

A grammar of Mandan

Ryan M. Kasak

Comprehensive Grammar Library ??

Comprehensive Grammar Library

Editor: Martin Haspelmath

In this series:

1. Jacques, Guillaume. A grammar of Japhug.
2. Grimm, Nadine. A grammar of Gyeli.
3. Maurer-Cecchini, Philippe. A grammar of Tuatschin: A Sursilvan Romansh dialect.
4. Visser, Eline. A grammar of Kalamang.
5. Caballero, Gabriela. A grammar of Choguita Rarámuri: In collaboration with Luz Elena León Ramírez, Sebastián Fuentes Holguín, Bertha Fuentes Loya and other Choguita Rarámuri language experts.

This series grew out of the grammars published in *Studies in Diversity Linguistics*, which are proudly mentioned:

4. Berghäll, Liisa. A grammar of Mauwake.
5. Wilbur, Joshua. A grammar of Pite Saami.
7. Schackow, Diana. A grammar of Yakkha.
8. Liljegren, Henrik. A grammar of Palula.
9. Shimelman, Aviva. A grammar of Yauyos Quechua.
11. Kluge, Angela. A grammar of Papuan Malay.
12. Kieviet, Paulus. A grammar of Rapa Nui.
22. Döhler, Christian. A grammar of Komnzo.
23. Yakpo, Kofi. A grammar of Pichi.

ISSN (print): 2748-971X

ISSN (electronic): 2749-7798

A grammar of Mandan

Ryan M. Kasak

Ryan M. Kasak. 2024. *A grammar of Mandan*. Berlin: Language Science Press.

This title can be downloaded at:

`redefine\lsURL`

© 2024, Ryan M. Kasak

Published under the Creative Commons Attribution 4.0 Licence (CC BY 4.0):

<http://creativecommons.org/licenses/by/4.0/>

ISBN: no digital ISBN

no print ISBNs!

ISSN (print): 2748-971X

ISSN (electronic): 2749-7798

no DOI

ID not assigned!

Cover and concept of design: Ulrike Harbort

Fonts: Libertinus, Arimo, DejaVu Sans Mono

Typesetting software: `XELATEX`

`redefine \publisherstreetaddress`

`redefine \publisherurl`

Storage and cataloguing done by `redefine \storageinstitution`

Contents

Preface	v
Acknowledgments	vii
Abbreviations	ix
1 Introduction	1
1.1 Background on the Mandan people	2
1.1.1 Overview	2
1.1.2 900 CE to 1851 CE	6
1.1.3 1851 CE to present day	11
1.2 Genetic relationships	15
1.3 Previous research on the Mandan language	20
1.4 Personal fieldwork and sources of data	23
1.4.1 Personal fieldwork	23
1.4.2 Sources of data	24
1.5 Organization of this book	26
2 Grammatical overview	29
2.1 Sound inventory	29
2.1.1 Consonants	29
2.1.2 Vowels	30
2.1.3 Orthography	31
2.2 Morphophonology	31
2.2.1 Consonantal lenition and syncope	32
2.2.2 Epenthesis and vocalic syncope	33
2.2.3 Nasal harmony	34
2.3 Allomorphy	35
2.3.1 Subject and object prefixes	36
2.3.2 Enclitics	37
2.4 Templatice morphology	38
2.5 Phrasal structure	39
2.5.1 Noun phrases	39

Contents

2.5.2	Postpositional phrases	40
2.5.3	Verb phrases	41
2.6	Sentence structure	42
2.7	Topicalization	44
2.8	Multiclausal structure	45
2.8.1	Switch-reference	45
2.8.2	Serial verb constructions	46
3	Phonetics and phonology	49
3.1	Consonants	50
3.1.1	Consonant inventory	50
3.1.2	Plosives	52
3.1.3	Affricates	60
3.1.4	Fricatives	63
3.1.5	Sonorants	71
3.2	Vowels	75
3.2.1	Monophthongs	75
3.2.2	Diphthongs	77
3.2.3	Dorsey's Law excrecent vowels	78
3.3	Orthography	80
3.4	Phonotactics	82
3.4.1	Consonant clusters	82
3.4.2	Syllable structure	89
3.5	Word boundary-independent morpho-phonology	92
3.5.1	Pseudo-geminate dissimilation	93
3.5.2	Initial sonorant fortition	97
3.5.3	Ablaut	102
3.6	Word boundary-dependent morpho-phonology	113
3.6.1	Hiatus resolution processes	113
3.6.2	Metathetical processes	131
3.6.3	Nasal harmony	136
3.6.4	Stress	142
3.7	Sound symbolism	165
4	Verbal morphology	169
4.1	Prefix field	169
4.1.1	Derivational prefixes	170
4.1.2	Inflectional prefixes	214

Contents

4.2	Suffix field	266
4.2.1	Augmentative suffix: <i>-xte</i>	268
4.2.2	Intensifier suffix: <i>-sjh</i>	270
4.2.3	Similitive suffixes: <i>-esh</i> and <i>-eshka</i>	271
4.2.4	Summary of suffixes in Mandan	272
4.3	Enclitic field	273
4.3.1	Aspectual enclitics	275
4.3.2	Evidential and modal enclitics	293
4.3.3	Number enclitics	319
4.3.4	Negative enclitics: <i>=nix</i> and <i>=xi</i>	325
4.3.5	Complementizer enclitics	328
4.4	Formative ordering	358
5	Nominal morphology	363
5.1	Noun derivation	363
5.1.1	Derivational morphology	364
5.1.2	Compounding	382
5.2	Possession	385
5.2.1	Inalienable possession	385
5.2.2	Alienable possession	390
5.2.3	Summary of possession	391
5.3	Direct address	392
5.3.1	Personal names	393
5.3.2	Vocatives	395
5.3.3	Kinship terminology	396
5.4	Pronouns	402
5.4.1	Independent pronouns	402
5.4.2	Interrogative pronouns	408
5.5	Quantification	419
5.5.1	Numerals	419
5.5.2	Quantifiers	428
5.5.3	Summary of quantification	429
5.6	Postpositions	429
5.6.1	Postpositional enclitics	430
5.6.2	Free postpositions	444
5.7	Deixis and definiteness	447
5.7.1	Articles	447
5.7.2	Demonstratives	449
5.7.3	Topics	463

