the modified noun like in (5b); echoing the postposed position of the reflex in Arikara.

Table 14: Definite Marking in Caddoan

Proto-Caddoan	?	
Caddo	<i>ná:</i>	(Chafe 2018:302)
Proto-Northern Caddoan	*(r/n)aʔu	
Wichita	-re:R/-reʔeR	(Rood 1976:6)
Panian	ráʔu	(Sutton 2017)
Arikara	<i>náʔU</i>	(Sutton 2017)

⁸The capital <R> in Wichita notation is a phoneme which appears as /r/ in #_ or V_V position but otherwise as zero.

It should be noted that the Wichita cognate here provides what I take to be the first evidence for a relative chronology of the Wichita change from PNC *u to Wichita /i/ and the change from the known change between PNC *aʔi to Wichita /eʔe/~e/. For a correspondence between Panian *ráʔu*, Arikara *náʔU*, and Wichita *reʔeR*, it must be that the change of high back vowels to high front vowels happened before the change of /a(ʔ)i/ sequences to /e(ʔ)e/ sequences. This does not provide clear evidence however for a relative chronology of the change resulting in the loss of the glottal stop and lengthening of the vowel. Given the historical sound changes resulting in Caddo presented in Chafe (1968), Melnar (2004), Chafe (2018), it is unclear how the Caddo cognate came to lose its glottal stop. Hence, no PC form is posited here though it seems clear there was one. Unfortunately it is also unclear where the final consonant in the Wichita form came from.

The Iroquoian languages share a definite or nominal marker of a very similar form. The functions of this morpheme are diverse and a full typology of its synchronic uses as well as its development paths has yet to be written. The short data set below provides some examples of how this particle is used in the contemporary languages.

(6) **nV(H)* in some contemporary Iroquoian Languages

a. Cherokee

Aàkwohiyu na kaáthíyo analskiiskṽ
 aki-o:hijuha na ká:thí:yo ani:-aliski:sk-á:ʔi
 1P-believe:PRC that stompground 3A.PL-dance:PFV-DVB
tunnanehltohtṽ
 te:-u.ni:-anełtoht-á:ʔi
 DISTR-3P.PL-have.allegiance.to:PFV-DVB
 ‘I believe in traditional stomp dance ...’ (Montgomery-Anderson 2008:484)

b. Wyandot

daéʔ usàhanyót de híʔnəʔ deháʔtəʔ
 naéʔ osa-ha-nyót ne híʔnəʔ ne=ha-ʔtə-ʔ
 that.one OPT.REP-3SG.A.M-take.PFV NE he.thunders NE=3SG.A.M-old-STAT
deyawì:nəh
 ne=ka-winə-h
 NE=3SG.F.P-pretty-STAT
 ‘The old man [Thunder] took the young woman along with him.’ (Kopris 2001:245)

c. Mohawk

Wa’ehní:non’ ne kahonwé:ia ne Wá:ri
 waʔ-e-hninə-ʔ ne ka-həwei-aʔ ne wari
 FACT-3SG.F.A-buy-PFV NE 3.KA-boat-NFS NE Mary
 ‘Mary bought a boat.’ (DeCaire, Johns & Kučerová 2017:7)

The Cherokee pattern above shows the NA particle preceding a whole noun phrase coming after the verb. It marks the noun phrase as definite and can appear on noun phrases before or after the verb and regardless of the morphological category of their root. The Wyandot pattern is different in two ways. First, it may mark more than one member of a noun phrase, as in the double marking of both the noun for ‘thunder’ and the nominal meaning ‘old man.’ Second, it

acts as a clitic in marking verbal nouns regardless of their definiteness, as in both the ‘old man’ and ‘young woman’ forms above; a unique feature within the family. The Mohawk distribution provides another pattern still. In this language, the NE particle never appears before the verb in a clause but marks all nominals regardless of definiteness after the predicate. In this example, both the object and subject are post-verbal and are marked with NE. While the proper noun is definite and specific, the object is neither and is marked solely because it is excorporated and the verb is focused (DeCaire, Johns & Kučerová 2017). The breadth of patterns throughout the family has not yet been reported in the literature and in most of the Northern Iroquoian languages it is not clear what function the particle serves in many constructions.

Despite contemporary diversity, Julian (2010) reconstructs the meaning at the proto-family level as ‘the, that,’ though it should be noted that the most likely development path following the summary in Narrog & Heine (2021) is from a deictic demonstrative as it remains in Cherokee.⁹ This study will follow the Julian (2010) reconstruction, though further work must be done in this area in the future. The reconstruction is as follows:

Table 15: *nV(H) in Iroquoian

Proto-Iroquoian	*nV(H)	(Julian 2010:512)
Cherokee	ná:	(Feeling 1975:146)
Proto-Northern Iroquoian	*ne?	(Julian 2010:512)

While the function of these morphemes in PI and PC is clearly similar and at least part of the reconstructable forms are identical or nearly so, there are several questions that would need to be sorted to clarify the possible relationship between them. First, why was there an /u/ vowel following the glottal stop in PNC? Is that vowel innovative or conservative? Second, can the form of the PI morpheme and the course of its grammatical development to the present day be at all further narrowed down? Regardless of these murky comparative waters, the resemblance remains tantalising.

This section has presented a few lexical resemblances in the Caddoan and Iroquoian nominal domain. It began by comparing the proto-families’ nominal templates, which look extremely similar. It then turned to three cases of resemblance: the noun-forming suffix, a locative suffix, and the definite or nominal markers. Given that neither family has much nominal morphology, the relative lack of clear resemblances in this area is not surprising. However, it seems especially unlikely that some of these morphemes and functions would be borrowed, in particular the almost function-less noun-forming suffix. This paper will now turn to a narrow-scope comparison within the families’ abundant verbal morphology.

4. Verbal Morphology

This section will focus on comparing some subdomains of the rather complicated Iroquoian and Caddoan verbal complexes. More than the nominal domain, inflectional and derivational morphology on verbs provides a large amount of reconstructable material with clear lexical resemblance and perfect grammatical overlap. Given the almost uniquely extravagant complexity of

⁹Thanks to Hunter Brown for this comment.

verbs in these languages, the study will focus on but a small subset of possible verbal domains, particularly those commonly held to be resistant to change. With that in mind, attention will be paid here to pronominal prefixes, plural marking, aspectual marking, and voice-related marking. It should be noted that despite strong resemblances in some areas of the verbal complexes, many slots in both families are not shared.

The historical development of the verbal complex in Iroquoian has had some history of study though many questions remain. We can be sure that PI had a general structure almost exactly the same as the descendant languages, presented as a broad strokes template below following Julian (2010).

Table 16: Proto-Iroquoian verbal template

(Prepronominals)	Indexicals	(Voice)	(Incorporated Noun)	Root	Primary Aspect	(Expanded TAM)
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The prepronominals in PI are reconstructable following Julian (2010:45) as: the coincident, translocative, partitive, duplicative, future, cislocative, and repetitive. Most of these can be categorised by their meanings into the groups location, number, and TAM. The indexicals following the prepronominal group are typically called the pronominals as they mark arguments' person, gender, clusivity, number, and role/series features. Although there were two slots for an agent and a patient, there was but one number slot. Following this was the voice slot, typically known as the reflexives in the Iroquoianist literature. This contained but the middle voice and the reflexive. The optional incorporated noun marks the left edge of the verb stem, which is also the site of the epenthesis of the /e/ vowel in PNI, reconstructable to /i/ in PI. The verb root took an aspectual suffix which could be augmented by further TAM suffixes of various varieties. Only the indexicals, the verb root, and the primary aspect were obligatory.

The Proto-Caddoan verb as preliminary reconstructed by Sutton (2017) was exceedingly similar. Before describing the verbal complex, it should be noted that the contemporary Caddoan verbal templates are much more diverse than the Iroquoian languages and so the reconstructive work done will likely be subject to change as historical Caddoan matures as a field.

Table 17: Proto-Caddoan verbal template

Mode	Indexicals	(Aux?)	(Applicative)	(Aux?)	(Incorporated Noun)	Root	Aspect
------	------------	--------	---------------	--------	---------------------	------	--------

The PC verb as reconstructed by Sutton (2017) began with obligatory mode marking at the left edge followed by two indexation slots, which were also obligatory. It is possible that a slot followed this that might have marked some TAM notions though it is also possible that this occurred following an applicative slot. What is clear is that both the TAM/auxiliary and applicative slots were optional. The optional incorporated noun root would have then occurred before the verb root, which would have been followed in turn by an obligatory aspectual suffix.

A comparison of these reconstructed templates comes readily. The sole difference in the minimal form of the verb is the presence of obligatory mode marking at the left edge of the PC verb. The forms are otherwise identical in order: indexicals, verb root, and aspect. The marking of voice in PI and the applicative slot in PC will be compared in §4.3 below. It will show

that the reconstructable middle voice in PI and the dative in PC share phonological forms across allomorphy. That they occurred in more-or-less the same slots is especially intriguing. The next slot was the incorporated noun, which was also identical in being directly to the left of the verb root in both families. Following the verb root was the aspectual suffixes, which will be compared in §4.2 below. With these highly similar templates now sketched, we turn to the pronominal prefixes.

4.1. Pronominal Prefixes

The Iroquoian family is renowned for its deeply elaborate pronominal system (see Lukaniec 2017 for a discussion of this in Lake Iroquoian). Unlike most Iroquoianist works,¹⁰ this study will distinguish number marking from person and clusivity as much as possible. This is due to number marking being almost completely separable in its historical development.

A general areal trait in the Greater Mississippi area is the organisation of pronominal prefixes into agent and patient series (Mithun 1991). This trait appears in the Iroquoian, Caddoan, and Siouan families as well as being not very uncommon globally. It does not appear in the two other large families of the Eastern Woodlands; Algonquian and Muskogean. This comparison will begin with the agent series. In all the tables in this section, the Caddo realis series will appear first followed by the irrealis forms. The distinction here will not be addressed as it is not yet clear how it should be reconstructed to Proto-Caddoan.

Table 18: Trans-Mississippian agent pronominal prefixes

	1	2	Incl	Defoc./3
Caddoan				
Caddo	tsi-/t'a-/t'i-	yah?-/sah?-	Ø	ji-/ʔi-/ʔa-
Wichita	t-	s-	tsij-	ij-
Kitsai	t-	s-	tsij-	ij-
South Band	t-	s-	atsir-	ir-
Skiri	t-	s-	atsir-	ir-
Arikara	t-	x-	sin-	in-
Iroquoian				
Proto-Iroquoian	*k(i)-	*hs(i)-	*t-	*wa-/*ka-/*j(i)-
Cherokee	tsi-/k-	h-	iinii-/iitii- ¹¹	a-/ka-
Proto-Northern Iroquoian	*k(e)-	*hs(e)-	*t-	*w-/*ka-/*j(e)-

Agent pronominal prefixes provide numerous lexical resemblances. First, note the near complete correspondence between person marking: first person markers PC *t- and PI inclusive marking *t-, second person markers PNC *s- and Caddo *sah?*- and PI *hs(i), and /i/ and/or /j/ in both families' third persons. Note that Chafe (2018:12) reconstructs *tsi-* to Proto-Caddo as developing from palatalisation of *ki-, which is completely homophonous with the PI form. Within

¹⁰Starting in Lounsbury (1949) pronominal prefix charts have normally been presented with person, number, gender, agentivity, and clusivity in one matrix.

¹¹This is dual and plural respectively.

the Americas, two families sharing a pronominal paradigm to the exclusion of the famous *n-/m-* paradigm is uncommon (Zamponi 2017). The similarities do not end with the agent series, however. Consider the patient series in Table 19:

Table 19: Trans-Mississippian patient pronominal prefixes

	1	2	Incl	Defoc./3
Caddoan				
Caddo	ku-/ba-	si-/saʔa-	Ø	ja-/ʔaʔa-
Wichita	kiʔ-	a-	tʃa:kiʔ-	ij-
Kitsai	ko-	a-	sako-	Ø
South Band	ku-	a-	atsa-	Ø
Skiri	ku-	a-	atsa-	ir-
Arikara	ku-	a-	saku-	Ø
Iroquoian				
Proto-Iroquoian	*wak ^w (i)-	*tʃa-	*t-	*ju:-
Cherokee	a:ki/a:k ^w -	tʃa-	iinii-/iitii-	u:-/uw-
Proto-Northern Iroquoian	*wak(e)-	*tʃ(a)-	*jōk-	*ja(w)-

Beginning with the first-person, we find a form reconstructable to PNC as *ku, keeping in mind that some high front vowels of Wichita correspond to high back vowels in the rest of Northern Caddoan. Given the argument in Hancock-Mac Tamhais (2023b) that PC developed *k^w out of *kuV sequences and that the Caddo reflex of *k^w is /b/, then Caddo *ba-* is no longer exceptional, and the PC form can be reconstructed as *ku-. The Iroquoian form for the first-person patient prefix as reconstructed by Julian (2010) is transparently multi-morphemic, consisting of *wa- the inanimate third-person agent prefix and *k^w(i)-, which would then have been the early or pre-Proto-Iroquoian form of the first-person patient pronominal prefix. Following this logic, the PC and PI forms for the first-person patient prefixes are again practically homophonous *ku and *k^w(i)-, respectively. The second-person in this series has less obvious parallels. The PNC *a- form will be discussed below with the transitive prefixes as it may help explain the otherwise anomalous Iroquoian 1:2 pronouns, should the families prove to be related. The reconstructable PI second-person patient prefix is *tʃa-, the consonant of which seems to be echoed in Northern Caddoan inclusive agents pronouns, and both the consonant and vowel in the Northern Caddoan inclusive patient pronouns. That said, this connection is not nearly as clear as the others noted in this section. As with the agent series, the third-person marking contains high front vowels and/or the palatal glide. The presence of a high back vowel in the PI *ju:- is surprising in that there is no direct parallel in the Caddoan paradigms and that the PNI form reconstructed in Julian (2010), *ja(w)-, does not obviously follow from the relative chronology presented in that work. It is possible then that this is not the whole story or that the reconstruction is incorrect for this portion of the paradigm. Next, consider the transitive prefixes presented in Table 20.

Both the 1:2 and 2:1 pronominal prefixes in Caddoan are straightforwardly reconstructable on the basis of their component parts. PNC 1:2 would be *t-a- with the first-person agent and second-person patient pronouns in that order. Contrary to an expected form like *tsisi-/tsisaʔa-/tʔasi-/tʔasaʔa-/etc*, Caddo provides *tʔa(ʔa)-*. This form very likely represents an earlier stage of Caddo where the second-person patient pronoun was still *a-. Should this be the case, the glottal

Table 20: Trans-Mississippian transitive pronominal Prefixes

	1:2	2:1
Caddoan		
Caddo	t'a-/t'aʔa-	yahku-/sahku-
Wichita	tá:-	skiʔ-
Kitsai	ta-	sko-
South Band	ta-	sku-
Skiri	ta-	sku-
Arikara	ta-	xku-
Iroquoian		
Proto-Iroquoian	*kō:-	*hsk ^w (i)-
Cherokee	kā:(j)-	ski-/sk ^w -
Proto-Northern Iroquoian	*kō-	*hsk ^w (e)-

stop would be epenthetic—as is the norm between vowels in Caddoan languages—and the presence of the alveolar fricative in the Caddo second-person patient form would be an innovation from the agent series. The PI 1:2 prefix—*kō:—and the descendant reflexes are very different from the expected forms. With an assumption that this form would be historically constructed from the first-person agent and second-person patient prefixes, one would expect this morpheme to be *k(i)tsa- in PI and descendant prefixes to be *tsitsa-* in Cherokee and *k(e)ts(a)- in PNI while the attested Cherokee is *kā:(j)-* and the reconstructed PNI is *kō-. Should a correspondence between PC *a and PI *ō be found, this could represent a much older Pre-PI form from before the development of the otherwise surprising PI second-person patient prefix *tsa-. While such an analysis would be appealing, it must wait for the maturation of the reconstruction of Proto-Caddoan and should otherwise be considered speculative.

The PNC 2:1 pronominal prefix would have been *s-ku, which is simply the second-person agent prefix followed by the first-person patient. The Caddo form has the same structure but with its—probably innovative—second-person agent prefixes. The Iroquoian forms also display this 2a-1p structure in PI *hsk^w(i)-, but also show that the epenthetic *(i) in agent pronominal prefixes was probably morphologically sensitive. Julian (2010:365) reconstructs the second-person agent prefix in PI as *hs(i)- with the epenthetic vowel occurring before a following consonant. The transitive 2:1 prefix shows that this did not happen before the first-person patient prefix, i.e. when the agent prefix did not occur directly before the verb stem. This morphological sensitivity echoes down into the descendant Northern Iroquoian languages in the epenthesis process which inserts /e/ solely at the boundary between the right edge of the pronominal prefix and voice slot and the left edge of the verb stem (Michelson 1988). A similar process occurs in the Northern Caddoan languages with the mysterious ‘extra vowel’ /i/ which is inserted directly after the dative/benefactive morpheme which as argued in §4.3 is another potential cognate between these families (for more on the ‘extra vowel’ see Sutton 2017 and citations therein).

The last lexical resemblance in indexical marking to be discussed here is the PNI plural marker *-wa- and the Caddoan distributive marker reconstructed here as *-wa(:)-. The forms are summarised below.

While the resemblance in shape and function is clear, the morphological distribution in

Table 21: Trans-Mississippian plural and distributive marking on verbs

Caddoan		
	Plural?	
Proto-Caddoan	*-wa(:)-	
	Animate Plural	
Caddo	-wa-	(Chafe 2018:31)
	Distributive	
Wichita	-wa:-/-we:-	(Rood n.d.[b])
Kitsai	-wa	(Vantine 1980:58)
South Band	-wa:-	(Parks 1976:279)
Skiri	-wa:-	(Parks & Pratt 2008:xv)
Arikara	-wa-	
Iroquoian		
	Plural	
Proto-Northern Iroquoian	*-wa-	Julian (2010)

each families' verbal complexes is not exactly the same. In Northern Iroquoian, the plural marker *-wa- always occurs just before the voice slot which is the last position before the verb stem. Cherokee does not have a known reflex of this morpheme and so we cannot compare its distribution. The Caddoan distribution is more diverse and a full description and reconstruction of this in the Caddoan family is well beyond the scope of this exploratory paper. However, the general position of the animate plural in Caddo and the distributive in Northern Caddoan is either as a prefix to the left of the verb root but to the right of the voice markers and 'extra vowel' or an infix into the verb root. A small data set showing the major difference in these distributions is included below.

(7) The *-wa(:)- plural markers in the Trans-Mississippian languages

a. Caddo

ʔinaʔ níkkúmʔá·kah
 ʔinaʔ ník=ku-ʔn-wa-kah
 mother PST.SUB-1DAT-APPL-ANIM.PL-shout
 'When mother called us.' (Melnar 2004:74)

b. Arikara

šiišiišuuupáʔ
 ʃi=i-x-in-ux-hu:k-wa-a
 DU=IMP-2A-PV-IMP-into-DISTR-come.PFV
 'Come inside (you two)' (Parks 1991:807)

c. Onondaga

Swadé·hgah!
 s-w-at-Rehk-ah
 2-PL-MV-collect-IMP
 'You all, assemble!' (Woodbury 2018:102)

In the data set in (7), two Caddoan examples show the position of **-wa(:)-* after the voice marking slot—glossed in (7a) as *APP* and in (7b) as *PV*—and before the verb root. Representing the Iroquoian pattern here is Onondaga, which shows the **-wa-* plural coming directly before the middle voice marker in (7c). The connection between the Caddo *APP*, Arikara *PV*, and Onondaga *MV* will be discussed in §4.3. Regardless of the distributional differences here, the resemblance in form and meaning is clear enough to warrant further attention.

This section has shown numerous lexical resemblances in the indexical marking of Caddoan and Iroquoian verbs. These resemblances occur in every portion of the first- and second-person paradigms and in the reconstructable marking of defocused or third-persons as well. An interesting parallel in the vowels of agent and patient series pronouns may also give rise to advances in the reconstruction of pre-Proto-Caddoan and pre-Proto-Iroquoian independent of one another. Given that pronominal affixes are very rarely borrowed (see discussion in Law 2009, Ross 2005), and that the independently reconstructed proto-family paradigms are nearly identical in form and very similar in distribution within the verb, it is this author's present position that the Trans-Mississippian Connection will ultimately prove genealogical as opposed to one of contact alone.

4.2. Aspectual Marking

Both Iroquoian and Caddoan rely almost exclusively on aspect and mode to mark the temporal structure of events. Except for in Caddo (Melnar 2004:88-92), tense marking proper plays a rather minor role in both families and so, in this preliminary stage, it will be left for future research. It should be noted that the Iroquoian languages display an exceptional amount of allomorphy in their aspectual suffixes and much of that will be abstracted away from here, though a full reckoning of this variation in the context of the Trans-Mississippian Connection will have to be dealt with as the field progresses. Both families have a primary split between perfective and imperfective with the latter having further distinctions. The Northern Caddoan languages and Cherokee have a split between subordinate—called dependent in the Cherokee literature—and non-subordinate verb forms. All charts in this section will split the Northern Caddoan affixes by this binary, but the Cherokee will not be as the subordinate/dependent morphology is separate from the aspect marking on the stem. We will begin with the perfectives:

Table 22: Trans-Mississippian perfective suffixes

	Caddoan		
	Non-Subordinate	Subordinate	
Caddo	-ah/-nah/-dah ¹²		(Chafe 2018:36)
Wichita	Ø	-h	(Rood 1976:279)
Kitsai	?	-ja	(Sutton & Mirzayan 2024)
South Band	Ø/-is-	-a/-u/-i/Ø	(Parks 1976:190-195)
Skiri	-ʔ/Ø/-his-	-a/-i	(Parks & Pratt 2008:45)
Arikara	-ʔ/Ø/-iš- ¹³	-a/-aʔu/-(w)i	(Parks 1970)
	Iroquoian		
Cherokee	-is/-hn/Ø ¹⁴		(Montgomery-Anderson 2008)
Proto-Northern Iroquoian	*-ʔ/*-ẽʔ/*-n/Ø		(Julian 2010)

The Caddoan perfective markers appear in several patterns. The Caddo forms share an /a/ vowel with some of the subordinate forms in Northern Caddoan apart from Wichita, and have an /h/ final in common with the single Wichita perfective marker. The non-subordinate forms in Northern Caddoan are either unmarked or are a simple glottal stop when they are word-final. Since both Kitsai and South Band Pawnee have a tendency towards deleting glottal stops in word-final position, it is entirely possible that the glottal could be reconstructable to the Proto-Cahniks-Kitsai level. When the perfective marker is not word-final—represented in Table 22 with affix dashes on both sides of the morpheme—its shape is **(h)is-* in the Cahniks languages. All of these patterns find lexical resemblances in the Iroquoian branches. In Cherokee perfective stems one finds *-is* which is nearly identical to the Cahniks form, and *-hn* which is somewhat similar to the Caddo *-nah*. In Proto-Northern Iroquoian, the glottal stop of Skiri Pawnee and Arikara is again found as is the **-n* nasal. The subordinate perfective forms in the Cahniks-Kitsai branch are quite similar to the dependent markers on Cherokee verbs: *-ā:ʔi* and *-i*. The former suffix deverbilises verbs so that they may function as adverbs or as nominals and the latter is a nominaliser (Montgomery-Anderson 2008). The *-ā:ʔi* suffix, were it projected back to PI would likely have the form **-ō:ʔi*, providing a possible though tenuous **ō:**a correspondence with the Arikara *-aʔu* form, as was proposed in the 1:2 pronominal prefixes in §4.1. The *-i* suffix is more transparently similar to the Proto-Cahniks subordinate perfective **-i*. While these resemblances in the perfective suffixes are suggestive, it is in conjunction with resemblances in the imperfectives where evidence of a relationship looks stronger.

Table 23: Trans-Mississippian imperfective suffixes

Caddoan			
	Non-Subordinate	Subordinate	
Caddo		-saʔ	(Chafe 2018:36)
Wichita	-s	-skih	(Rood 1976:287-288)
Kitsai	-u	ʔ	(Sutton & Mirzayan 2024)
South Band	-.hus	-hus	(Parks 1976:197)
Skiri	-.huʔ/-:hus-	-hu	(Parks & Pratt 2008:45)
Arikara	-(h)uʔ	-hu	(Parks 1970)
Iroquoian			
Proto-Iroquoian		*-hsk	
Cherokee		-(h)sk/-h/Ø	(Cook 1979:98)
Proto-Northern Iroquoian		*-hsk	(Julian 2010)

Caddoan imperfective paradigms are dominated by the segment /s/. In the Cahniks branch this is preceded by /hu/ and this /u/ vowel is otherwise recognisable in Kitsai and presumably in the subordinate form from Wichita; keeping in mind that P(N)C **u* corresponds to /i/ in Wichita (Chafe 1979). But for the glottal stop in the Caddo morpheme, all the consonants in the Caddoan

¹²I follow Sutton & Mirzayan (2024) in assuming the Caddo ‘perfect’ is actually a perfective.

¹³There is significant diversity here that has not been systematised in the literature.

¹⁴These are only some of the identifiable stem endings in this aspect. There are many more but they are not yet systematised. Montgomery-Anderson (2008:286) notes that this aspect might be better described as a completive but that there is strong overlap between this aspect’s semantics and a canonical perfective.

forms are found in the same order in the reconstructable root in PI *-hsk. What is missing here is the /u/ vowel, however a possible correspondence between P(N)C *u and null/an epenthetic /a/ in PI has already been seen in the noun-forming suffixes in §3.1. While the rest of the segments find easy comparison between the families, the presence of the /k/ in Wichita and all of Iroquoian is not yet explained. However, consider the habitual paradigms:

Table 24: Trans-Mississippian habitual suffixes

	Caddoan		
	Non-Subordinate	Subordinate	
Caddo	-hah/-fah		(Melnar 2004:103)
Wichita	-:ss		(Rood 1976:288)
South Band	-.hus-u:ku	-hus-u:ku	(Parks 1976:199)
Skiri	-.hus-u:ku?	-hus-uku	(Parks & Pratt 2008:45)
Arikara	-hux-u:ku?	-hu	(Merlan 1975:21)
Iroquoian			
Proto-Iroquoian	*-hsk		(Julian 2010)
Cherokee	-hsk-ó:ʔí:		(Montgomery-Anderson 2008)
Proto-Northern Iroquoian	*-hsk/*-hsk ^w		(Julian 2010)

The Proto-Cahniks language clearly had a habitual suffix with a form like *-u(:)ku? which attached to the imperfective suffix directly. Since Kitsai remains highly underdescribed it is unclear from the literature what this language had for its habitual forms and it is out of the scope of this paper to establish Kitsai aspectual marking, though it is likely very similar to the Cahniks branch. The Wichita form -:ss seems to provide evidence for a PNC suffix that did not have the /u/ vowel of Proto-Cahniks. As described in Rood (1976:236), contemporary Wichita disallows many surface consonant clusters, largely preferring to alter the first member. In the case of /hs/ the surface realisation is [s]. The contemporary sequence /sk/ is realised as [sk], however, historically, this seems not to have been the case. Consider the following selection of Northern Caddoan cognates:

Table 25: Northern Caddoan correspondences to Wichita /ss/

	‘one’	‘awl’	‘father’	
Wichita	ass	issi:s	iʔassi:s	(Rood n.d.[b])
Kitsai	arísko	síso	-a:s	(Lesser n.d.)
South Band	asku	siiski	-as	(AISRI 2016)
Skiri	asku	si:s-	-a:s-	(Parks & Pratt 2008)
Arikara	áxku	ʃíftʃ	-ax	(Parks 1970)

Table 25 provides evidence for a previously unreported correspondence between Wichita /ss/ and PNC *sk. The cognates for ‘one’ provide a straightforward non-derived, intervocalic example. The ‘awl’ and ‘father’ sets are slightly more complicated. Both of the Wichita forms have an artefactual diminutive reconstructable as *-ki:s but otherwise not active in contemporary Wichita. Both South Band Pawnee and Arikara have citation forms for ‘awl’ with the diminutive reflexes -ki and -tš, respectively. The PNC root for ‘father’ is clear reconstructable as *-a:s and

in Wichita seems to have combined with the diminutive—as is common for kinship terms in Caddoan and Iroquoian. It also has some material *?i-* at the left edge which I do not have an explanation for. It should additionally be noted that the sequence /ss/ in Wichita is not very common and further independent reconstruction of P(N)C should address whether the **sk* → /ss/ change is in some way restricted.

Should this correspondence be robust, it would provide evidence for a reconstruction of the PNC habitual development path as either: (1) **-:hs-k* with Proto-Cahniks developing epenthetic /u/ vowels as was argued to have occurred in the development of the noun-forming suffix in §3.1; or (2) **-:hus-u(:)k(u)* with Wichita deleting the **u* vowels as a possible historical syncope rule, the possibility of which was briefly discussed in Rood (1976:232-235). While the former reconstruction would bring the PNC and PI habitual suffixes into near homophony, the latter still has all the same consonants in all the same order with the same meaning.

The final aspectual marker to be discussed here is the inchoative. Caddo and Northern Iroquoian share two inchoative suffix shapes to the exclusion of the Kitsai-Cahniks branch — which has developed inchoatives from 'to do' among other lexical sources. The Cherokee inchoative construction does not seem to have been discussed in the literature. The Wichita inchoative is included in the table below, though it is unclear whether it is cognate with the Caddo form.

Table 26: Trans-Mississippian inchoative marking

Caddoan		
Caddo	-ʔ-/-ʔn(i)	(Melnar 2004:100)
Wichita	-iri-	(Rood 1976:298)
Iroquoian		
Proto-Northern Iroquoian	*-ʔ	(Julian 2010)
Tuscarora	-ʔ-	(Mithun 1974:64)
Wendat	-h-/-ʔ ⁿ d-/-ʔ-	(Lukaniec 2018:288)
Seneca	-ʔ-/-h-/-ʔheʔ-/-ẽ(h/ʔ)-	(Chafe 2015:62)
Cayuga	-ʔt(h)-/-nheʔ-/-ʔ-	(Dyck et al. 2014:33)
Onondaga	-ʔ-/-h-/-ʔ(k)heʔ-/-ẽ(h/ʔ)-	(Woodbury 2018:246)
Oneida	-ʔ-	(Abbott 2006:110)

The PNI inchoative is reconstructed in Julian (2010:420) as **-ʔ*. Although it is not explicitly stated within that reconstruction, this morpheme would have occurred between the verb root and primary aspectual suffixes in PNI as it does in all contemporary Northern Iroquoian languages. Caddo echoes this single segment in its inchoative, which also occurs between the verb root and primary aspectual suffix (Melnar 2004:100-101). What is more interesting is the nasal segment in the Caddo and Wendat inchoative morphemes and the nasal segment in the punctual following the inchoative in Oneida. Wendat /ⁿd/ corresponds to PI **n* in V(h/ʔ)_V positions (Lukaniec 2018), meaning that this allophone of the inchoative is underlyingly /-ʔn-/. The inchoative in Oneida, -ʔ-, requires that a following perfective suffix be *-neʔ* when it would normally be *-ʔ* (Lounsbury 1953:85). Following the relative chronologies of Mithun (1979) and Julian (2010), this form of the perfective in Oneida would be **-niʔ* were it reconstructed back to PI. Both of these contemporary patterns and their likely historical forms therefore find lexical resemblances with both the Caddo allomorphs. The nasal in Caddo also corresponds to the rhotic in intervocalic position in Wichita

and so that form has been included as well. It is unclear from the present understanding of historical Caddoan whether these forms are cognate, however.

This section has provided a selection of aspectual suffixes which present possible cognates between Caddoan and Iroquoian. Points of comparison were the perfective, imperfective, habitual, and inchoative suffixes. These provided exact phonological matches in various branches of each family and between reconstructed forms. Most intriguingly, lexical resemblances were shown to occur across allomorphic relations, something which is very unlikely to be borrowed. Last, a novel possible correspondence in the development of Northern Caddoan was highlighted and this was used to discuss two possible reconstructions of the PNC habitual suffix construction in comparison with the PI habitual.

4.3. Voice and Related Notions

This section will discuss a single set of morphemes which share phonological shapes across allomorphy, a similar distributional position across the verbal complexes of both families, and a similar but not exact meaning. In the Caddoanist literature it is often called the dative or the benefactive and in the Iroquoianist literature it was historically known as the semi-reflexive but is now properly called the middle voice. All attested forms are presented in Table §27 below.