Contents

6 Syntax and clause structure	471
6.1 Nominal constructions	471
6.1.1 Noun phrases	472
6.1.2 Quantifiers and numerals	473
6.1.3 Possession	474
6.1.4 Postpositional phrases	477
6.1.5 Coordination	480
6.2 Verbal constructions	482
6.2.1 Verb phrases	482
6.2.2 Simple clause structure	484
6.2.3 Negation	487
6.2.4 Benefactive constructions	491
6.2.5 Topicalization	493
6.2.6 Illocutionary force and allocutive agreement	497
6.3 Multiclausal structures	498
6.3.1 Switch-reference	498
6.3.2 Serial verb constructions	501
6.3.3 Auxiliary verb constructions	503
6.3.4 Causatives	509
6.3.5 Desideratives	512
6.3.6 Clausal coordination and connections	515
6.3.7 Relativization	520
7 Narrative structure	531
7.1 Discourse markers	531
7.1.1 Interjections	532
7.1.2 Filler words	533
7.1.3 Narrative connectors	534
7.2 Narrative: ‘Eye Juggler’	541
7.2.1 Interlinear gloss	542
7.2.2 Free translation	563
References	567
Index	581
Name index	581

Preface

First and foremost, I want to expressly state that I profess no personal ownership over the Mandan data or any aspect of the Mandan language presented here and welcome all Mandan community members to make free and unimpeded use of any aspect of the materials present here as they see fit. I expect no financial compensation from any Mandan people to use any part of the present book for the purpose of creating language learning materials, composing songs or prayers, or engaging in any cultural repatriation practices. The data and the language in general does not belong to me; it belongs to the Mandan people. *Núu'etaa numá'kaaki qqwe wakápusa wakú'ro'sh. Káni ínuma'kaakis tóo'irooro'sh..*

This book is the culmination of work that began almost a decade and a half ago in a computer lab on the north side of Chicago. Back then, I was an M.A. student at Northeastern Illinois University in the spring of 2010. I was teaching Russian and Spanish at the high school level during the day in the Hermosa neighborhood of Chicago, and I was working on my Master's degree in Linguistics in the evenings. I initially chose a degree in Linguistics so I could branch out into teaching ESL classes to further my career prospects as a high school teacher. I had also believed that that a degree in Linguistics would improve my ability to teach my Russian and Spanish students to learn other languages in a more efficient manner. However, I quickly realized that Theoretical Linguistics was too captivating a subject to ignore, though my eventual M.A. thesis was very much in the realm of Applied Linguistics and Language Policy. As I was working towards gathering data for my thesis, Dr. John Boyle—my then-professor and now-friend—was teaching Translations and Linguistic Analysis: Mandan as an upper-level course. My initial thought was that it would be a great elective credit, but it wound up shaping the trajectory of the rest of my life.

My first interests in Linguistics revolved around older Indo-European languages, given that I had been teaching Russian and Spanish at the high school level in Chicago. I quickly realized that Indo-European Linguistics was a field that had an enormous amount of previous literature to consume before I could adequately wade into that field, but Siouan Linguistics was still full of possibilities and new things to say. That seminar on Mandan at NEIU really opened my eyes to how much about language I did not know and reinforced my desire to continue onto

Preface

a more advanced degree. I produced a lengthy paper for that Mandan seminar course on vertitivity and motion verbs in Mandan, and that paper became a writing sample for my Ph.D. program applications.

My subsequent move to Yale for my Ph.D. led me to increasingly learn again and again that the Mandan language was itself worthy of extensive study on its own, and that I could happily leave analyses of Old Church Slavonic clitic orderings and the use of subjunctive in Latin to the professionals; Mandan had enough unanswered questions that any course I took could be used to look at some issue of Mandan grammar. These issues led to my dissertation, from which the present book stems.

For the past decade, I have thoroughly enjoyed going to conferences to present on topics related to the grammar of Mandan. The annual Siouan and Caddoan Languages Conference has been somewhere I have made good friends and colleagues, and where I have acquired a fuller understanding of how Mandan does and does not work based on looking at its distant relatives across the Siouan language family. The classes that I teach here at the University of Oklahoma are also filled with examples from Mandan. I have used the allocutive agreement markers in my Sociolinguistics course to talk about how different languages treat speaker and listener gender in discourse; I have used instances of nasal harmony in my Phonology course to illustrate how long-distance phonological processes work; and I have used recordings of L1 Mandan speakers from the 1960s speaking English to show how one's L1 affects their L2 in my Second Language Acquisition Theory course. The Mandan language has helped my students become better linguists in the same way that—I think—it made *me* a better linguist.

The Mandan language has demonstrated that its complexities are worthy a numerous tomes, and herein I offer up my attempt to make good on this statement. I have expanded my interest into other Siouan languages through my interest in the Mandan language, and I acknowledge that my academic career would never be where it is at without the Mandan language being the locus of my theoretical linguistic studies. I again want to make it clear that any aspect of this book is free and available to be used in any way by members of the Mandan community and I welcome any requests for the materials I used to create the corpus built herein.

Acknowledgments

Núu’etaa numá’kaaki wáakapusmak wakápusa wakú’ro’sh.

This book would not have been possible without the generosity and foresight of various Mandan speakers who gave their time and energy into recording their language and their knowledge. Some of the key Mandan individuals who have provided to this corpus, which extends back over a century and a half, include: Mrs. James Kipp (a.k.a., Earth Woman), Mrs. Holding Eagle (a.k.a., Scatter Corn), Mr. Ben Benson (a.k.a., Buffalo Bull Head), Mr. Flat Bear (a.k.a., Bear on the Flat), Mr. Walter Face (a.k.a., Wounded Face), Mrs. Little Crow (a.k.a., Otter Woman), Mr. Paul Crows Heart (a.k.a., Crows Heart), Mr. Sitting Rabbit, Mr. Little Crow, Mr. Wolfs Head, Mr. Wolf Ghost, Mr. White Calf, Mr. Foolish Woman, Mr. Little Owl, Mrs. Good Bear, Mrs. Calf Woman, Mrs. Owen Baker, Mrs. Front Woman, Mr. Wolf Chief, Mrs. White Duck, Mrs. Edna Face, Mrs. Nora Baker, Mr. Stephen Bird, Mr. Mark Mato, Mrs. Bessie Medicine Stone, Mrs. Mary Atkins, Mrs. Blanche Benson, Mr. Burr Crows Breast, Mrs. Annie Eagle, Mrs. Mattie Grinnell, Mr. Albert Little Owl, Mr. Ralph Little Owl, Mrs. Otter Sage, Mr. John Stone, Mr. Clyde Baker, Mr. Jacob, Bird, Mr. William Bell, Mrs. Louella Benson Young Bear, Mr. Ernest Medicine Stone, Mr. Carl Whitman, Ms. Ann Solano, Mr. Leon Little Owl, Mr. Corey Spotted Bear, and Mr. Edwin Benson.