Table 27: Datives and the middle voice in Trans-Mississippian

Caddoan		
Caddo	-t-/nt-/n-	(Chafe 2018:47)
Wichita	-uts-/uR-/uy-	(Rood 1969)
Kitsai	-uhts-	(Vantine 1980:38)
South Band	-ut-/ur-/ir-	(Parks 1976)
Skiri	-ut-/u:r-/ir-	(Parks & Pratt 2008)
Arikara	-ut-/un-/in-	(Merlan 1975)
Iroquoian		
Proto-Iroquoian	*-at/*-ar-	(Julian 2010:415-416)
Cherokee	ataa-/ali-/at-	(Montgomery-Anderson 2008:289)
Proto-Northern Iroquoian	*-at/*-ar-	(Julian 2010:415-416)
Tuscarora	-at/-(a)ʔne-/ar-	(Rudes 1999:696)
Wendat	-at/-ak/-a/-ẽ/-e ⁿ d-/ar-	(Lukaniec 2018:218)
Wyandot	-at/-ẽ ⁽ⁿ⁾ d-	(Kopris 2001:463)
Seneca	-a(t/n)/-ẽ/-ẽ(n/r)/-a/-ẽni-	(Chafe 2015:57)
Cayuga	-at-	(Dyck et al. 2014:32)
Onondaga	-a/-at/-a(h/n/R/s/th)/-ẽ(n)-	(Woodbury 2018:237)
Oneida	-at/-an/-al/-a-	(Lounsbury 1953:73)
Mohawk	-at/-an/-ar-	(Martin 2018:63)

The Iroquoian middle voice is reconstructable as *-at/*-ar-. It occurred directly after the number marking of the pronominal prefixes and directly before the incorporated noun. This zone is where /e/ epenthesis takes place in the Northern Iroquoian languages (Michelson 1988). Although it is historically known in the field as the ‘semi-reflexive’, following Lukaniec (2010) the

field has acknowledged this morpheme as marking a canonical middle voice. Unlike the analysis of the /a/ vowel in the Iroquoian noun-forming suffixes, the /a/ here cannot be argued to be epenthetic as no epenthesis processes target this region of the Iroquoian verb. It should be noted that a reduplicated form of this morpheme is reconstructable as a reflexive to PI *-ata:t- (Julian 2010:414). Although the hypothesis has not been fleshed out in the literature, Lukaniec (2010:225-226) proposes that the unreduplicated form might have been the proto-language's reflexive with the reduplication being an innovation. The Caddoan forms are also clearly internally cognate. Although a full typology has never been conducted, the meanings of the morpheme include: beneficiary, possessor, and goal. Some verb roots – like the copula in Wichita – seem to lexically require the dative, in which case it is commonly called a preverb in the Caddoanist literature. The Caddo form appears before the incorporated nominal and after the distributive and durative markers (Melnar 2004, Chafe 2018). It conditions the dative pronominal series and, following Kasak (2023), I assume that the /u/ vowel in this series belongs historically to the PC marker. In Northern Caddoan, the dative occurs between the preverb slot to its left, which is after the pronominal prefixes, and the 'extra vowel' slot to its right which in turn comes before the incorporated noun. The PC form seems to be reconstructable as *-ut-/*-ur- as all descendant languages – barring the very poorly described Kitsai – have allomorphs with both consonants. A possible area of interest for future work in historical Caddoan is why the Wichita forms do not have the expected /i/ vowel in this case.

The reconstructed forms for the PI middle voice and the PC dative are almost identical, sharing the same *t and *r consonants across allomorphy. Unlike the noun-forming suffixes however, the analysis of the vowels *a and *u in this case are very unlikely to be epenthetic in either family. Whether this represents a bonafide correspondence must be tested through the collection and comparison of lexical roots, preferably at the proto-family level. As PC is not reconstructed, this comparison must wait. The position of the morphemes in either family is extremely similar as well. In PI and PNC this morpheme's slot is positioned right before the 'extra vowel'/epenthesis slot which is also before the incorporated noun. To its left are the indexical marking slots which are very slightly diverse both internal to the families and between them. Should these morphemes prove to be cognate, the grammatical development path leading to middle voice and a dative-like meaning will be an important and interesting avenue for future research as leading research into the middle voice, Inglese (2023) and Zúñiga & Kittilä (2019) in particular, has not yet identified a link between them. Should the proposal of PI *-at-/*-ar- as the reflexive be proven, the development path of reflexive to middle voice, and reflexive to reciprocal to dative is much better established Kouteva et al. (see 2019) and could go some way besides in helping us understand why no reflexive is reconstructable back to Proto-Caddoan.

5. Concluding

This paper has served as a first step in the revival of the comparison of Iroquoian and Caddoan. Despite major advances in the documentation and description of both families no studies have dealt directly with this comparison since the work on Macro-Siouan completed in the 1960s and 1970s by Chafe (1964, 1973, 1976). As the picture of historical and Proto-Siouan has continued to develop, it has looked increasingly like that-that family is unrelated to either Caddoan or Iroquoian. With that in mind, this paper has treated only the possible relation and/or contact

between the latter two families, a possibility here called the Trans-Mississippian Connection. As the independent reconstruction of Proto-Caddoan is almost completely unattempted, this paper has proceeded by comparing a small, focused set of inflectional and derivational morphemes in the nominal and verbal domains as these are widely assumed in the literature to be the least likely to change over time. As a secondary outcome of this research, some novel independent reconstructions and correspondences internal to the Caddoan and Iroquoian have also been proposed with the work on the development of the imperfective/habitual in PNC, sketched in §4.2, being the most significant contribution.

Although the lexical resemblances presented here are in areas unlikely to be borrowed and seem to show some consistent correspondences between proto- and contemporary languages, the scope of this paper is not enough to judge the ultimate question of genealogical relatedness. However, the evidence of a connection at the proto- or pre-proto-language level is – in this author’s opinion – substantial and warrants significant further study from diverse perspectives. Of particular note was the shared pronominal forms in all persons and the independent identification of homophonous vowels between each (pre-)proto-family’s pronominal role marking, identical allomorphy reconstructable to both proto-families in the inchoative and middle voice/dative morphemes. A summary of possible correspondences in the presented resemblances is given in Table 28 below.

Table 28: Summary of some possible Trans-Mississippian correspondences

Phoneme	Iroquoian	Caddoan
*ʔ	PI NFS *-ʔ	PC NFS *-ʔ
	PI INCH *-ʔ	Caddo INCH -ʔ
	PNI PFV *-(ẽ)ʔ	PP PFV *-ʔ
*k	PNI LAT.LOC *-akt	PCah LOC *-kat
	PI 1 *k-	PC 1.P *k(u)-
*t	PNI LAT.LOC *-akt	PCah LOC *-kat
	PI INCL *-t-	PNC 1.A *-t-
	PI MV *-at-	PC DAT *-ut-
*s	PI 2.A *hs(i)-	PC 2.A *s-
*r	PI MV *-aɪ-	PC DAT *-ur-
*w	PNI PL *-wa-	PC PL? *-wa(:)-
*j	PI 3.ANIM *j(i)-	Caddo DEFOC ji-/PNC DEFOC *ij-
*i	PI 3.ANIM *j(i)-	Caddo DEFOC ji-/PNC DEFOC *ij-
	PI A? *-(i)-	PC A?/EV? *-i-
*ku	PI 1.P *k ^w (V)	PC 1.P *ku
*V	PI MV *-at-/-aɪ-	PC DAT *-ut-/-ur-

Unfortunately as the reconstruction of historical Caddoan is young, the very suggestive resemblances compiled here must be seen as exploratory. In addition, it should be noted that large sections of each family’s verbal template does not seem to find ready analogue in the other. In particular, the derivational suffixes of Iroquoian – the causative-instrumental, the reversive, the dative-benefactive, etc – and the Caddoan portative at this time appear to have no parallels in the opposite family. The same seems to be true for most of both families’ prepronominal prefixes.

These morphemes were checked for resemblance in the same region of the noun or verb that they occur in in the origin family, and so it is entirely possible that there are lexical resemblances outside of the very same templatic slots or in non-affixes. As both families are reasonably old, it is also possible that resemblances might occur with some semantic drift, and so cognate or borrowed morphemes might take some time to find. However, despite these clear limitations, it is this author's position that given time the resemblances noted first in the work of Wallace Chafe and further shown here to apply across the families and into their independent reconstructions will indeed prove to be cognates of a Trans-Mississippian family.

Abbreviations

ANIM	animate	NE	the NE particle
DEFOC	defocusing	NFS	the noun-forming suffix
DVB	deverbaliser	O	o-class pronominal prefix
EV	extra vowel	OPT	optative
FACT	factive	PORT	portative
GER	gerund	PRC	present continuous
INCH	inchoative	REP	repetitive
KA	ka-class pronominal prefix	SB	subordinate
LAT	lateral	STAT	stative
MED	medial	SUB	subordinator
MV	middle voice		

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Men, bears, and women: Tales, transformations and landscape in Jiwere-Baxoje culture

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Abstract: This paper will examine the cultural significance of bears vis-à-vis traditional folktales such as “Grizzly Woman”, personal narrative, clan materials, artwork, and significant geographic locations. Native peoples in North America have held them to be sacred, powerful, dangerous, and rightly so. The uniquely anthropomorphic features of these imposing creatures include their ability to walk upright, their intelligence, speed, hunting prowess, and last but not least, their ability to be Hunter, as well as Prey. The paper will outline a symbolic binary of biological sex as an important dichotomy in the mythical relationships between humans and bears, and the theme of inter-species transformations, as revealed in Baxoje and Jiwere folktales. Wider distribution of these themes in Native American culture is briefly discussed, and significant landforms are linked to certain tales.

Keywords: Jiwere-Baxoje, folktales, bears, Lévi-Strauss

1. Significance of Black Bear Clan in traditional Jiwere and Baxoje societies

1.1. Introduction to kinship and social organization

Both the Jiwere-Nyut’achi and Baxoje tribes shared the same traditional kinship structure, which would fall into the Omaha type within the standard kinship typology first established by Lewis Henry Morgan.¹ The Otoe-Missouria and Ioway people were born into a patrilineal clan, i.e., they were assigned from birth into the clan of their father, and of his father’s father, and so on (Morgan 1993[1959]:76–81, 111–112). Clans provided much of the social structure for the tribes, defining kin roles, potential marriage partners, formal roles of friendship across clans (such as Eagle and Bear), leadership roles, and mediators of conflict. There had been slightly different numbers of clans between the two tribes in the historic past, due in part to the possibility of losing a clan if too many generations lacked sons to pass on membership; such is the case of the Snake clan among the Ioway (Baxoje) (Skinner 1915:729–735). These two tribes belong to the Siouan language family, and are most closely related to the Hochunk (formerly Winnebago)

¹L.H. Morgan actually collected data for his comparative kinship survey from the Northern Ioway Reservation at White Cloud, Kansas. His personal journals are a fascinating chronicle of journeys all across the Plains, including taking a steamboat up the Missouri River into western Montana (Morgan 1993[1959]).



people (Parks & Rankin 2001:102). Occasional comparisons will be made to the Hochunk, as well as other Siouan tribes, and the larger cultural milieu of the western Woodlands/eastern Prairie and Plains region.

1.2. Black Bear Clan men as hereditary chiefs during the winter season

The Otoe-Missouria and Ioway both had alternating tribal leadership based on the season of the year: the Buffalo Clan led in the summer season (from spring's first thunderstorm through mid-autumn), while the Black Bear Clan Chief led in the Winter season (Whitman 1937:23; Skinner 1915:685). This alternation is one remaining aspect of a moiety system, which appears in other groups such as the Hochunk and the Osage (Radin 1910:212). The Black Bear Clan likewise holds a key leadership role in the Earth moiety of those groups.

1.3. Naming and the clan origin stories

Clan elders gave the name to a child in a ceremony, which included telling the sacred origin story of that clan. The precise details are different for each clan's patronym, but the events in the stories have become preserved as sacred clan names. The origin stories varied somewhat between the clans as well as within them, and were shared only among fellow clan member (Skinner 1915:728–735; Whitman 1938:173). It seems likely that the Otoe-Missouria and Ioway paralleled the Hochunk regarding the clans' importance in funerary practices. Whitman recounted a Bear 'legend' which described one of the Bear brothers' death, including their preparation of the brother for burial (Whitman 1938:174). Radin described that each Hochunk clan also had four clan songs relating to those ancestors, which were "always sung at the death of an individual clan member to identify soul by clan on the journey to the land of the spirits" (1974[1915]:35).

1.4. Versions of the Black Bear Clan origin story

The ethnologists Skinner and Whitman give slightly different versions of the Black Bear Clan origin story not only for each tribe, but for the "sub-gens" within each. The Ioway origin story differs in having a first human fasting for a vision under an elm tree, who witnesses the four bears come up from under the ground (Skinner 1915:728). In the first Otoe version, the four bear brothers emerge from water, while in the second version, they emerge from under the earth, clawing their way up to the surface via a sycamore root (Whitman 1937:175–177, 184).

Now, since sycamore trees often flourish on the banks of a creek or stream, it seems entirely possible for the Otoe versions to be in agreement. During the time of those original four bear brothers, they journey along and meet up with the rest of the clan animals now in the tribe, such as the four Eagle brothers, the four Beavers brothers, the four Elk brothers, and so forth. At one point, the short-tempered younger Bear brother was offered a pipe to smoke, but he clenched it in his teeth so tightly, he broke off the end. His action caused the need to create a wooden pipestem for drawing smoke, but the long stem could be beautifully decorated, so the end result was declared to be a good thing in spite of his impatience.² Each of the eldest brothers for the different clans was said to have a pipe bundle for the holy sharing of tobacco which allowed them to keep peace both within and between the descent groups (Skinner 1915:734).

²Note that Pipestem is the surname of a prominent Otoe-Missouria family belonging to the Black Bear Clan.

Figure 1: “Grizzly bear effigy pipe”, Nelson Atkins Museum (Kansas City, MO)



1.5. Symbolic representation of bears in sacred pipe

To set the stage for our discussion, please look at the lovely ground stone pipe depicting a bear in Figure 1. This magnificent cultural artifact comes from Missouri’s rich prehistory, demonstrating the significance of the bear and the sacred pipe for smoking tobacco going back to ancient times (c.f. ‘*Cedar and Tobacco*’: *An Otoe-Missouria text* in Greer 2009). While its great antiquity precludes any definite cultural affiliation, the geographic location is consistent with the later development of Siouan ancestral groups known in archaeological nomenclature as Oneota (Henning & Thiessen 2004).

2. Characteristics of bears

2.1. General attributes

Now, let us turn from the role of sacred Black Bear ancestors and the leadership of their progeny within the two tribes since that mythical age, to the actual mammal species with whom the Native peoples of North America coexisted for over ten thousand years, *Ursus americanus* (black bear) and *Ursus arctos horribilis* (grizzly).³

Both black and grizzly bears are very fascinating, ambiguous creatures. They are quite large, powerful, and unpredictable. They are normally quadrupeds, but they sometimes walk upright. They are the only mammals in the continent with that bipedal capability other than *Homo sapiens*! They have dexterous front paws, with which they may fish, mark trees, even lift human-made latches. Their claws are incredibly large and sharp; even their footprints seem almost humanoid (Huber & van Manen 2022:1–11).

³See the following site for additional information on grizzly bears: <https://www.fws.gov/species/grizzly-bear-ursus-arctos-horribilis>.

2.2. Traditional beliefs about bears and parallels with women

Bears are omnivorous—they can *eat* man, as well as be eaten *by* man. Highly intelligent animals, it was widely believed that they could understand human speech (Berres, Stothers & Mather 2004:28). Perhaps even more interesting, it was widely believed that bears are left-handed (Miller 1982).

They spend a significant amount of time grubbing in the soil, through rotten logs and forest leaves, which led to natives crediting them with herbal knowledge, and thus, a skill in doctoring. Herbal knowledge is frequently associated with women cross-culturally. Consider the fact that they were frequently seen eating berries and fruit, just as human women gathered the same delicious fruits, made them parallel to women in another way.