I also gratefully acknowledge that I was able to assemble the materials and information found in this book over the years thanks to the generous financial support of the American Philosophical Society’s Phillips Fund for Native American Research, Yale University’s A. Richard Diebold Jr. Graduate Fellowship and the Frederick W. Hilles Memorial Scholarship Fellowship, Northeastern Illinois University’s Dr. Bernard J. Brommel Doctoral Scholarship, and freelance employment by the Language Conservancy through its contract with the Mandan-Hidatsa-Arikara Nation’s Department of Education. I also could never have completed this book without the support provided to me by my employer, the University of Oklahoma, where I have been afforded a semester of teaching release after my third year to ensure that this book is completed.

On a more personal level, my parents Raymond and Kathleen Kasak have contributed to much to the evolution of this book by asking me repeatedly over the years, “is it done yet?” Since the spring of 2015, many phone conversations

Acknowledgments

ended with a question as to the status of this work. First, they asked when I was working on my dissertation, which this book uses as a launchpad for a more comprehensive grammar. Later, as I was preparing this manuscript for submission to Language Science Press, they would ask me whether I was done with this chapter or that chapter yet. Any academic surely understands how incredibly welcome and not at all stressful such questions were.

My partner and wife Dr. Colbi Beam has been a singular source of inspiration to complete this work and I am forever grateful for her love and support. I have no doubt that this book would have taken far longer to complete without her encouragement. Having written a dissertation herself, she understood the nature of writing expansive pieces of work and she was helpful in putting aspects of the writing process in perspective for me. Colbi, you are simply the best.

Abbreviations

Abbreviations

1	first person	INDF	indefinite
2	second person	INTS	intensifier
3	third person	LIE	‘lying’ positional
A	active pronominal	LOC	locative
ABLE	dynamic modal	M	male
AGT	agentive	MID	middle voice
AL	alienable possession	MID	medial distance
ANAP	anaphoric	MTH	‘by mouth’ instrumental
	demonstrative	NARR	narrative evidential
ANF	aforementioned topic	NEG	negative
ATT	attitudinal evidential	NOM	nominalizer
AUG	augmentative	ORD	ordenalizer
AUX	auxiliary verb	PERS	personal
CAUS	causative	PL	plural
CEL	celerative aspect	POS	positional
COLL	collective	POSS	possessive
COMP	complementizer	POT	potential mood
COND	conditional	PRCE	‘by piercing’
CONT	continuative	PRO	instrumental
DECL	declarative	PROX	pronoun
DEF	definite	PRSP	proximal distance
DEM	demonstrative	PRTV	prospective aspect
DIR	directional	PUSH	partitive
DIST	distal distance	PV	‘by pushing’
DIST	distributed	QUOT	instrumental
DS	different-subject	RECP	preverb
	switch-reference	REL	quotative evidential
DU	dual	RFLX	reciprocal
DUB	dubitative evidential	S	relativizer
EMPH	emphatic	SEQ	reflexive
EVID	evidential	SIM	stative pronominal
F	female	SIT	sequititive
FOOT	‘by foot’ instrumental	SMLT	simultaneous aspect
FRCE	‘by force’ instrumental	STND	‘sitting’ positional
HAB	habitual aspect	SS	similitive
HAND	‘by hand’ instrumental		‘standing’ positional
HEAT	‘by heat’ instrumental		same-subject
IMP	imperative		switch-reference
XINCP	inceptive aspect	SUPE	superessive
IND	indicative	SUUS	<i>suus</i> marker
INS	instrumental	TOP	topic
	intensifier	TR	transitivizer

1 Introduction

Mandan [ISO: mhq] is a Siouan language spoken in northwestern North Dakota on and near the Fort Berthold Indian Reservation. With no remaining L1 speakers and with between one and two dozen remaining heritage or L2 speakers, Mandan is critically endangered. Mandan also possesses some typologically rare phenomena, such as allocutive agreement similar to Basque, where a sentence-final verb must bear some marking that denotes whether the listener is male or female. Indeed, verbs in Mandan can display a large amount of complex morphology. In particular, Mandan employs a high degree of affixation on its verbs, and has often been described as having templatic morphology, as have Siouan languages in general (Rankin et al. 2003).

Mandan has not been as well-studied as its cousins Lakota (e.g., Rood & Taylor 1996 and Ullrich & Black Bear 2016) or Crow (e.g., Wallace 1993 and Graczyk 2007), though Mandan has been described in very compact grammars that do not exceed 40 pages (e.g., Kennard 1936 and Mixco 1997a). Kasak (2019) presents a more in-depth analysis of certain aspects of Mandan grammar, especially its sounds system and its verbal morphology, but the emphasis of that work is to present these aspects of its grammar through a particular theoretical lens. This book is an attempt at presenting a formal description of Mandan grammar without certain theoretical assumptions: i.e., the purpose of this book is to provide a grammar of the Mandan language that is as comprehensive as possible and one whose goal it is to portray the data hereafter in as theoretically neutral a light as possible. The need for a grammar that is able to be accessed by scholars and community members stems from the fact that most published work on Mandan has been written almost exclusively in underlying representation per certain authors' interpretation of the phonology of Mandan (i.e., Hollow 1970 and Mixco 1997a), and those works present a challenge to members of the Mandan community who might otherwise wish to utilize them for personal reasons. This book contributes to empirical literature by organizing data from existing Mandan corpora in order to facilitate its use by linguists, but it is also written so that members of the Mandan community will be able to find an explanation for how words and sentences are built in their language.