So, if bears are dangerous, desirable to eat, and parallel to women in some ways, perhaps it is not surprising that there are a number of stories surrounding these human-like creatures and the women who go forth into bears' forest home to gather fruits, herbs, and firewood, away from the safety of the village or camp.

3. Folktales about bears

3.1. Motif classifications: “Animal paramour” and “Human transformed into animal”

In his classic work on comparative North American folklore, Stith Thompson (1966[1929]) categorizes the widespread tale “Grizzly Bear Woman” with these two basic themes: Animal paramour and Human transformed into animal. Thompson's synopsis is succinct: “The Bear-Woman. A woman commits adultery with a bear. When the bear is killed, the woman turns into a bear and attacks her family...” His references include Ponca, Crow, Assiniboine, and Wichita (Thompson 1966[1929]:345). “The Bear-Woman” [Blackfoot] is included in its entirety in his anthology *Tales of the North American Indians* Thompson (1966[1929]:164–167). Boyle (2011) lists the tale “Girl becomes a Grizzly” [1911] collected by Lowie (1939), so it appears that three additional Siouan tribes should be added to Thompson's inventory for “Grizzly-Woman theme”, namely Ioway, Otoe-Missouria, and Hidatsa.

3.2. Skins, transformation, and insect motifs

Beyond the aforementioned motifs, we see also Motif D531 “A person is transformed by putting on the skin or feathers of an animal or bird”, Note #132 “Transformation by putting on skin”; however, Thompson curiously does not give any Siouan or Caddoan examples for this particular case, despite evidence given in this paper. Perhaps the fact that he had to index and cross-reference all of his work by hand can explain this omission as simply an oversight.

There are more related motifs which clearly do apply to the Grizzly Woman story, such as Note #250 “Disenchantment by destroying animal skin” (Thompson 1966[1929]:313); as one might hope, Thompson did include both Assiniboine and Teton stories under the related motif “disenchantment” (Thompson 1966[1929]:348). Later on in the story, when Grizzly-Woman's ashes are scattered and they become ants, it illustrates Motif A2001, Note #275 “Insects from

Figure 2: “Grizzly Woman” from “Ioway Fantastic Creatures” by Lance Foster (Ioway)



burnt monster's body" (Thompson 1966[1929]:354). In Mrs. Small's version of the tale, Julia goes on to explain how the ants then became humans again. In fact, she states they became the Lakota, who were mean because they were so thin in the middle (like the ants' body shape). Mrs. Small adds that today the Lakota are friendly, not mean anymore (Marsh n.d.)!

In the Jiwere-Baxoje corpus of tales, there are a total of three distinct examples of Bear Paramour Motif B611.1, Note #245, which fall within the subset of animal marriages B600 Note #3 (Thompson 1966[1929]:345, 362). The first of these tales is that of “Grizzly Woman” discussed above (Skinner 1925; Marsh n.d.).

3.3. More Bear Paramour tales

The second Bear Paramour Motif is in the Ioway (Baxoje) tale “Married to Grizzly”, sometimes called “Green Whiskers”, who is a different character entirely. A human female spent 100 days “married” to a Grizzly bear, with the result being an offspring called *Manto Ukíxthe* ‘Half-Grizzly Bear’. He was “wooly” or “hairy all over” (Skinner 1925:480–481).⁴ There is no negative consequence to the strange but brief “union”, perhaps because it produces the story's Hero, a very strong man indeed.

Finally, the third Bear Paramour Motif lies in the story collected earlier by Dorsey, as well as by Skinner and Marsh in the early twentieth century, “The Sister and the Brother” (Dorsey 1882; Skinner 1925; Marsh n.d.). The story goes roughly as follows: There is an isolated family. The husband suspects his wife of adultery, pretends to go hunting, then hides to watch her. He sees his wife “romping” with a bear, so he kills both the bear *and* his wife. Then he butchers the wife, leaving her skinned body hanging in a tree. He left a breast cooking on a stick for the two

⁴Spelling by Skinner; my transliteration is *Mqt^hó Uk^hiðre* ‘Grizzly Half’.

children, and tells them to eat it, before he abandons them there. Before they could commit the evil act of cannibalism, their mother's body speaks to them, and tells them the truth. The children then pursue their father; eventually the sister marries happily.

So, looking at these three cases, what are the repercussions of having a Bear paramour? In two of the three cases, human males kill the Bear Lover; in the last tale, the husband also kills the wife for her adultery. But the single girl is not killed by her kinsmen. Instead, her father and brothers bring the bear-lover's skin back to their home and throw it in her face (literally). She mourns her lover, then repeatedly puts it on to chase and frighten the village children. Eventually, the very act of wearing his hide and imitating his actions transforms *her* into a Bear. She devours everyone in the village except her youngest sister, and her brothers who were away on a war party.

The great anthropologist and linguist Franz Boas once expressed the idea that in the mythic world, hides were simply the outer garment, but underneath, all creatures were human (Boas 1904:7)! In this case, we see the reverse has come true.

If we apply Lévi-Strauss' French structuralism to the first narrative data covered here, we see that our Clan Origin Tale can be abbreviated as Bears become Men. The Grizzly Woman tale inverts that origin myth, as follows: Bears become men > women become bears!

3.4. Rabbit and Grandmother's "Bear Paramour"

At this point, it seems relevant to raise the rather delicate issue of a fourth variant of the motif Bear Paramour in this corpus of tales, and in the larger North American Tale corpus as well. It entails one of the key trickster figures among the Ioway and Otoe, who told tales of Rabbit/Hare, Coyote, as well as a figure simply called *Ishjinke* (Marsh n.d. Skinner 1925:28). As in many Trickster narratives, there is an explicitly sexual incident, but this time it only involves Grandmother, rather than Rabbit himself. The Ioway tale is called "Rabbit Kills a Bear", which goes something as follows:

One day, Rabbit kills a Bear. After he cut the body up to carry home, he asks his Grandmother to carry the front portion. "No, the claws will scratch me". Then he suggested the back, "No, it might be too heavy for my back". So he gave her the belly with the "male organ" still attached, and she said "Oh, yes, that's the one". He went on ahead carrying the rest, but Grandmother stayed behind, and "abused herself" with the bear's organ.⁵ When she came home, that was the first cut of meat Rabbit put into the kettle! (Skinner 1925:497)

Thompson may simply not have seen this particular tale, with its comical variation upon the traditional animal paramour, or perhaps he saw it as an outlier, without parallels in other tales. Despite relating to the notion of a substitute phallus, which has been well documented in the context of the *vagina dentata* motif, Grandmother's pleasure does not cause Bear's death,

⁵A black bear baculum averages 5.4 inches in length (Abella et al. 2013:3); researchers have found a correlation between presence of a baculum in mammals and "prolonged copulation," defined as 3 minutes or more. Human males are among a minority of primates which lack a baculum, which may relate to a lower importance of sexual competition between males as humans evolved pair bonding (Brindle 2016).

whereas alas, in the Orphan tale, it is the hero's clever substitution of a wooden "organ" for his own which causes the "wicked" woman to die, instead of him (Skinner 1925:461).⁶

4. Mythic transformations via skins

4.1. Becoming human

In the time of creation, animals could change into humans and vice versa. We see this in the Clan Origin stories as tellers explain that each of the clan animals went through a transformation, where the bear (or buffalo, eagle, elk, beaver, wolf, and prairie pigeon) became a man and stayed human thereafter. In fact, there was not a single clan ancestor, but four brothers who founded each clan; four is a sacred number, associated with the cardinal directions. These origin stories establish the social order, based on kinship through males, and key characteristics and privileges of each clan relative to each other stemming from the beginning of it all (Whitman 1938:174–175; Skinner 1915:730–735).

To reiterate, in the dawn of Mythic Time, Sacred Bears became Men, who develop Culture, and rights to leadership, along with social customs, and sacred ceremonies such as a pipe of peace.

4.2. Mythic reversal

In a mythic reversal of the clan origin story, women regularly journey away from the village, entering the realm of Nature to gather wild berries and fruit, as well as firewood. In the world of folktales, a woman alone might attract a male bear, and they mate. Thus, Culture conjoins with Nature, and Bears Replace Men! That is a symbolic threat to the entire social order.

5. Lévi-Strauss and French structuralism

5.1. Structural linguistics inspires French structuralism

In homage to the great Claude Lévi-Strauss and his famous quote from *Totemism* (1962:89), let us say Bears "are good to think"! He developed his technique, inspired by the Prague School of linguistics, and in particular, through sitting in on lectures at the *École libre des hautes études de New York* on structural linguistics by the renowned Russian scholar, Roman Jakobson.⁷ By noting the elegant simplicity gained through their analysis of sounds into bundles of binary features, he was inspired to apply this powerful new tool in his own analysis of kinship studies, and eventually, to entire myths.

⁶Thompson documented the *vagina dentata* motif (F547.1) all across North America, including the Plains, but has no mention of the Iowa tale described above (1966[1929]:309, 364).

⁷Lévi-Strauss' chance to teach at the New School for Social Research in New York City allowed him to escape France during the Nazi Occupation. He contacted the father of American anthropology Franz Boas, himself a Jewish emigre of the 19th century now heading Columbia University's elite program. New York proved a stimulating haven for Jewish intellectuals such as Lévi-Strauss and Jakobson fleeing the horrors of the Third Reich (Wilcken 2010:123–148).

Lévi-Strauss noted how traditional human narrative seems to divide easily into pairs of opposites, such as the *Raw and the Cooked* (Lévi-Strauss 1983), for example, between culture and nature, day and night, sun and moon, male and female, etc. His three volume opus took the rich collection of tales for North and South America as its corpus of data, which is the same broad cultural base in which Siouan societies developed as well.

5.2. Binary oppositions

Feminist anthropologist Sherry Ortner (1972) drew on Lévi-Strauss' classic binary oppositions, by referencing the strong human tendency toward right handedness (Miller 1982). Thus we can express these primal symbolic oppositions as given below:

Nature	vs.	Culture
Female	vs.	Male
Left	vs.	Right

So, how do bears fit into this symbolic paradigm? Miller (1982) recounts a common belief in many Native American societies, including the Hoocak, that Bears are in fact left-handed. He lists bear ceremonies where participants *must use their left hand*. When the Bear clan had a feast, all ate with their left hand, "out of respect for their eponym" (Radin 1974[1915]:180, 274), whereas in normal situations, eating with the left hand was an insult, and widely prohibited among many indigenous groups. This symbolic position places bears opposite the world of human culture of right-handed men. Yet, oppositions must be mediated, so that they can be transcended, or overcome. How might this work?

5.3. Bear as liminal creature

First of all, let us recap: the Bear is a potential Healer, a possible paramour, a desirable food, and a wielder of death. Not only are these an unusual combination of characteristics in one creature, but Bear is also the only two-legged non-human Person (Miller 1982).⁸ These contradictions make Bear a very Liminal Being, in Victor Turner's ritual sense, wherein someone(s) is "betwixt and between" categories, exhibiting some elements of one, some of another, and thereby bridging them (Turner 1969:94–113). Men draw upon special cultural traditions like Clan Origin Tales and Bear Ceremonies to honor the dangerous and chaotic power of the Left Hand/Female Fertility/Nature, which is embodied in Bears. Through ritual transformation, Bears become mediators transcending those oppositions, thereby allowing men to incorporate Bears' power into themselves.⁹

It is beyond the scope of this paper to address the widespread ethnographic, ethnohistoric, and archaeological evidence for indigenous Bear Ceremonialism. See A.I. Hallowell (1926) for his classic description of boreal forest people and their bear complex, which extends to Asia and

⁸Excluding birds.

⁹Vincent Collette (this volume, p.c.) shared that a symbolic division of the bear into the top half reserved for male consumption and the lower half for female consumption is documented for Cree peoples of eastern Canada today; he also noted once a bear has been skinned, its form and musculature are very similar to a human's, cf. Skinner (1914).

Northern European peoples as well, and Berres, Stothers & Mather (2004) for additional data expanding on Hallowell's work. Suffice it to say that there will be a second paper on the topic of words for 'bear' in Siouan and Caddoan languages at the next conference.

6. Postscript: The literal landscape

Finally, let us conclude by grounding the motifs, so to speak, to tie our tales to the very landscape upon which the Plains and prairie people lived, and a geologic formation well known through modern non-Native mythology of the "extra-terrestrial", a.k.a. "Close Encounters of the Third Kind". What was mistakenly translated as 'Devil's Tower' in northeast Wyoming was also called 'Bear's Lodge' *Mantó thipi* by Lakota people (Ullrich 2008), as seen in Figure 3. This unique landform was sacred to many different Plains groups. Often it is associated with legends on the origin of Ursa Major (Gibbon 1964:236–237). In one version of the Grizzly Woman Story, her brothers and younger sister were up on the rock, as the Grizzly sister was clawing at it, trying to reach them, before she was killed by their arrows.

In his classic work *The Way to Rainy Mountain*, Pulitzer Prize winning author N. Scott Momaday visits Devil's Tower and recounts his tribe's distinctive version as his Kiowa grandmother told him. There are seven sisters and one brother, and the boy is the one who suddenly transformed into a bear (Momaday 1969:8). The girls climb on a tree stump which magically raises higher and higher as the angry bear tore away the bark, until they were so far in the sky, they became the Big Dipper. Thus, it is a Geographic Link to at least one "Grizzly-Woman" tale among Plains Tribes.

Figure 3: *Mat'hó thípila* 'Bear's Lodge' (Ullrich 2008); Devil's Tower, Wyoming¹⁰



Motifs are so widespread, they may become associated with different sacred sites across the continent. Just like the tales that weave them together, they travel on and on. And then I came home.

¹⁰Public domain picture from Wikimedia Commons, taken by user Colin Faulkingham on July 27, 2005 via https://commons.wikimedia.org/wiki/File:Devils_Tower.jpg.

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Appendix A

An interesting custom from the Pacific Northwest Coast and western Canadian groups relates to their version of the Grizzly Woman story which is quite similar to the Iowa one, except for the additions of removing the arrows, and expressing sorrow for shooting her (Clark & Slocombe 2009:42):

They must burn the sister's hide after she has been shot with the arrows of her brothers. First day, Monster's ashes become ants, then the next, the insects become the human village again, *but* before burning her hide, they remove the arrows first and apologize for killing their kinswoman. Why?

1. One must always speak respectfully to a bear after killing it, as part of a larger tradition of honoring prey; this act prevents its spirit from being angered and telling all its kind of the human's hubris, and thereby never again allowing themselves to be taken by human hunters.

2. It is considered unthinkable to kill one's own relative!

Some First Nations hunters still remove the hyoid bone from a bear as soon as they have killed it, and apologize to the bear, addressing it as a relative in Western and Central Canada. The authors say the hyoid bone is shaped a bit like an arrowhead and they link this ancient indigenous custom to the old story (Clark & Slocombe 2009)!

Appendix B

It is perhaps noteworthy that the Native custom wearing of bear skins, including their heads and paws still attached, was startling to early Europeans, although we lack the cultural context and meaning of said garments, e.g., “Bear Attire”, or “To Wear a Bear”—John Smith’s 1608 description of the “giant” Susquehannocks (Mithun 1981:1-26):

“[...] Their attire is the skinnes of Beares, and Woolves, some have cassocks made of Beares heads and skinnes that a mans head goes through the skinnes neck, and the ears of the Beare fastened to his shoulders, the nose and teeth hanging down his breast, another Beares face split behind him, and at the end of the nose hung a Pawe, the halfe sleeves coming to the elbowes were the necks of Beares, and the armes through the mouth; with pawes hanging at their noses [...]”

Spatializing Yesá (Eastern Siouan—Tutelo, Saponi, Monacan, Occaneechi) history in the Ohio River Valley from 2000 BCE to 1865 CE through ethnohistorical and language evidence^{*}

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Abstract: Yesá is the endonym for the Virginia Siouan-speaking peoples otherwise called the Tutelo, Saponi, Occaneechi, Monacan, Eno, Cheraw, and others, who live contemporarily in tribal nations and communities throughout North Carolina, Virginia, Maryland, and Ohio and in diasporic hubs or urban communities elsewhere. This paper argues that Yesá peoples maintained a persistent spatial relationship with the Ohio River Valley across multiple migration cycles. Drawing on linguistic, archaeological, and ethnohistorical evidence, we show that Yesá communities repeatedly dispersed from and returned to the Ohio Valley between 2000 BCE and the 19th century. We begin with an overall examination of historic Siouan migrations as we currently understand them. Then we examine old maps, documents, and language evidence such as toponyms and word borrowings to piece together the broader history of the Yesá people and their trade and migration routes. We discuss some differences between the Yesá and their *Ohio Valley* Siouan-speaking cousins, such as the Biloxi and Ofo – while the Yesá stayed primarily to the north in the central Appalachian Mountains and Piedmont, the Biloxi and Ofo stayed mainly to the south, participating in the Mississippian Culture (aka Mississippian Ideological Interaction Sphere [MIIS] and Southeastern Ceremonial Complex [SCC]).