1 Introduction

In this chapter, I present a historical sketch on the Mandan people in §1.1 to contextualize how their language became endangered and the conditions imposed upon them to further complicate their ability to perpetuate their cultural and linguistic heritage on the Northern Plains that dates back at least a millennium. Next, I talk about Mandan’s place within the Siouan language family in §1.2. I elaborate on the work previous scholars have done on the language in §1.3 and what I have done in my own fieldwork in §1.4, and I end the chapter by giving an overview of the organization of the rest of this book in §1.5.

1.1 Background on the Mandan people

In this section, I provide a background of the Mandan people and the circumstances behind the massive drop in the population of Mandan speakers, which has ultimately forced any future research on the language to be done through extant corpora and recordings instead of fieldwork with fluent speakers to seek judgments and record novel data. The lack of fluent L1 speakers of the language restricts the future viability of exploring the grammar of Mandan more fully and accentuates the need to document as much of the language as possible while heritage speakers are still able to contribute their own insight to our understanding of Mandan. It is necessary to understand the context behind the interaction between the Mandan people and outside groups and individuals, as a number of factors have contributed to the state of the language today and the shift to languages other than Mandan, such as English and Hidatsa.

1.1.1 Overview

According to tradition, the Mandan have several creation stories that explain the origin of their people and how they came to live on the Upper Missouri. In Hollow’s (1973a) narratives, Mmes. Otter Sage and Annie Eagle both tell variations on how *Kinúma’kshi* ‘Royal Chief’¹ and *Numá’k Máxana* ‘Lone Man’ create the world and populate it with beings that look like them, as well as other beings. In a different explanation on the origin of the peopling of the world comes from the telling of Mr. Mark Mato² (1886-1964), who relates a version of this second creation story to Kennard where people emerged from beneath the earth near the

¹The name of this figure often is rendered in English as ‘Old Man Coyote,’ and stories involving his deeds and travails are often called coyote stories, which traditionally should be told only during the winter, according to consultants.

²Mr. Mato assisted both Bowers and Kennard with their translations of Mandan narratives and traditional accounts. He was an L1 speaker of Mandan and his father was Bear-on-the-Flat, who was a principal consultant of Densmore, Bowers, and Kennard and whose Mandan name was

1.1 Background on the Mandan people

mouth of the Mississippi River, climbing upwards on a grape vine until that vine broke, leaving a portion of humanity below the ground and those on the surface departed from the crack in the earth. Those people migrated north towards the Heart River and then camped at Devil's Lake in North Dakota.

While this book focuses linguistic attention on one of the two varieties of Mandan to make it into the twentieth century, [Bowers \(1950: 24\)](#) cites Crows Heart³ (1856-1951) and Scattercorn⁴ (1858-1940), who say that there were at one time five bands⁵ of Mandan: the Nuitadi,⁶ the Nuptadi,⁷ the Istope, the Mananare,⁸ and the Awikaxa.⁹ [Bowers](#) also states that not all his consultants agreed that the Mananare were a band unto themselves, and this was in actuality just the term used to describe any group who left a village due to some disagreement. [Bowers](#)' consultants state that there were three dialectal differences among the Mandan: Nuitadi, Nuptadi, and Awikaxa. After the first smallpox epidemic in 1782, the Awikaxa were absorbed by the Nuitari, leaving only two varieties to survive the next smallpox outbreak a half-century later in 1857.

One complication in describing the Mandan is that the Mandan traditionally have had no autonym for their people as a whole. When Prince [Maximilian \(1839\)](#)

Ópshiitaa Mató. Mr. Mato's surname, *mató* 'bear,' appears as Mahto on his death certificate, though his registration from the Carlisle Indian School spells his surname as Mato, as does he in all recorded materials cataloged at the Carlisle Indian School Digital Resource Center: <http://carlisleindian.dickinson.edu/people/mato-mark>.

³A more accurate translation of his name is 'Raven Heart,' or *Kéekanatka*. He is always referred to by the English translation of his Mandan name, though his death certificate lists him as Paul Crows Heart.

⁴Her name in Mandan is *Wóopite*, literally 'something that has been scattered all over the place.' Her death certificate identifies her simply as Mrs. Holding Eagle, without any first name.

⁵The use of the term 'band' here refers to a subdivision of the Mandan people that is based on linguistic and/or political differences between other Mandan groups. This distinction differs from that of a clan, which centers around the biological or social kinship one has, apart from the polity with which one associates. For example, it is possible for members of the same clan to come from different bands and members of the same band may have different clan affiliations. Additional information on Mandan social organization appears in [Bowers \(1950\)](#).

⁶Also called Nueta, which is *Núu'etaa* or *Núu'etaare* in the orthography used within this book. Their name means 'our people.'

⁷Also called Rupta or Nupta, which is *Rúpta* or *Rúptaare* in the present orthography. Though [Bowers \(1950: 25\)](#) gives no definition for this band's name, consultants tell me it means either 'two voices,' or 'ones who came second,' because they formerly lived apart from the *Núu'etaa* until an attack from the Lakota drove them away from their village in 1792 ([Bowers 1950: 116](#)).

⁸Their name means 'those who quarrel,' and is written *Máananaare* in the orthography used here.

⁹This group's name is also spelled Awigaxa. [Bowers \(1950: 25\)](#) gives no definition for this name, but it does resemble *Áqwe kaxé*, a name that one of my consultants gives for all Mandan, which he says means 'something everyone has.'

1 Introduction

lived among the Mandan, he wrote that they called themselves *Númangkake*,¹⁰ meaning ‘people.’ When the artist and adventurer George Catlin lived among the Mandan between 1834 and 1835, just before the looming smallpox outbreak, Catlin (1844: 260) states that the Mandan called themselves *See-pohs-ka-nu-mah-ka-kee* ‘the people of the pheasants.’ However, this is not an accurate translation, as *sípyushka numá’kaaki* means ‘prairie chicken people.’ Prairie Chicken is one of the original thirteen clans of the Mandan, though only four survived into the twentieth century (Bowers 1950: 30).¹¹ It is very likely that Catlin’s consultant(s) proffered their clan affiliation rather than their ethnicity.

Due to their location within the North American continent, the Mandan did not directly interact with European settlers until possibly the eighteenth century. Pierre Gaultier de Varennes, sieur de la Vérendrye, is considered to be the first European to make contact with the Mandan in 1738 with the help of his Assiniboine guides. He recorded that the Assiniboine refer to the Mandan as *Mantannes*,¹² though his Cree guides had earlier referred to them as *Ouachipouennes* ‘Sioux who go underground’ or by the French term *caserniers* ‘quartermasters’ (Mapp 2013: 213).¹³

It is possible that the Mandan people made contact with Europeans as early as 1689, when the French aristocrat-adventurer Louis Armand de Lom d’Arce

¹⁰In the modern Mandan orthography, this word would be *numá’kaaki*.