Keywords: Eastern Siouan, Great Lakes, Indian Removal Act, Ohio Valley Siouan, Mississippian Ideological Interaction Sphere, Monacan, Saponi, Southeastern Woodlands, Tutelo, Virginia Siouan, Yesá, Yessah

1. Introduction

In this paper, we argue that Yesá communities maintained a recurring spatial relationship with the Ohio River Valley across multiple migration cycles spanning more than three millennia.

^{*}A special thanks to all the community members whose memories, knowledge, family documents, and data sources contributed to this effort, especially Lucas Tyree, Dr. Marvin Richardson, Richard Spears, Dee Robinson, Autumn Lee, Vicki Lee, Robert Rice, Lawrence Dunmore, Dr. Crystal Cavalier Keck, Vickie Jeffries, and Victoria “Vicky” Ferguson.



Sutton, Alexandra E. & David V. Kaufman. 2026. Spatializing Yesá (Eastern Siouan—Tutelo, Saponi, Monacan, Occaneechi) history in the Ohio River Valley from 2000 BCE to 1865 CE through ethnohistorical and language evidence. In Ryan M. Kasak & Armik Mirzayan (eds.), *Proceedings of the 42nd and 43rd Siouan and Caddoan Language Conferences*, 115–139. Norman, OK: Siouan and Caddoan Languages Conference. DOI: [10.5281/zenodo.14373271](https://doi.org/10.5281/zenodo.14373271)

We follow the movement of the Eastern Siouan communities that originated and remained in the Ohio River Valley (ORV), as well as those who moved into the nearby Appalachian and Piedmont regions but partially or fully returned to the ORV. Generally speaking, this refers to the Eastern Siouans present in Ohio, Maryland, Virginia, West Virginia, Kentucky, and North Carolina, whose interwoven histories reinforce their shared Ohio Valley Siouan linguistic and cultural features. We exclude the Ofo, Biloxi, Catawba, Waccamaw, and other more southerly Siouans, whose cultural and linguistic features remained distinct from their northern cousins and accepted greater influence from the Mississippian cultural landscape and Muskogean societies of the south. Collectively, we will refer throughout this paper to the Siouans we focus on by using their endonym: the Yesá.

Because one of the authors is a member of the Yesá community while the other is not, this paper occasionally shifts between community-centered language (e.g., “we Yesá”) and conventional third-person academic description; both voices reflect the collaborative nature of the research presented here.

1.1. The people

We Yesá (also: Yesah, Yesá, Yessa, Isswa; Issaw/Essaw; Yesán; Yesáng) are Eastern Siouan peoples who have long stewarded a vast territory along the Appalachian foothills and Blue Ridge Mountains, ranging from the Ohio and Kanawha River Valleys to the southernmost bounds of the Piedmont Plateau (Hale 1883, Alexander & Neumann 1968). The names of Yesá peoples appear in colonial records under numerous orthographic variants, including Yesah, Issaw, Saponi, Tutelo, Occaneechi, and others. A fuller list of historical variants is provided in Appendix A.

As people of the eastern woodlands, the Yesá have been present in the Ohio River Valley and Great Lakes region since time before memory. They have ancestral representation in the Adena (500–100 BCE) and Fort Ancient (1000–1750 CE) cultures and have maintained a continuous presence in the region to this day (Wood 2016). Burial mound-building, of both the accretional earth and individual stone-covered type (Richardson 2016, Gold 1999), is part of Yesá culture and has been retained through the historic period and into today as the practice of hillside/hilltop burials marked with stone cairns (Wood 2016).

The Yesá live contemporarily in Ohio, Virginia, North Carolina, and South Carolina as the Saponi Nation of Ohio (Ohio); the Monacan Indian Nation (Virginia), the Sappony Tribe (Virginia and North Carolina), the Occaneechi Band of the Saponi Nation (North Carolina), the Haliwa-Saponi Tribe (North Carolina), the Waccamaw Siouan Tribe (North Carolina), the Waccamaw Indian People (South Carolina), the Chicora Indian Tribe (South Carolina), and as individuals and families in many other tribal communities, nations, and urban centers.

1.2. The language

The Yesá language (historically called “Tutelo,” “Tutelo-Saponi,” or “Tutelo-Saponi-Monacan”) has been the focus of a revitalization project, begun in 2019 and shared across five of the contemporary Yesah communities; by the time of this writing, members of the revitalization project expressed a preference for the term “Yesa:sahí” to refer to the shared language (see: the *Yesa:sahí Language Project*). In this paper, we will therefore predominately use that term.

Figure 1: Approximate locations of contemporary Yesá communities, with state boundaries

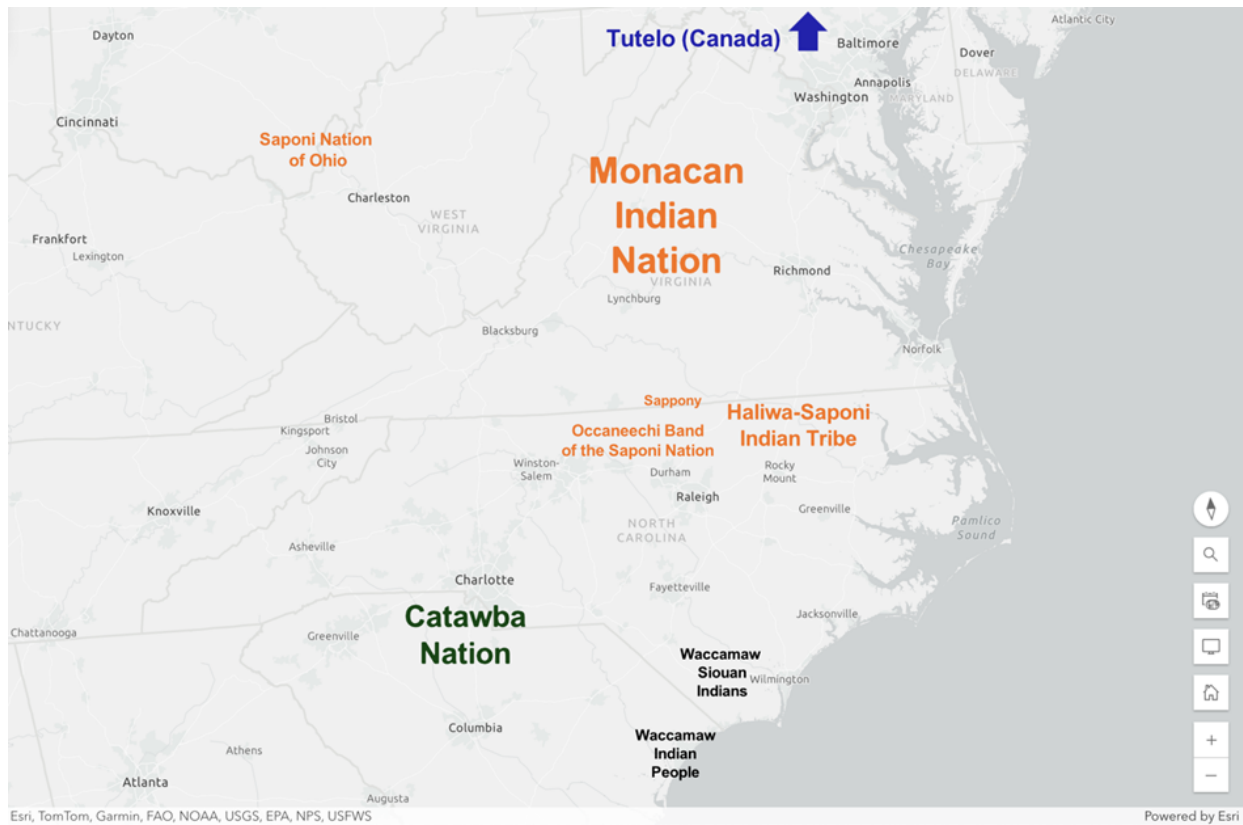
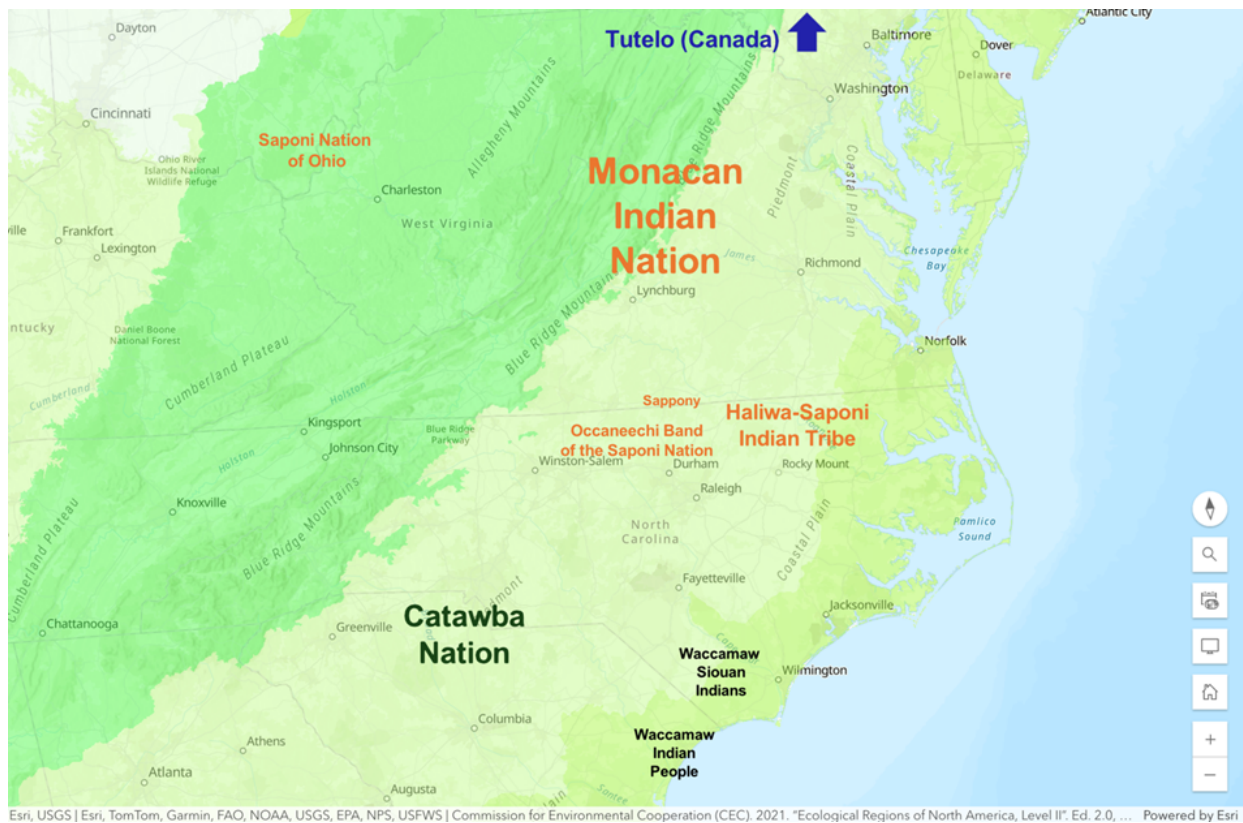


Figure 2: Approximate locations of contemporary Yesá communities, with topography and Level 2 ecoregions (Appalachian Forests, Piedmont, Atlantic Coastal Plain)



Yesa:sahj forms part of the Ohio Valley (“OV” or Southeastern) branch of Siouan, which also includes Biloxi and Ofo and includes dialects thought to be specific to the Saponi, Occaneechi, Tutelo, and Monacan tribes. Biloxi is the most documented of the OV languages, (cf. Richardson & Kaufman this volume, Fig. 1 for a Siouan language cladogram/family tree.) Ofo (Mosopelea) is the least documented, with Yesa:sahj falling somewhere in between.

While Biloxis and Ofos are part of the OV subgroup, they stayed primarily to the south, their large center likely being Tomahitan (*Tamahitq*) in modern eastern Tennessee. They were mostly in contact with Muskogean language speakers and later joined the Lower Mississippi Valley (LMV) language area, or sprachbund. The LMV sprachbund includes Atakapa Ishākkoy, Biloxi, Chitimacha, Choctaw-Chickasaw, Natchez, Ofo, Tunica, and the Mobilian Trade Language (MTL) pidgin—as analyzed in Kaufman (2014, 2019)—along the Gulf of Mexico.

As with other Siouan languages, Yesa:sahj is moderately agglutinative, using both prefixes and suffixes added to a root or head word, usually a verb, that change the meaning of that root, meanings that would normally be conveyed by separate words in English. Yesa:sahj has a predominant subject-object-verb (SOV) word order. Yesa:sahj is the most conservative of the OV languages, retaining the typical Siouan split between active and stative verbs and maintaining the initial Siouan *m* in words like *mani* ‘water’ that has been lost in the other OV languages (Biloxi/Ofo *ani* ‘water’).

Language contact can tell us much about migrations and movements of people. Yesá stayed primarily to the north, in contact with Algonquian and Iroquoian language speakers, as evidenced by word borrowings between Yesa:sahj and Algonquian: Yesa:sahj *qte* ‘town’ appears borrowed from Anishinaabemowin (Ojibwe) *odena* or Lenape *utenink* (cf., Biloxi *tq*, Ofo *itufi*); *makasqs* ‘shoe/moccasin’ is likely borrowed from Carolina Algonquian *mahkusunas*; and *pus* ‘(domestic) cat’ may be borrowed from Lenape (Delaware, Unami) *pushis*, which may itself be a borrowing from Dutch or another European language. The Miami-Peoria number ‘eight’ *palani* was borrowed from Yesa:sahj (cf., Biloxi *dqhudi*, Ofo *pátani*).

Place names, or toponyms, also tell us about people’s locations, movements, and land uses. River names are particularly present in early settlers’ writings about Yesá peoples: “About three Miles and a half farther,” the company comes “to the Banks of another creek, call’d, in the Saponi Language, Ohimpamoni (*Ohipamani*), Signifying Jumping Creek, from the Jumping of Fish during the Spring Season” (Lawson 1709). Another river name recorded was Hicootomony (*Hikatmani*) (transl. ‘Turkey-Buzzard Water’).

The name for the Ohio River as told to LaSalle on his arrival was “Mosopeleacipi” (*Mosopelea:ciپی*, transl. ‘river of the Mosopelea,’ an Algonquian name), and the location of the Mosopelea on that river is recorded on Marquette’s 1673–74 map, Thévenot’s 1681 map, and Franquelin’s 1684 map (Rankin 2007). The name Ofo may derive from Mosopelea due to the frequent Ofo phonemic change of *s* to *f*. Ofo is the only Siouan language to change *s* to *f*, likely through Muskogean language influence, although Biloxi *xw* was also sometimes pronounced *f* (perhaps a dialectal variant through Muskogean language influence) by at least one speaker, Emma Jackson, the last semi-fluent speaker of Biloxi, who passed away in 1934. By Franquelin’s arrival, the bulk of the Mosopeleas had been forced by Haudenosaunee aggression to migrate south, where they took refuge among the Tunicas and others at what is now called the Haynes Bluff mound site (Hanna 1911; Brain, Hamilton & Spiess 1988; Kaufman 2019).

Town names also hold clues to past Yesá life: Moneton (Monyton) can be understood as *Manitq* (*mani*: ‘water’ + *-(i)tq* ‘big’). Because of this, we propose that Monetan was likely a Yesá

settlement since Yesá retained *m-* word initially in the word for water, whereas Biloxi and Ofo dropped it. It was near Occaneechi and villages that clearly belonged to Tutelos and Yesá. Manita was about ten days' journey northeast from *Tamahitq* (Tomahitan), a name could suggest that *tama* was borrowed from Proto-Siouan *hta_ą into Western Muskogean/MTL *tamaha* 'town' + *-(h)itq* 'big.'