¹¹The remaining Mandan clans are the *Waxihkina* ‘Tells Bad Stories’ or ‘Bad News,’ the *Tamísik*, whose clan name is never given a translation, and the *Ípyuxka numá’kaaki* ‘Speckled Eagle People,’ who were later absorbed by the Prairie Chicken clan.

¹²The etymology of this term is not clear, though it is worth noting that a cognate for the Mandan is found in all other Dakotan languages, with Lakota and Dakota varying between *miwátani* or *mawátani*, and *mayádqna* in modern Assiniboine (Parks & Demallie 2002). If these words have some literal meaning (as most Siouan words are wont to), then one possible meaning might be gleaned from the Assiniboine form. The word *mayá* ‘river bank’ is shared between Lakota, Dakota, and Assiniboine, and the *-da* looks to be a reflex of the Proto-Dakotan locative marker **-ta*, with *-na* being a distal marker. Thus, the meaning of the Assiniboine term would be ‘people who at the river bank over there.’ This interpretation lines up with what the Hidatsa call the Mandan, *Aróxbagua* ‘people at the confluence [of the Heart and Missouri],’ and what the Crow call them, *Assahkashí* ‘people at the river’s edge.’

¹³The term *Ouachipouennes* does not appear to be a Cree term, since the *-pouennes* resembles the Ojibwa *bwaan* ‘Sioux’ more than the Cree *pwâta* ‘Sioux.’ Furthermore, *ouachi-* resembles the Ojibwa *waazhi* ‘cave,’ versus the Cree *wâti* ‘cave,’ making it more likely that de Vérendrye had conflated the Cree and Ojibwa and called them both ‘Cree.’ The modern word for Mandan in Cree is *kâ-otáskiwíkamikowak* ‘those who have earth (clay) lodges’ (Arok Wolvengrey p.c., Kees van Kolmeschate p.c.). The term ‘cave Sioux’ does not appear in either modern Cree or Ojibwa, though it is possible that it is an epithet used in the past, owing to the fact that the Mandan differed from the neighboring Algonquian and Dakotan peoples by living in earth lodges rather than tipis or other dwellings.

1.1 Background on the Mandan people

Lahontan, Baron de Lahontan, met a people he called the *Essanape*, who were the enemies of the *Eokoros* he had met some sixty leagues south. The *Eokoros* are likely the Arikara, which would make the *Essanape* likely contenders for being the Mandan (Fenn 2015: 28). In particular, it is possible that *Essanape* is not the name of whole body of Mandan, but the Istopa¹⁴ band of the Mandan.

The Mandan themselves have competing accounts of how they first encountered Europeans. One elder told me that the Mandan word *mashí* ‘white person’ came from the word *shí* ‘good,’ since the first European-Americans they saw were members of the military, whose uniforms were very impressive so the Mandan said that they “looked good,” which then became lexicalized to *mashí*. Another elder informed me that *mashí* is short for *mashí’na* ‘generous,’ since early traders made a habit of bringing gifts when entering villages. This etymology seemingly conflicts with a similar word for whites in Lakota, *wašiču*, whose folk etymology holds that it means ‘one who takes the best part [of the meat]’ after the story of the first time the Lakota encountered a white person, who being brought back to their village and given food, grabbed the best part of the meat and ran away.¹⁵

In more recent times, *Núeta* or *Nu’eta* has generally been the term used to describe all Mandan, regardless of which band one belongs to, though some individuals resist this and prefer to identify by their own band.¹⁶ Throughout this book, I will simply use the exonymic term ‘Mandan’ instead of attempting to use an autonym, given the lack of consensus over what members of this ethnic and linguistic community wish to call themselves.

Today there are no L1 speakers of Mandan, given the fact that the last L1 speaker of the *Núu’etaa* variety of Mandan passed away on December 9, 2016 at his residence in Twin Buttes, ND. There are several heritage speakers between Twin Buttes, Mandaree, and New Town, and one of these heritage speakers grew up with the *Rúptaa* variety of Mandan. Much of the old dialectal differences have been leveled due to the population loss that occurred after the Smallpox Epidemic

¹⁴The name literally means ‘tattoo’ in Mandan, and is spelled *Istópe* in this orthography.

¹⁵Older Mandan sources state that the word for ‘white person’ is actually *washí* (Kipp 1852). Sentence-initially, /w/ is often pronounced as [m] in Mandan, and the older term *washí* may have eventually been reanalyzed as *mashí*. The term *washí* furthermore suggests that this word may be a borrowing from Lakota. Mandan certainly could have clipped the final syllable of *wašiču* to get *washí*, which eventually became *mashí*. This hypothesis is complicated by the cognate in Hidatsa *mashíi*~*washíi* ‘white person,’ which features a long vowel of unclear origin. Hidatsa could have innovated this length to avoid confusion with *mashí*~*washí* ‘blanket,’ which ends in a short vowel.

¹⁶The Hidatsa similarly are named for their largest band, the *Hiráaca*, though there is currently no contention over using this as a cover term for that group in English or Hidatsa.

1 Introduction

in 1837. [Carter \(1991a\)](#) examines the only published source of grammatical and lexical differences between Mandan dialects: the [Maximilian \(1839\)](#) wordlist. These grammatical differences will be further discussed at a later point in this book, but some lexical differences remain even into the present. The *Núu’etaa* variety is the prevalent one found in previous literature and represents the vast majority of the data presented herein. I note any non-*Núu’etaa* forms within the present work, but *Núu’etaa* remains the de facto standard speech variety.

There is an urgent need for documentation and sharing of linguistic materials kept around Fort Berthold and at other locations off the reservation. There is currently a coordinated reservation-wide push for revitalization under the auspices of the MHA Nation itself. From 2013 until 2017, the Tribal Council had been awarding the Language Conservancy a contract to produce pedagogical materials for all three languages on the reservation and put on a two-week long summer institute. I was affiliated with the Language Conservancy and taught at the inaugural summer institute and each subsequent one until the summer of 2016. In Twin Buttes, the Nueta Language Initiative works with residents and local elementary school children to produce materials and lessons to pass on the language. With the last L1 speaker having passed away, the Mandan language is in a precarious situation and is desperately in need of additional study, not just for the purposes of examining the several typologically rare features it has, but also for the sake of current and future Mandan people who may wish to experience this aspect of their cultural heritage.