However, we suggest that the borrowing went the other way, from Western Muskogean (Choctaw-Chickasaw, Mobilian Jargon) into Siouan (cf., OP *ttqwa*, Os *htqwa*, Ks *tqma*, Bi *tq*), due to the word *tamaha* having its possible origin in a Mesoamerican language through the Mobilian Trade Language (MTL; Mobilian Jargon).¹

2. Migration 1: Siouan splintering in the Ohio River Valley and dispersal to the Southeast (1600 BCE–1600 CE)

According to shared oral history traditions across Yesá tribes, the Ohio River Valley and Great Lakes region is the place from which *all* Siouans originated. Our oral history further recounts that some sort of conflict or environmental change drove a separation into broadly western and eastern groups: brothers were fighting over thinning hunting grounds and animals became thin on the ground, and so the community decided to separate. Some went west, others went south, and still others went east. This history discloses a mutual origin with western Siouan tribes (e.g., Dakotans, Hidatsas, Mandans), an ethnohistorical perspective that aligns with oral histories also reported in western Siouan communities Kaufman (2018).

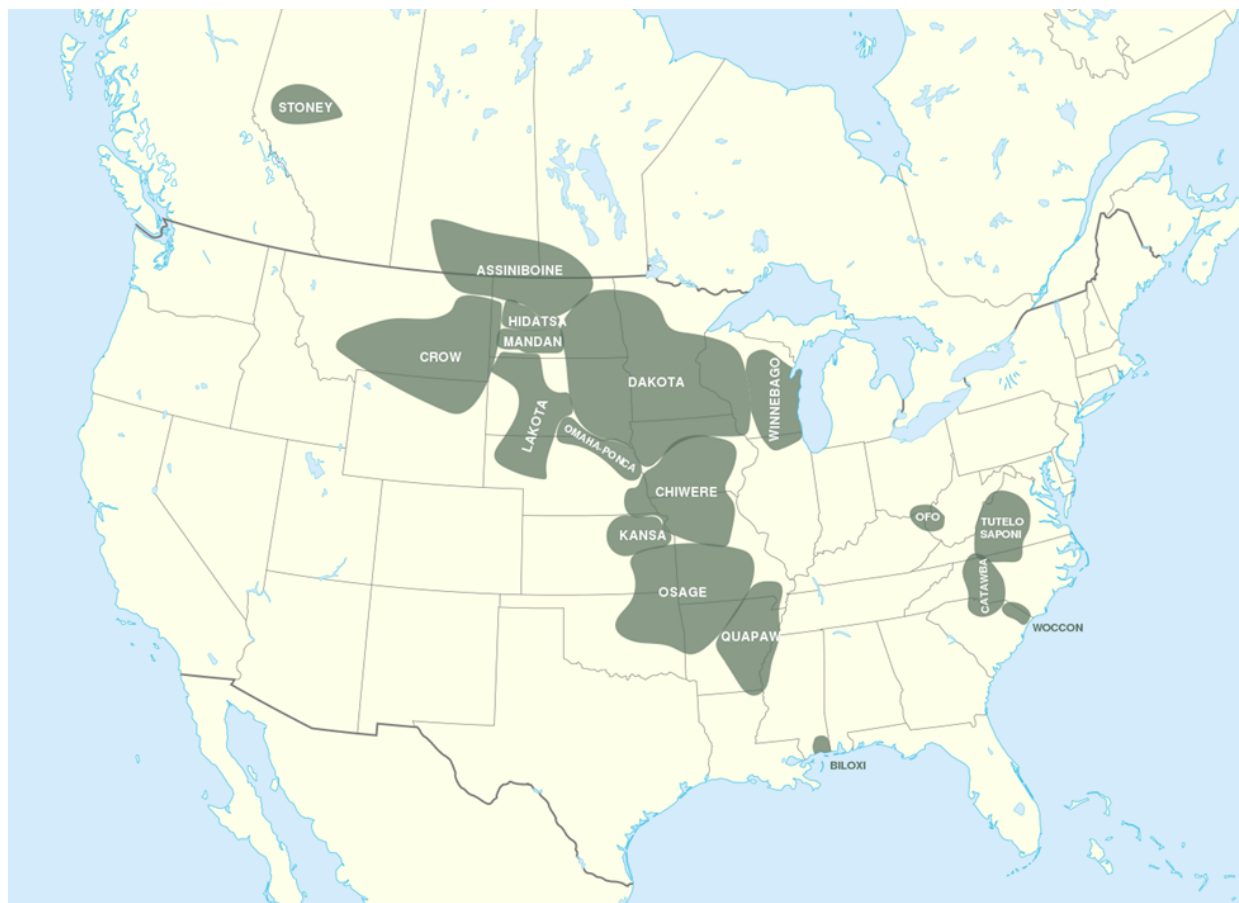
Indeed, the linguistic dispersal of Siouan speakers seems to suggest that just such an event took place. Rankin theorized that, based on linguistic features, an original proto-Siouan group split sometime between 1500–1000 BCE, prior to the Early Woodland Period. This was followed by a later separation of *Mississippi Valley* Siouan (i.e., *those who went west* and became the Dakotan, Dhegihan, Chiwere, and Hocąk speakers) from *Ohio Valley* Siouan (i.e. *those who went east* and became Ofo, Biloxi, Tutelo, Monacan, Occaneechi and Saponi speakers) around 500 BCE. This event was then itself followed by a splitting off of Ofo and Biloxi (i.e. *those who went south*) from *Virginia* Siouan speakers around 800 CE (Rankin 2007). Catawban is distinct enough to presume a much earlier split, and Woccon demonstrates a closer relatedness to Catawban than other Siouan languages (Swanton 1923, Sturdevant 1958).

This origin story indicates a shared lineage with western Siouan tribes (as, for example, Dakotans, Hidatsas, and Mandans) based on ancestral roots in the Ohio River Valley/Cumberland Plateau/Great Lakes region—an ethnohistorical perspective that aligns with the oral histories shared by western Siouan tribes (Kaufman 2018). Indeed, the linguistic dispersal of Siouan speakers seems to suggest that just such an event took place. Rankin theorized that, based on linguistic features, an original proto-Siouan group split sometime between 1500–1000 BCE, prior to the Early Woodland Period. However, the event alluded to by Yesá oral history more likely refers to a later separation of *Mississippi Valley* Siouan (*those who went west* and became the Dakotan, Dhegihan, Chiwere, and Hocąk [Winnebago] Siouan speakers) from *Ohio Valley* Siouan (*those who went east*) around 500 BCE, followed by an additional splitting of Ofo and Biloxi (*those who*

¹For a more in-depth discussion of this possible origin, see Kaufman (2019, 2023); for a discussion of such toponyms related to Biloxi and possibly other OVS languages in general, see Kaufman (2018, 2024).

went south) from Virginia Siouan speakers around 800 CE (Rankin 2007). Catawban is distinct enough to presume a much earlier split, and Woccon demonstrates a closer relatedness to Catawban than other Siouan languages (Swanton 1923, Sturtevant 1958).

Figure 3: Siouan (Eastern and Western) language map²



3. Migration 2: Climate and expansion from the Ohio River Valley to the Virginia Blue Ridge Mountains (950–1600 CE)

This time period began with the dawn of the Medieval Warm Period (MWP; ca. 950–1250 CE), a 300-year climatic phase that helped proliferate maize agriculture across northern and eastern North America (Bird et al. 2017, Hart & Lovis 2013), affording Siouan peoples longer growing seasons and more food security for growing communities.

The best evidence for the scale of impact that the MWP and maize intensification yielded is the rise of Cahokia, a massive city-state and critically important continental trading center that functioned as the seat of *Mississippi Valley* Siouan-speaking tribes' power center in the Midwest.

²The map in Figure 3 was created by Wikimedia user Noahedits and uploaded on November 19, 2019. The original file is available at [https://commons.wikimedia.org/wiki/File:Siouan_\(Eastern_and_Western\)_language_map_01.svg](https://commons.wikimedia.org/wiki/File:Siouan_(Eastern_and_Western)_language_map_01.svg).

Located at the modern-day site of St. Louis, Missouri and reaching its peak around 1050 CE, Cahokia was the largest human settlement north of Mexico—at nearly 20,000 inhabitants (Ethridge & Shuck-Hall 2009). Osage oral history asserts ownership of Cahokia, and other Dhegihan Siouan (Kansa, Omaha-Ponca, Quapaw) groups were also established in the region from ca. 600 CE until Cahokia's abandonment ca. 1200 CE (Lepper et al. 2022). Some linguistic evidence of this history is found in the fact that Osages call Cahokia *Ni okanska Ci* ('Settlement between Water[s]') due to its location in the American Bottom (an extensive marshland between the Mississippi and Ohio Rivers); and the Osage endonym is *Niokaska* – '(People of) the Middle Waters' (Hunter, Munkres & Fariss 2013).

As Cahokia was growing in influence and importance for Mississippi Valley Siouan speakers, a concurrent *Ohio Valley* Siouan (OVS) expansion southward led to the growth of OVS-speaking communities across the Cumberland Plateau, the Appalachian Mountains, Ridge and Valley System, Blue Ridge Mountains, Piedmont, and Atlantic Coastal Plain. By 950 CE, in the Late Woodland Period, evidence of accretional burial mounds in Virginia indicates that these OVS-speakers (i.e., Yesá) had established permanent settlements in the region (Gold 1999), with a shared branching of Siouan language that could now be distinguished as *Virginia* Siouan and persisted forwards (Rankin 2007).

However, this period of stability and expansion was not to last; it was disrupted by the beginning of the Little Ice Age (LIA) ca. 1300 CE. The advent of the LIA was characterized by significant climatic shifts, including an increased frost interval, shortened growing seasons, and sustained drought across the midcontinent—as well as, expectedly, to increased conflict among the “complex mosaic” (Snow 2015) of tribes present in the upper Ohio River Valley region at the time (Hart & Lovis 2013). It is this era of climatic unpredictability, food insecurity, and conflict that is theorized to have led to the decline of Cahokia and the rapid depopulation of the midcontinent that created the Vacant Quarter by 1450 CE (Cobb et al. 2024).

But by the time the worst of the LIA impacts hit, OVS-speakers' prior expansion toward the southeast—i.e., the establishment of *Virginia* Siouan (Yesá) communities—afforded this cultural-linguistic group significant protection, since precipitation and temperature in the lower Ohio Valley region and southeast were less affected than farther north and west (Bird et al. 2017, Cook 2017). That climatic good fortune, combined with the agile nature of Virginia Siouan-speakers' smaller tribal groups and seminomadic traditions (Wood 2016), may have provided enough adaptability for vulnerable Yesá communities to persist and strengthen in the Southeast (Bird et al. 2017), where Yesá agroforestry permitted communities to benefit from both domestic and wild food sources such as corn (*Zea mays*) and eastern wood bison (*Bison bison athabasca*), whose range likely expanded southward during the LIA (Tankersley 1987, Smith 1989). This southward movement of communities may also have helped Virginia Siouan speakers to avoid the Haudenosaunee aggression that was a serious threat by 1450 CE (Davis & Ward 1991).

Thus, between 900–1600 CE, Virginia Siouan-speaking (i.e., Yesá) settlements persisted as far north as the Great Lakes (Anonymous 1883); as far west as the Cumberland Plateau; as far east as Lake Waccamaw (South 1972); and as far south as Lincolnton, North Carolina, the latter being the approximate location of the village of Yssa Orata (transl. from the Spanish as 'Chief/Lord/Cacique [of the] Yssa') (Moore 2002, Fitts 2006), where Siouan language speakers appeared to be a vassal town to Cofitachequi (DePratter 1989) when the Spanish de Soto and Pardo expeditions arrived there between 1539–1543 and 1566–1567, respectively (Pardo 1990).

Throughout this time, Yesá communities were generally somewhat seasonally nomadic,

moving systematically between managed agricultural meadows and the higher hunting grounds of the Appalachian range. Yesá seasonal nomadism was maintained for purposes of subsistence, familial reconnection, and celebratory or religious gatherings (Lawson 1709); as well as for reasons of diplomacy, conflict mitigation, and trade (Smith 2002).

Trade was a major aspect of Yesá economic systems and cultural practice; in fact, the Siouan-speaking Occaneechi boasted a river island-based trade center that was so influential across so many tribal landscapes that Occaneechi itself became a trade language (cf. Richardson & Kaufman this volume this volume). It should also come as no surprise that, given the geological landscape of our homelands, salt and copper historically formed a significant part of the powerful Yesá trade and economic system from the Early Woodland Period through the 1600s (Tooker 1901, Swanton 1946, Miller 1957). It is likely that both early Yesá and their *Ohio Valley* Siouan-speaking cousins, the Biloxis, were involved in the Lake Superior copper trade (Kaufman 2018, 2019, 2024); in addition to the trade that centered around Tomahitan and the nearby Ouasioto (Wasioto) Mountains and Cumberland Gap region (Kaufman 2018, 2024). Respectively, they moved copper east to the Algonquian tribes of the Atlantic coastal plains and south to the Muskogean tribes of the Gulf Coast.

4. Migration 3: “Divers’ and petty nations” displaced by Six Nations from the Ohio Country; slaughtered by settlers in the Upper South; and united in the Piedmont Plateau (1600–1722 CE)

Throughout the 1600s, a series of conflicts related to the Beaver Wars displaced the northernmost Yesá villages (Salvucci & Schiavo 2003), especially those present in the area around the Great Lakes. Because of their smaller group sizes and relatively wide dispersal, Eastern Siouans were targeted frequently by the Haudenosaunee for slave raids and mourning wars (Rhoades 2000), pushing Siouan-speaking groups farther into smaller territories, fortified villages, and marginal landscapes (Emrick 2005, 2015; Smith 2002; Davis & Ward 1991).

In the wake of the Occaneechi slaughter at the hands of Bacon’s Rebellion in 1676, Yesá in the Central Appalachians and Piedmont continued to come under terrible pressure from both the Haudenosaunee raiders from the north and European settler incursions from the east and south (Salvucci & Schiavo 2003, Smith 2002). The situation became so dire that by about 1680, the Occaneechi abandoned their titular trading island, and in the same year, at least three Yesá leaders—the Sappone (Saponi) King Mastegonoe and the Sappone Chief Tachapoake, and the Manakin (Monacan) King Shurenough—became additional signatories to the Treaty of Middle Plantation (1677) (Feest 1974:152), which guaranteed traditional territories, along with hunting and fishing rights and protection in warfare, in exchange for loyalty to the English crown.

Yet the pressure from the Haudenosaunee continued, such that by 1711, British settler John Stevens recorded Yesá tribes as having again sought protection from the colonists:

“These five Nations of the **Totero’s, Sapona’s, Keiauwee’s, Aconechos, and Schoccories**, are lately come amongst us, and may contain, Fit all, about 750 Men, Women and Children.” (Lawson 1711, **emphasis our own**)

Although these and other Eastern Siouan tribes had been recorded as traveling, living, and trading together throughout the seventeenth century, the Saponi Nation first united as a single political entity under the leadership of Chief Tanhé:soka, at the signing of the Treaty of Peace (1714) with Colonel Alexander Spotswood, Governor of the Virginia Colony, at Fort Christanna (Gamble 2013). In the Treaty of Peace, the Saponi Nation was guaranteed 36 sq. mi. (approx. 94 sq. km.) of reservation lands: Fort Christanna and a portion of Brunswick County formed this initial reservation, which also included the nearby Saponi town of “Junkatapurse” (*Chogitaphasu*) (transl. ‘horse’s head’).

The Saponi Nation thereby established comprised several smaller, fragmented Yesá tribes (i.e., the *Saponi*, *Tottero* [*Tutelo*], *Occaneechi*, *Keyauwee*, *Enoke* [*Eno*], *Shakori*, *Meipontsky*, and *Stuckanox*) who had collectively been devastated by war, disease, and the Indian Slave Trade in the Southeast, and who sought safety by taking refuge under British guns. But after Haudenosaunee raiders carried out an overnight ambush on Fort Christanna in 1717 that resulted in the death of a chief, a clan mother, and multiple prisoners of war, the perceived safety of Christanna was destroyed, and its inhabitants scattered again (Gamble 2013).