1.1.2 900 CE to 1851 CE

The Mandan and their ancestors have lived near the Middle Missouri River since at least 900-1000 CE. [Lehmer \(1971: 203\)](#) notes that historic Mandan material culture represents a direct continuation of the older Middle Missouri Tradition. The Middle Missouri Tradition is the cultural complex found within the Missouri River Valley and the adjacent prairie and plains from the confluence of the Missouri and Cheyenne Rivers in central South Dakota to the confluence of the Knife and Missouri Rivers in western North Dakota ([Will & Spinden 1906: 84](#)). The Middle Missouri Tradition is distinct from that of neighboring Central Plains traditions in its style of pottery, design of domiciles, composition of fortifications, and manner of burials ([Lehmer 1971: 202](#); [Johnson 2007: 10](#)). Further archaeological evidence supports the notion of uninterrupted habitation of the region of the Middle Missouri River, with distinct archaeological evidence directly attributed to the Mandan ([Lehmer 1971: 97](#); [Johnson 2007: 109](#)). The map in Figure 1.1 highlights the major movements of the bulk of ancestral Mandan people(s) since the

1.1 *Background on the Mandan people*

end of the Woodlands period until the era during which they made contact with Europeans.¹⁷



Figure 1.1: Mandan migrations

The confluence of the Heart and Missouri Rivers in North Dakota is often considered to be the homeland of the Mandan, though they had occupied lands far-

¹⁷This map is adapted from one in Fenn (2015: 5), using the Wikimedia Commons File:Mississipiriver-new-01.png by user Shannon1 as a base.

1 *Introduction*

ther down the Missouri River in the past. This area is highlighted on the map in Figure 1.1. [Lehmer \(1971: 26\)](#) states that sites in southern Minnesota and northern Iowa form a cultural continuum with sites in central South Dakota that archeologists attribute to the Mandan and their ancestors. The migration of the Caddoan-speaking Arikara from the central Plains onto the Missouri River during the thirteenth century resulted in the Mandan gradually moving farther upstream.¹⁸ This re-settlement up the Missouri brought the Mandan to the Heart River in North Dakota and into close contact with the Hidatsa, with whom they developed close relations—with occasional disputes—that have lasted into the present day.

It is not clear whether this relocation upstream was voluntary on the part of the Mandan, or if the movement of additional peoples onto the upper Missouri triggered the northern migration of the Mandan.¹⁹ The infamous Crow Creek site contains the aftermath of a brutal massacre that took place around 1350 CE that could have been spurred on by the drive to take the arable land upon which that settlement sat. The identity of the villagers is thought to be that of a group related to or ancestral to the Arikara. The belligerents were almost certainly groups ancestral to the Mandan, given that these two groups were relatively alone in the area until the arrival of newer groups from the upper Midwest (e.g., the Cheyenne and the Lakota) almost three centuries later ([Zimmerman & Whitten 1980](#), [Fenn 2015](#)).

Within the Heart River area, the Mandan did not necessarily inhabit a single site continuously throughout the time frame between 1350 and the era before relocation to the Fort Berthold Indian Reservation in 1870. There is evidence from both archeology and first-hand accounts of the Mandan migrating short distances to be closer to supplies of lumber or moving to avoid a hostile group, such as the Assiniboine or the Lakota. [Allen \(1814: 104\)](#) cites a November 21, 1804 journal entry by Meriwether Lewis on this subject, with additional points of clarification in presented in footnotes:

¹⁸The confluence of the Heart River and the Missouri is approximately at the center of the region highlighted as the Ancestral Mandan settlement area in the map above.

¹⁹[Fenn's \(2015\)](#) map in Figure 1.1 does not reflect the migration of various groups of Lakota, Dakota, and Nakota who moved out of the Great Lakes region in the 16th century due to pressure from the Ojibwa and Cree, who had moved to the region from the east and had procured guns through the French via the fur trade ([Riggs 1893: 170](#)). The Cheyenne likewise had to abandon their lands in the Great Lakes due to conflict with neighboring peoples and pass through the Missouri Valley, coming into contact with the Mandan ([Moore 1999: 18](#)). The coming of these peoples into the region could also been a factor in the gradual progression northward of the Mandan people.

1.1 Background on the Mandan people

The villages near which we [the Corps of Discovery] are established are five in number, and are the residence of three distinct nations: the Mandans, the Ahnahaways,²⁰ and the Minnetarees.²¹ This history of the Mandans, as we received it from our interpreters and from the chiefs themselves, and as it is attested by existing monuments, illustrates more than that of any other nation the unsteady movements and the tottering fortunes of the American nations. Within the recollection of living witnesses, the Mandan were settled forty years ago in nine villages, the ruins of which we passed about eighty miles below, and situated seven on the west and two on the east side of the Missouri. The two finding themselves wasting away before the small-pox and the Sioux,²² united into one village, and moved up the river opposite the Ricara.²³ These same causes reduced the remaining seven to five villages, till at length they emigrated in a body to the Ricara nation, where they formed themselves into two villages, and joined those of their countrymen who had gone before them. In their new residence they were still insecure, and at length the three villages ascended the Missouri to their present position.

The Mandan split their time between summer villages and winter villages. The winter village would serve as their home for a quarter of the year; they would move into the lowlands near their summer villages. Such areas would have forestation or topography that would serve to block the cold winter winds of the Plains. Their summer villages, however, were more permanent and were chosen for their defensibility and the fecundity of the land for agriculture. A summer village depended on a reliable source of lumber for the construction of new earth lodges and to fuel the hearth fires at the center of each lodge. Once the supply of lumber had been exhausted, the village would have to move elsewhere. A village could normally last one or two generations before the local supply of wood had been depleted. However, On-a-Slant Village, located a few minutes south of modern Bismarck, ND at the confluence of the Heart and Missouri Rivers, had been occupied since the last half of the sixteenth century and was only abandoned

²⁰i.e., the Awaxaawi band of Hidatsa, whose name means something similar to ‘branching land.’