5. Migration 3: Collapse of Fort Christanna—dispersal across the Piedmont, Blue Ridge, and Allegheny; adoption by Six Nations (1722–1795)

5.1. Staying in place in the Shauhuntacot

By 1722, almost all of the Saponi Nation had abandoned both the reservation at Fort Christanna and the surrounding area. However, a few families remained in neighboring Brunswick County, Virginia, and colonial correspondence suggests that these Saponi Nation members remained a tributary nation to the English for at least a decade after the collapse of the Fort:

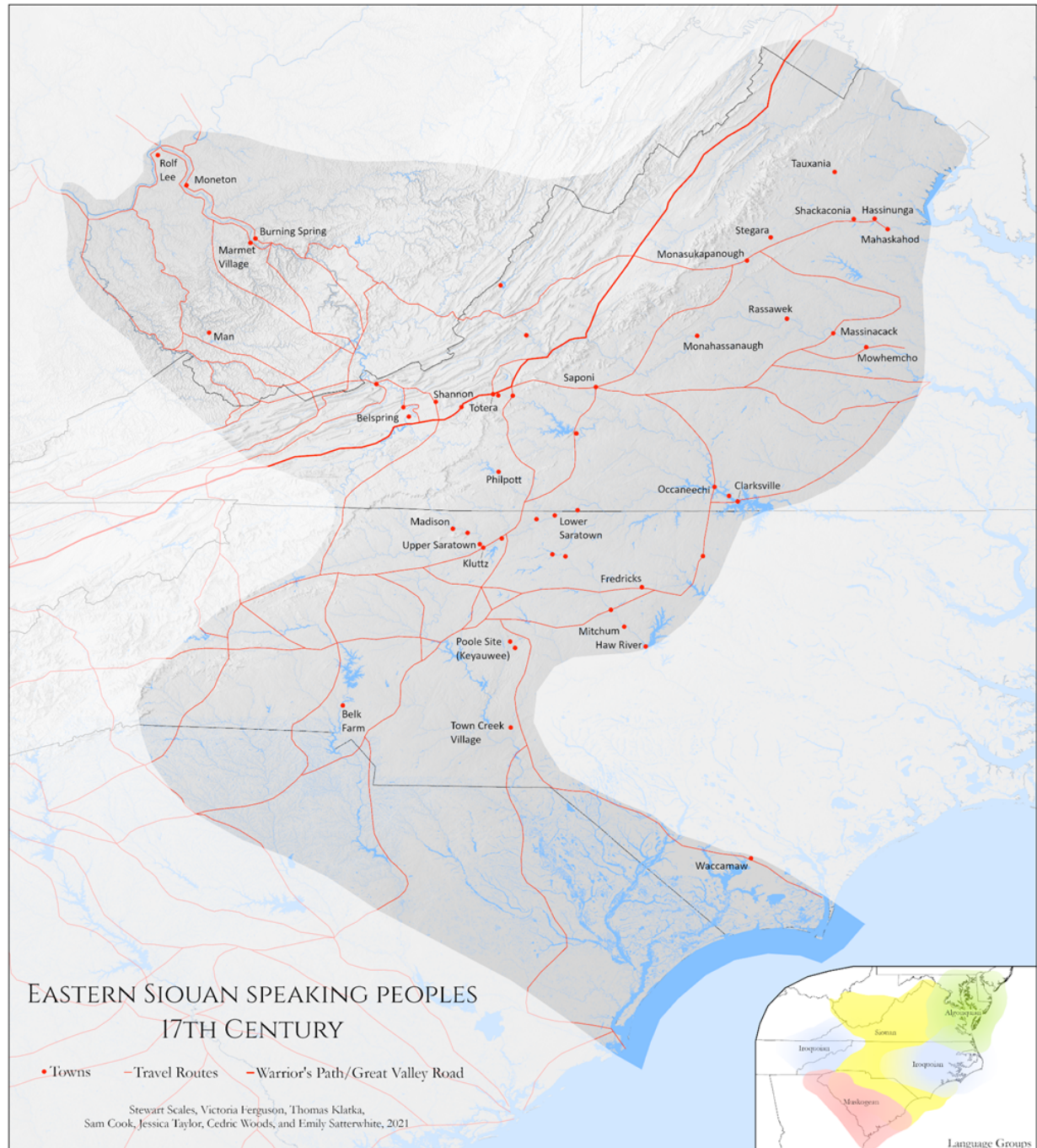
“[...] a Saponie Indian named Sawnie lately return’d from Canada, whereby it appears that the said Indian did behave himself very insolently threatening the Inhabitants with a speedy Incursion of the French Indians, and the said Indian being examined in Council did acknowledge that he was taken by the French Indians, and carried into Canada about two years ago. That he had been with the French Indians in an Incursion on the people of New England but that last Summer he was permitted to go to Albany in company with some of the said French Indians, from whence by the Favour of Capt. Collins [and] the Officers of the Fort there, he had liberty to return to Virginia...and being examined if he brought any message from the French Indians to the Saponies or any other of the Tributarys or if he intended to return to Canada as he had formerly given out, he deny’d both. [...] the Interpreter is directed to signify to the Saponie Nation the Terms upon which they may have the said Indian delivered to them.”

Proceedings from Colonial Council, November 5, 1724

(Kemper 1905, emphasis our own)

Also, on April 4, 1727, at a council held in Edenton, North Carolina, the governor informed the gathered group that:

Figure 4: Map of Eastern Siouan Speaking Peoples in the 17th Century³



“he had lately received a Letter from the President of Virginia, Informing him, that the Tuskarooroes had lately killed several of the Saponi Indians, who are Tribu-

³The map in Figure 4 was produced by the Virginia Tech Eastern Siouan Mapping Team (Scales et al. 2021).

tribes to that Government, and demanded satisfaction of the aforemtd Tuskarooroes – and Blunt, Chief Man of the Tuskarooroes, being ordered to attend this day....Blunt absolutely denied the charge, that either he or any of his people were concerned in the Murther of the Saponies – And alledges it was done by the Northern Indians that had Revolted from him.” (McIlwaine 1910, **emphasis our own**)

During this time, “the Saponi Indians” can be presumed to refer to the confederated Saponi Nation; but by the end of 1727, distinctions are once again made between the Saponi and kin-linked tribes such as the Occaneechi, although a close relationship is implied. A further letter sent to the same governor on October 30, 1727 reads:

“I have had a conference with all [the Meherrin] great men upon the subject of your Letter. They all in General utterly deny that they have any quarrel with the Nottoway Indians, or ever Suspected them of having any hand in the attack that was lately made upon their nation & Captain Rogers who is their Chief Man says that he has no doubt of the Nottoways friendship, having his Mothers Sister and Several of her Children grown up, now living with these people. **They lay the whole blame upon the old Occaneechy King & the Saponi Indians, who as they are your Tributaries, they ask Justice from you on the Offenders**” (Flournoy et al. 1875, **emphasis our own**)

The ongoing and close relationship of the Occaneechi and Saponi is further evinced by Virginia’s House of Burgesses records, which noted in 1730 an “Interpreter to the Saponi and Occaneechi Indians,” suggesting a shared dialect.

And in William Byrd’s journaled accounts of his Saponi guide Ned Bearskin, who led and provisioned him during his 1733 journey (Byrd 1841), Bearskin took Byrd to visit and stay at Occaneechi encampments in modern-day Pittsylvania County, Virginia in an area lying adjacent to Cascade Creek and the Dan River (Calcaterra 2011, Hallock 2014).

In 1742, a complaint made in court in Orange County, North Carolina (again within the homelands of the Occaneechis), accused the Saponi men Alexander Macharton, John Bowling, Manicassa, Captain Tom, Isaac, Harry, Blind Tom, Foolish Jack, Charles Griffin, John Collins, and Little Jack of hog-stealing (Sewell & Hill 2011).

In 1754, there was noted a Saponi trading stronghold (likely shared with Occaneechi) in or near the land of Colonel William Eaton, a wealthy trader in “Old Granville”: modern-day Franklin, Warren, and Vance Counties in North Carolina (Saunders 1886).

In 1756, Moravian settlers near present-day Winston-Salem reported an “Indian fort” settlement near the Haw River, North Carolina, palisaded in the style expected of the Occaneechi (or, potentially, the Sissipahau/Saxapahaw; another *Virginia* Siouan-speaking tribe), indicating that the Occaneechi in particular continued to trade in the homelands from which they had been forced to flee after Bacon’s Rebellion a century prior (Fries 1922).

5.2. Movement to the South (Catawba lands)

From 1729 to 1732, a band of Saponis was recorded as living in the Catawba lands in South Carolina. However, by 1733, these families had returned to Fort Christanna (along with some Cheraw, another Yesá tribe) (Campbell 2011).

From 1743 to 1747, a few members of the Saponi Nation once more took refuge among the Catawba in South Carolina, with Governor Gooch of Virginia reporting that the:

“Saponies and other petty nations associated with them [...] are retired out of Virginia to the Cattawbas.” (Campbell 2011, **emphasis our own**)

However, they departed again a few years later (and at least some portion may have made their way to the New River region of western North Carolina at this time). By 1759, the time of the smallpox epidemic that killed nearly half of the Catawba (Fenner et al. 1988), most of the Yesá had left their Catawba brethren for good.

5.3. Movements to the West (Monacan Confederacy Lands)

Still others shifted west, and joined with their Monacan brethren, who had remained in control of territory within the Blue Ridge Mountains to the west; in the prior century, “the Monacan/Tutelo alliance covered the area of Virginia west of the coastal plain, from the Fall Line of the rivers, north along the Potomac, and south to at least the Roanoke River...The Monacan group included the Mahoc and the Nuntaly; the Tutelo group included the Saponi, Nahyssan, Occaneechi, and probably others” (Wood 2016). In that same prior century, the town of Monasukapanough, on the banks of the Rivanna River, just northeast of Rassawek, the main Monacan town, had likely been a Saponi village (Griffin 1942, Feest 1974).

It therefore comes as no surprise that some portion of the scattered Yesá would follow the paths of history and seek refuge with their cousins to the west. Thus, in 1742, some Saponi were reported among other Natives encountered by settlers entering Monacan lands in Amherst County, Virginia:

“The region was inhabited by Indians who disputed its possession and offered combat with the whites from the very first. Some were of the Sapon (Saponi) nation but most of these red men were ... commonly known as Monacans.” (Campbell 2011, **emphasis our own**)

5.4. Movements to the East (Algonquian lands)

During the 1700s, some Yesá allied with nearby Iroquoian tribes in North Carolina and Virginia at this time and moved eastward, toward Meherrin, Nottoway, and Tuscarora towns; these groups formed communities around Indian Woods in Bertie County, North Carolina, and Unotee in Greensville County, Virginia. By 1737, a land deed recording contains a report of Saponi cabins near Winningham Creek, in Nottoway County, Virginia, some 40 miles (64 km) north of Fort Christanna, and about 100 miles (161 km) northeast of Pittsylvania County (Estes 2012).

Some Yesá traveled even farther northeast, seeking refuge with Algonquian tribes in Dorchester County, Maryland, where they are believed to have assimilated into the Nanticoke by the 1740s (Maryland State Archives 2022).

Some Yesá who went north during this era became deeply embroiled in the French and Indian War (1754–1763), where their individual cultural identities became subsumed into the larger mosaic of intertribal resistance to settler colonialism. However, in Virginia and North

Carolina, a strong and distinctly Yesá presence persisted, buoyed by expanding opportunities for trade and increasingly robust marriage-based alliances with the Nottoways, Meherrins, and Tuscaroras, such that in 1757, the Tuscarora King Blunt visited the Virginia governor, along with:

“thirty-three Tuscaroras, seven Meherrins, two Saponies and thirteen Nottoways”
(Hillman 1966, **emphasis our own**)

5.5. Movements to the North and Northwest (Iroquoian lands)

Still other Yesá went north, submitted to the Haudenosaunee Confederacy, and took up residence in the intertribal stronghold towns of Diaogu (Diahoga), Shamokin, Skorgori, and Coreorgonel. These Yesá were still in Shamokin, at the confluence of two branches of the Susquehanna River, in the winter of 1748, when Bishop J. C. F. Cammerhoff describes his visit, stating that:

“Shikellmy, when informed of my arrival, came to see me, gave me his hand, and welcomed me with smiles...after leaving me, all his sons and their children called, and later sundry Delawares and Tudelars.” (Cammerhoff & Jordan 1905, **emphasis our own**)

It is also likely that Shamokin, a site of political and historical significance to the Six Nations Alliance, was where some Yesá first appealed to the Haudenosaunees for clemency and were accepted; the Cayugas formally adopted them in 1753. The importance of the town was further demonstrated in 1754 when the Six Nations transferred much of the land west of the Susquehanna to Pennsylvania at the Albany Congress (Shannon 2000) but declined to give up Shamokin, saying:

“We will never part with the Land at Shamokin and Wyomink; our Bones are scattered there, and on this land there has always been a great Council fire. We desire You will not take it amiss that we will not part with it, for We reserve it to settle such of our Nations as shall come to us from the Ohio or any others who shall deserve to be in our Alliance. Abundance of Indians are moving up and down, and We shall invite all such to come and live here, that so We may strengthen ourselves.” (Hazard n.d., **emphasis our own**)

These “Nations as shall come to us from the Ohio or any others” must have included the Yesá, for in the following year, the minutes of the Rowan County, North Carolina Court of Pleas and Quarter Sessions from April 19, 1755 indicate that:

“Whereas John Auston A saponia Indian and Harry a susquhanah Indian and Thos a Cattaba Aplied for a pass to the Cattaba Nation being now on their Journey to Conclude a Genl. Peace with the Cattabas in be half of the said Nations and Also presented 3 Belts of Wampum to said Court by which the said Treaty is to be Concluded.” (Isenbarger 2013, **emphasis our own**)

This journey, undertaken by a Saponi man along with men of the Susquehanna and Catawba nations, probably reflects connections made back in Shamokin (Merritt 2011). Despite its initial centrality to intertribal diplomatic relations and its symbolic importance to the Haudenosaunees,

Shamokin depopulated in the midst of the French and Indian War. The success of the French-Six Nations collaboration had temporarily stalled British attempts to take the Ohio Country but fell apart when Braddock's defeat in the Battle of the Monongahela in July 1755 ultimately failed to affirm French dominance over the British.

5.6. Movements to the Ohio Country

Wheeler-Voegelin & Tanner (1974) note the presence of Saponi settlements in Ohio in 1761-1762. These are likely the adopted Six Nations Tutelos and Saponis, who were living in the area with the Cayugas when the British declared a reservation along the Sandusky River at the end of the French and Indian War (1754-1763), when the Treaty of Paris (1763) had the French cede massive amounts of territory, and the British agreed to block colonial settlement on lands west of the Allegheny Mountains, protecting the area around the Sandusky River and Great Lakes as an Indian reserve.

Saponi and Tutelo presence at Sandusky, in Shamokin, and within diplomatic envoys alongside Iroquian nations suggests that at least some Yesá had become tributaries of the Haudenosaunees by this time, and this arrangement appears to have remained intact at least through the rest of the French and Indian War, as Lt. Governor Francis Fauquier of Virginia wrote in 1763 that:

"There are some of the Nottoways, Meherrins, Tuscaroras, and Saponys, who tho' they live in peace in the midst of us, lead in great measure the lives of wild Indians."
(Reese 1981, **emphasis our own**)

By 1771, these Six Nations Saponi-Tutelos in the Ohio Country were settled on the east side of Cayuga Inlet, but their time living in peace was short-lived.

The American Revolution began in 1775, leading to renewed aggression against Indians that drove the Lenape Chief Koquethagechton ('White Eyes') to sign the Treaty of Fort Pitt (1778) with the new American government. The Treaty was intended to reaffirm the strictures of the Treaty of Paris, reserving the Ohio Country as a state to be inhabited exclusively by Native Americans in the new United States. However, Koquethagechton's vision was never realized, as the treaty was not ratified before he was murdered in 1778 by American militiamen (Wellenreuther 2001).

In the following year, Sullivan struck Coreorgonel, the primary Tutelo-Saponi village that had been located at Cayuga Inlet, on the south end of Cayuga Lake since 1753. Coreorgonel was burned to the ground, and the surviving Tutelo-Saponi split into two bodies along with their elder brothers, the Cayugas, one group migrating to New York while the other went on to Canada (Hodge 1910).