²¹i.e., the Awadixaa band of Hidatsa (whose name means ‘short village’) and the Hidatsa proper (whose meaning is opaque, but folk etymology states that it is derived from a variety of willow) are collectively called *Minitaari* ‘water crossers’ by the Mandan, due to the story of the Mandan and Hidatsa’s first meeting, where the Hidatsa had crossed the Missouri River in bullboats to greet the Mandan.

²²i.e., the Lakota (also known as Tetons or *Thítȟuŋwaŋ* [tʰi.tx̄u.wā] ‘prairie dwellers,’ and Yankton Dakota or *Iháŋkthúŋwaŋ* [i.hā.kt̄x̄u.wā] ‘those dwelling at the end’).

²³i.e., the Arikara (also known as Ree or *Sáhniš* [sah.niʃ] ‘people’).

1 Introduction

near the beginning of the eighteenth century due to population collapse caused by European diseases (Fenn 2015: 118).

The catastrophic effect that illnesses like smallpox and the measles had upon the Mandan cannot be overstated. The village chief of Mitutanka²⁴ was known as Shehek Shote,²⁵ who related to Meriwether Lewis that he was born in On-a-Slant Village, which was the smallest of the nine Mandan villages at the time, having a mere eighty-six earth lodges and approximately one thousand inhabitants. Shehek Shote's description of On-a-Slant before the 1781 smallpox outbreak suggests that the total pre-pandemic population of the Mandan was between ten and fifteen thousand. One generation later, Meriwether Lewis estimates that the two Mandan villages near Fort Lincoln could raise a total of seven hundred warriors, suggesting a population of at least two thousand people, with similar numbers estimated for the Hidatsa two miles upriver Allen (1814: 131).

Three decades after Lewis and Clark had visited the Mandan, smallpox returned to the Middle Missouri. The outbreak of 1837 nearly caused the extinction of the Mandan people. The fur trader Francis Chardon wrote that "the small-pox had never been known in the civilized world, as it had been among the poor Mandans and other Indians." (Stearn & Stearn 1945: 20). The smallpox first took hold among the Mandan in June of 1837, and by the end of August, Chardon wrote that "the Mandan are all cut off except twenty-three young and old men" (Calloway 2008: 297). The fact that Chardon focused on the number of men makes it difficult to give a precise number for the Mandan who survived the devastation of the 1837. Fenn (2015: 223) cites various sources that give conflicting accounts of how many Mandan survived the smallpox outbreak, but the number was certainly no more than three hundred and possibly as low as near thirty.

This population crisis severely affected the economic and political position of the Mandan on the Middle Missouri. By 1851, the two Mandan villages visted by Lewis and Clark, Mittutaka and Ruptare²⁶ were still severely depopulated, with Mittutaka having between eight and twenty-one lodges occupied, depending on the source, while a fur trade said that Ruptare was occupied by just "fourteen huts, most of them empty" (Kurz 1937: 72).

²⁴This name is also spelled Mih-Tutta-Hang-Kush by Maximilian (1839), which is *Mi'tüyütaahqkas /wi'>#ti#üyütaahq=ka=s/* 'the East Village' in the new orthography.

²⁵His name is also spelled Shekehe Shote or Shahaka, which is *Shehékshot* 'White Coyote' in the orthography used here.

²⁶The name of this village is synonymous with the band of Mandan that occupied it: *Rúptaare*, called the 'two voices' or 'the ones who came second' by other Mandan. In the *Nú'etaare* variety, they may call this dialect *Núptaare*. It is varyingly referred to in the literature as Rupta, Nupta, Ruptadi, or Nuptadi.

1.1 *Background on the Mandan people*

The Mandan of Mittutaka moved upriver in the summer of 1845 to join with the Hidatsa, who had suffered severely from the smallpox as well. Together, these two people settled Like-a-Fishhook Village, named so for the shape of the land jutting into the Missouri River upon which they built their new homes. This was the beginning of the cohabitation between the Mandan and Hidatsa, which continues to this day. The residents of Ruptare followed the rest of the Mandan to Like-a-Fishhook 1857 following yet another smallpox outbreak, and in 1862, the Arikara joined them. These three tribes have lived with each other ever since, and are classified as a single tribe by the federal government under the name the Three Affiliated Tribes (TAT) or the Mandan, Hidatsa, Arikara (MHA) Nation.

1.1.3 1851 CE to present day

The government included the Three Affiliated Tribes in with a group of other nations in the 1851 Treaty of Fort Laramie. The signatories included the Arapaho, Arikara, Assinboine, Cheyenne, Crow, Hidatsa, Lakota and Dakota, and Mandan. The Mandan, Hidatsa, and Arikara nations were grouped together under this treaty, wherein they were allotted 12.5 million acres that encompassed portions of what is now North and South Dakota, Montana, and Wyoming. Not long after agreeing to this treaty, hostilities resumed on the northern plains as non-Native settlers began to forcibly settle upon these lands and scarcity of bison and game caused friction between Native peoples of the region. The Arikara were forced to the opposite bank of the Missouri River after incursions from the Lakota, and the United States government did little to protect the land rights or otherwise protect the Three Affiliated Tribes, including the Mandan.

Through a series of executive orders during the eighteenth century, the land was whittled down to just over 643 thousand acres by 1891, as shown in Figure 1.2.²⁷ The Mandan and other treaty signatories were promised an annuity of fifty thousand dollars for fifty years, which Congress later amended to just ten years. Settlers were permitted to pass through Mandan lands, but in the rush for gold on the West Coast, some prospectors decided to stay. The United States did not uphold its end of the treaty in preventing Americans and Europeans from homesteading on sovereign lands. Like-a-Fishhook, near Old Fort Berthold, was gradually abandoned due to high volume of white settlers and attacks by hostile bands of Dakota and Lakota (Meyer 1977: 119). By 1887, The U.S. government encouraged residents to move upriver to settle on allotments in and around Elbowoods, which would remain a major population center for the Mandan people and the

²⁷This map was created for the North Dakota Studies website, and is available at <https://www.ndstudies.gov/threeaffiliated-tribal-overview>

1 Introduction

other members of the Three Affiliated Tribes for next seven decades (Densmore 1923: 1).²⁸