The new American regime was disinterested in upholding prior British treaties relating to the Indians of the Ohio Country, but, in 1781, the State of Virginia ceded all lands west of the Ohio River to the Confederation Congress, who then established "An Ordinance for the Government of the Territory of the United States North-West of the River Ohio," better known as the Northwest Ordinance of 1787. In the Ordinance, Article 3 stated that:

"The utmost good faith shall always be observed towards the Indians; their lands and property shall never be taken from them without their consent; and, in their

property, rights, and liberty, they shall never be invaded or disturbed, unless in just and lawful wars authorized by Congress; but laws founded in justice and humanity, shall from time to time be made for preventing wrongs being done to them, and for preserving peace and friendship with them.” (Confederation Congress 1787)

American resistance to the idea of preserving any land for Indians led first to Little Turtle’s War (1785–1794) then to Tecumseh’s War (1810–1813), which had ripple effects throughout the Indiana and Ohio Territories, and nationally, as it coincided with the War of 1812 (1812–1815). Despite the promises of the Jay Treaty (1794), which guaranteed Indians the right to cross the United States–Canada border. Just one year later, the Treaty of Greenville (1795) sacrificed most of the Ohio Country and retained only northwestern Ohio for Indians.

But Yesá warriors, as part of a series of intertribal resistance groups and alliances, continued to engage in efforts to push back the encroaching American settlers, joining with Iroquoian and Algonquian tribes in affiliation along the Ohio, Kanawha, and Susquehannock Rivers, and in the Great Lakes region.

In 1797, Saponis were not listed among the “diverse nations” accused of having been involved in a plot to murder settlers living in Pennsylvania (Almon 1797), an incident showcasing the ratcheting tensions in the wake of the Northwest Indian War (1785–1795):

“That sev’l hundred Indians of divers Nations, in & ab’t the Allegeny Mountains, were gone to hold a Council, & form themselves into a Body, (to whom the ill-dispos’d Indians at Diaogu were gone in order to join them,) & then come down from Allegeny to Pennsylvania, Whither the way was free & open, & murder all the white People.” (Hazard 1853, **emphasis our own**)

But by 1803, Yesá resistance fighters *were* explicitly named alongside the Munsees and Delawares, who had been at the two previous conflicts, and were cited as having been living among other tributary nations in the fragments of the old Six Nations stronghold city of Diaogu/Diaoghu (Diahoga) for twenty years, as described by Thomas Dobson:

“Saponies, Indians who inhabit on a N branch of Susquehanna river. Warriors 30. See also Munsoys [...] Munsies, Delawares, and Sapoones, 3 Indian tribes, who inhabit at Diagho, and other villages up the N branch of the Susquehanna river. About 20 years ago, the two first could furnish 150 warriors each, and the Sapoones 30.” (Dobson 1803, Caldwell 1880, **emphasis our own**).

By 1808, Tecumseh and his brother Tenskwatawa had established a seat for their movement in Prophetstown, Indiana. From there, they sought to unite the various tribes who had been evicted from the Northwest Territory after the collapse of the Western Confederacy, organizing them to fight as pantribal units for an Indigenous future that included a protected state and a defensible homeland for Indians in the Ohio Country (Deloria 2020). These efforts continued until Tecumseh was killed in 1813, in Ontario, Canada, at the Battle of the Thames.

Land seizures took place for the creation of the state of Kentucky in 1792, the state of Ohio in 1803, the state of Indiana in 1816, also built on past land cessions from the Haudenosaunees (Jensen 1936), and the state of Michigan in 1837 (Onuf 1977). American incursions and abrogations continued.

6. Migration 4: Fleeing the Antebellum South: Removal, racist laws and return to the Ohio Country (1795–1865)

6.1. Racialization of Southeastern Indigeneity (1795–1855)

In the eastern United States, massive population losses due to disease, enslavement, and warfare in the 1600s and 1700s meant that southeastern tribes had intermarried extensively with other tribes, settlers, and with Afro-descendant peoples – both via the mixed-ancestry free persons of color (FPC)/free people of color (FPOC) communities (the same communities later termed as “Free Issues,” “Redbones,” “Melungeons,” “Mestizos,” etc.) and via direct intermarriage to enslaved or formerly enslaved (especially self-emancipated) Africans. These kinship networks strengthened Native communities in the Southeast and supported their survival through the seventeenth and eighteenth centuries. By the early nineteenth century, however, crystallizing racial classification systems increasingly rendered Afro-Indigenous communities vulnerable to both Indian removal and anti-Black legal regimes.

The year 1808 therefore was critical for Yesá living in the South. This was the year in which importation of new enslaved Africans was banned, and in response, slave traders and southern slave owners intensified pressure on free people of color, including free Natives, African-Americans, Afro-Natives/Aframerindians (historically referred to as “mustees,” “mestees,” “zambos”; or more rarely, “coyotes” (Jordan 1962; Forbes 1984, 1993; Heath 1999), and other nonwhite or multiracial people), often seeking to kidnap and enslave them to meet the churning demands of chattel slavery.⁴

In addition, legal disenfranchisement continued to progress in the South, as tensions over the rights, role, and presence of free people of color in a bifurcated slaving society continued to erupt. A series of legal developments further eroded the security of free people of color, including the founding of the American Colonization Society in 1817, the Indian Removal Act of 1830, the 1835 amendment to the North Carolina state constitution that disenfranchised all free people of color, preventing them from voting (North Carolina Department of Cultural and Natural Resources 2016); and the 1855 North Carolina Act Concerning Slaves and Free Persons of Color, which further restricted the ability of free people of color (“*All negroes, Indians, mulattoes, and all persons of mixed blood, descended from negro and Indian ancestors, to the fourth generation inclusive [though one ancestor of each generation may have been a white person]*”) to live in the state, travel between states, engage in commerce, serve on juries, or act as witnesses in courts of law (North Carolina General Assembly 1831).

6.2. Forced migration to the Midwest (1799–1863)

Yesá communities were so deeply affected during this period that some families were forced to leave the South entirely, migrating *en masse* to the Ohio Country (an area that later became the states of Ohio and Indiana) in the hope of a safer, better homeland for their families (Hazel 1991). The Ohio Country appealed to them for several reasons: contemporary awareness of the intertribal promise of the Northwest Territory; an ancestral return to an earlier Yesá homeland;

⁴For an example of this, see the kidnapping of Black Cherokees, as described in Pratt (2020).

a legal landscape that did not yet rigidly collapse Black and Indigenous identities into a single racial category; and the growing presence of kinship networks formed by earlier Yesá migrants.

Thus, from 1799 through 1863, Yesá migrants formed interconnected communities across the Ohio Valley. The Yesá families who made the journey were drawn primarily from the counties of Halifax, Warren, Northampton, and Alamance in North Carolina, and the counties of Rockbridge and Amherst in Virginia. Evidence of such origin can be found by reviewing the birth, marriage, and census records of the time. Oral histories shared by descendants of the Yesá migrants to the Midwest recount two paths of departure between 1799 and 1863: some traveled due west, toward the Cumberland Gap, while others headed north, toward Monacan territories in the Blue Ridge Mountains, before crossing toward the Ohio Country. Yesá families have been recorded as migrating during this time to regions of Ohio, Indiana, Michigan – and eventually, Kansas and Oklahoma. In the latter places, they were absorbed into or lived among the Wyandots, Anishinaabe (Ojibwe), and other tribes.

These migrants settled predominately in small communities across southern Ohio and Indiana, where they were recorded as the “Darke County Mestizos,” “the Occaneechi of Greene County,” “the Carmel Indians in Highland County,” the “Vinton County Indians,” and the Saponi Nation of Ohio, also as the “West Virginia Guineas” and the Salyersville Indian Community in the adjacent states of West Virginia and Kentucky (Kessler & Ball 2001, Carlson 2003). These communities were highly endogamous, and families within them remain tightly connected. Migration to the Ohio Country thus functioned as both a strategy of refuge and a means of preserving Indigenous identity within an increasingly racialized American state.

6.3. Midwestern legal struggles for recognition (1840–1880)

In the Midwest, the return of Yesá migrants added a new dimension to the already complex conflicts between Euro-American settlers, free people of color, enslaved African-Americans, and Native communities on the frontier. This was particularly true in the complex political landscape of intertribal wars for sovereignty and resistance that took place in the Ohio Country from 1785 to 1815, as well as the subsequent decades of Indian removal in Ohio and Indiana that followed the Treaty of St. Mary’s (1818), continuing until 1846.

Despite these threats and political shifts, from the 1840s through the 1890s, a series of court cases affirm the presence of Yesá communities in this region and the state’s acknowledgment of their identification as American Indian. The areas of law in which these cases arose were primarily around schooling and voting rights. The key cases included Parker Jeffries vs. Ankeny et al. (1840); Parker Jeffries vs. Ankeny et al. (1842); Thomas Lane vs. Baker (1843); Jeffries vs. Ohio Board of Education (1880). These cases (largely concerning schooling access and voting rights) became key legal platforms upon which Yesá migrants asserted Indigenous identity within the racialized legal systems of the Midwest.

These cases were effective at creating legal precedent to assert the indigeneity of Yesá migrants in their Midwestern political landscape but also created ripple effects that attest to the continued difficulty Yesá individuals had and the racism and anti-Indigenous discrimination they faced. On September 19, 1843, Augustus M. Jeffries petitioned the court in Ohio to change his last name to Robinson, presumably due to the controversy associated with the Jeffries name, and perhaps hoping to distance himself from being perceived as colored, Black, or Native. In its findings, the court noted that the petitioner was of Indian ancestry.

As Removal proceeded in the Midwest, the pressures on Yesá communities paradoxically eased. Federal authorities focused primarily on large, politically organized nations capable of resistance – these few and scattered migrant Indians (dismissed in a previous era by officials as “petty nations”) were essentially below notice. Once again, the smaller, dispersed nature of Yesá communities permitted Yesá who returned to the Midwest to fly under the radar of the threatened American state, and to persist as marginal occupants within an oppressive landscape.

7. Conclusion

Taken together, these migrations demonstrate that the Ohio River Valley functioned not simply as an ancestral homeland but as a recurring center of Yesá cultural geography across multiple historical eras. The Yesá (Monacan, Tutelo, Saponi, Occaneechi, Eno, Cheraw, and other Eastern Siouan nations) have played a significant role in the history of Native North America, and the Appalachian Mountains, Piedmont, and Ohio River Basin have remained, for millennia, a landscape of continuous community presence for Yesá peoples.

The Yesá language Yesa:sahj is now in the process of being reclaimed and revitalized (see Richardson & Kaufman this volume). As noted in Wood (2016) and in Richardson & Kaufman (this volume), Yesa:sahj revitalization is challenging for several reasons, not least of which is the lack of extant texts and narratives. But we know that Ohio Valley Siouan languages, including Yesa:sahj, long obscure to linguists and Siouanists, were major languages spoken by powerful peoples in the east.

The Yesa:sahj Language Project, founded in 2021, is an intertribal, community-led non-profit organization that works to translate, preserve, rebuild, and teach the language to community members and comprises a leadership board with representatives from all five contemporary Yesá nations (the Monacan Indian Nation, the Sappony Tribe, the Occaneechi Band of the Saponi Nation, the Saponi Nation of Ohio, and the Haliwa-Saponi Tribe). Together, we are charting a course forward for language reawakening and a strengthened Yesá future.

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Appendix A

A digital monument to Yesàh peoples, funded in 2024 by the Mellon Foundation's Monuments Across Appalachian Virginia (MAAV) can be visited here: www.oxateta.org.

A further exploration of the Shared History of Yesàh Peoples can be found in this StoryMap: <https://storymaps.arcgis.com/stories/f9de74961b214f71993535f9926c702f>

In deference to the importance placed on names by Dixon (2002), we note here that the names of various Yesà peoples have been rendered multitudinously (nonexhaustively) as:

- Yesà: Yesàh, Yessa, Yesan, Yesang, Ysaa [Sp.] Yssa [Sp.], Isswa, Iswa, Issaw, Essaw, Esaw, Nasaw, Nahysson, Niasont, Oniasont [Fr.], Oniasontke [Fr.], Onasontke, Honniasont [Fr.], Honniasontkeronon [Fr.], Honiasontgeh [Fr.], Monahassanugh, Monasickapanough, Monasiccapanoes
- Winyah: Winyaw, Weenee
- Waccamaw: Woccon, Waccommassus, Waccamawe, Waccamau, Wacommassee, Wacemaus, Waggamaw, Wicomaw, Wigomaw, Guacaya [Sp.], Waxhaw (?)
- Tutelo: Tudelars, Toderochrone, Toterò, Tottero, Kattera, Shatteras, Toterà, Totiri, Toderichroone
- Sugeree: Sagaree, Sataree, Suturee, Sugau, Sukan, Sagan
- Stuckanox: Stenkenocks, Stegaraki, Steukenock, Stegarake
- Sewee: Seewee, Seawee, Seewa, Sewoe
- Saponi: Pony (see: Mt. Poney), Paneese, Paanese, Sa-paahese, Sa-poonese, Sapon, Saponny, Sapony, Sapiny, Sapong, Saponà, Sapoones, Saponces, Saponnee, Sapokanikan, Sapohanikan, Saponies, Sapenyys, Tisepan, Monasuccapanough
- Santee: Zantee, Seretee, Seratee
- Pee Dee: Pedee, Peedee, Peadea, Pidees
- Occaneechi: Aconecho, Akenatzy
- Mosopelea: Monsoupelea, Mansopel, Monsouperia, Ousperie, Ounspi, Oussipe, Houspé
- Monyton: Moneton, Mohetan
- Manahoac: Mannahoac, Mahock, Mahoc, Mangoac
- Monacan: Manakin, Monakin, Manachee, Manycan, Mannacans, Mehemenchoes, Mowhemcho, Massinacacs, Massinacak, Flanhaskies, Manohaski, Hanohaski
- Meipontsky: Meipoutsky
- Keyauwee: Keiauwee, Keyawee, Keyawee, Kewawee, Keeowee, Keeowaw, Keeawawe
- Eno: Enoke, Enoe

- Congaree
- Coharie: Schohari, Neusiok
- Chicora: Shakori, Chicorana, Chicoria, Chicorie, Chickoree, Chichanee, Chicoula, Chiquola, Chigoula [Fr.]
- Cheraw: Sara, Saura, Saraw, Sarrah, Charra, Charaw
- Catawba: Esaw, Issa, Iswa, Ysa, Katapu, Ani'ta'gua
- Other names and collateral tribes: Tomahitan, Mehemenchoes, Tanxanias, Nuntaneuk, Nuntaly, Black Minqua, Black Mingoes

Collective names for various combinations of Yesá peoples:

- The Saponi Nation (consisting of the Saponi, Tottero [Tutelo], Occaneechi, Keyauwee, Enoke [Eno], Shakori, Meipontsky, Stuckanox); Christanna Indians, Spotswood's Indians
- The Monacan Confederacy (consisting of the Monacan, Mowhemenchugh, Massinnacack, Monahassanugh, Monasickapanough, and others)
- The Manahoac Confederacy (consisting of the Manahoac, Tegninateo, Whonkentia, Shack-
aconia, Ontponea, Hassinunga, Stegeratke)

About the Proceedings

The *Proceedings of the Siouan and Caddoan Languages Conference* (SCLC) is an annual or biannual periodical where any presenters at the SCLC are welcome to submit papers for publication. The scope of the papers that appear here range from highly theoretical linguistics papers to papers dealing with philology, language education, and cultural topics relating to Siouan- or Caddoan-speaking peoples. The aim of the *Proceedings* is to be inclusive towards scholars from a variety of backgrounds and provide a venue for work that scholars, community members, and/or educators can utilize to promulgate their work relating to these two language families.

These papers are reviewed by each volume's editor(s) and other volunteers from the Siouanist and Caddoanist communities. These volunteers are typically sought through the Siouan Linguistics List. While the List may have "Siouan" in the title, it is also a community for those working on Caddoan languages, given the historical overlap between scholars who worked with communities from both cultural and linguistic groups.

Anyone interested in Siouan and/or Caddoan languages is welcome to sign up for the Siouan Linguistics List, which is operated through the University of Nebraska. The link to sign up for the List appears below:

<https://mailman.nebraska.edu/mailman3/lists/siouan.lists.unl.edu/>

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