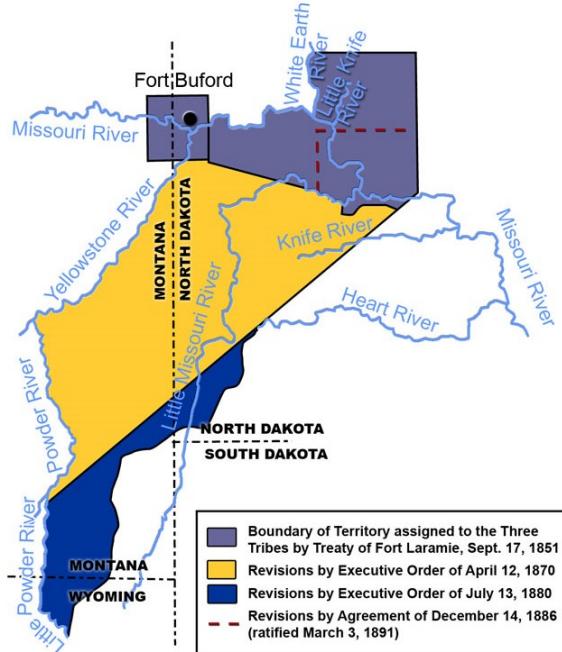


Figure 1.2: Land under the Treaty of Fort Laramie and subsequent cessions

This problem of European-American encroachment upon lands that were supposed to be legally closed to settlement continued even into the twentieth century, where in 1910, the tribe was forced to allow homesteaders in the northeastern quadrant of the reservation under the Act of June 1, 1910 (36 Stat. 455). The act of opening up this land to white settlers alienated another 60 thousand acres from the Three Affiliated Tribes. A map of the Fort Berthold Indian Reservation and the major population centers appears below in Figure 1.3.²⁹

²⁸This map was created by the [program \(n.d.\)](#), adapted from the one in Meyer (1977: 112).

²⁹This map was created by the [program \(n.d.\)](#), adapted from the one in Meyer (1977: 193).

1.1 Background on the Mandan people

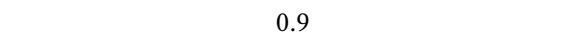
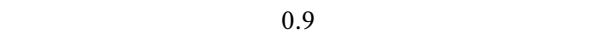


Figure 1.3: Fort Berthold Indian Reservation pre-1953

The seasonal flooding of the Missouri River created excellent farmland in the river valley as nutrients were added to the lowlands every year. The Army Corps of Engineers, however, decided that the seasonal flooding of the Missouri was too problematic for farmers and boat traffic farther downriver, so a series of dams were constructed to prevent such floods. The result of these dams, and the Garrison Dam in particular had a strongly negative impact upon the Mandan, who had often continued to support themselves through farming throughout the reservation period. The construction of the Garrison Dam resulted in the creation of an artificial lake where the Missouri would rise up and overflow its banks. The Three Affiliated Tribes were given compensation from the Department of the Interior for the loss of 146 thousand acres, over a fifth of their total territory, but the money would not ameliorate the situation that the creation of what is now Lake Sakakawea caused: the majority of the remaining land was dry and rocky,

1 *Introduction*

ill-suited for farming. Furthermore, nearly every settlement on the reservation was on the Missouri River, so thousands had to move from their home in the face of the rising waters of the Missouri (Harper 1948). A map of the current-day Fort Berthold Indian Reservation appears in Figure 1.4.³⁰



0.9

Figure 1.4: Fort Berthold Indian Reservation post-1953

Most of the Mandan people lived in Elbowoods, Charging Eagle, or Red Butte before the Dam, and despite the presence of the Missouri River, it was relatively simple for families and friends to cross the river to visit. After the Dam, Lake Sakakawea was too wide and too deep for easy crossing (Benson p.c.). The Mandan spread out across the reservation, concentrating in the Southern Segment in

³⁰This map was created by the [program \(n.d.\)](#), adapted from the one in Meyer (1977: 193)

1.2 Genetic relationships

what is now Twin Buttes, but also being present in Mandaree³¹ in the Western Segment or New Town in the Northern Segment. Where the Mandan-speaking community had been relatively concentrated in a single area beforehand, it was now mixed in with Arikara- and especially Hidatsa-speakers.

Already a linguistic minority on the reservation around the turn of the 20th century (Kennard 1936: 2), many Mandan speakers intermarried with Hidatsa-speakers, resulting in language attrition as the default indigenous language on the reservation shifted gradually to Hidatsa. This shift can be attributed to the fact that at the beginning of the twentieth century, there were several larger families of mixed heritage that employed Hidatsa in the home due to Hidatsa being the language with which both parents were most comfortable (Bird Bear p.c.). Numerous Hidatsa-speaking elders on Fort Berthold are actually ethnically Mandan due to this interruption in language transmission, hastening the decline in L1 Mandan speakers in the middle part of the twentieth century. One possible reason for shifting so readily to Hidatsa from Mandan during the twentieth century might lie in the similarities between the two languages, facilitating the acquisition of Hidatsa by ethnic Mandan who were married or related to ethnic Hidatsa during the first half-century after the reservation period. Benson (p.c.) has stated that both languages are quite different from each other, but have many grammatical constructions in common. This commonality might be due to the centuries of close interaction between the two peoples, but it also might be due to common genetic similarities in the languages themselves.

1.2 Genetic relationships

The position of Mandan within the Siouan language family has long been a point of contention. Grimm (2012: 16) summarizes previous analyses of the relationship of Mandan to other languages as “somewhat arbitrary.” These past attempts to explain the relationship between Mandan and other Siouan languages have relied on limited comparisons of vocabulary, not paying much attention to grammar or phonology that is either shared with or innovated from Proto-Siouan. This section makes the case that Mandan is most closely related to Hidatsa and Crow, and that this relationship is supported by original computational phylogenetic work done by the author.

³¹Mandaree was originally intended to be a home for all three peoples on Fort Berthold, with its name being a blend of *Mandan*, *Hidatsa*, and *Ree*. The latter, Ree, is a term often used for the Arikara.

1 Introduction

The most current consensus tree appears in Figure 1.5. Within Siouan, there are three families apart from Mandan: Missouri Valley, consisting of just Crow and Hidatsa; Ohio Valley, consisting of Biloxi, Ofo, and various forms of Virginia Siouan; and Mississippi Valley, consisting of numerous other groups like the Lakota, Omaha, and the Hoocąk.³²

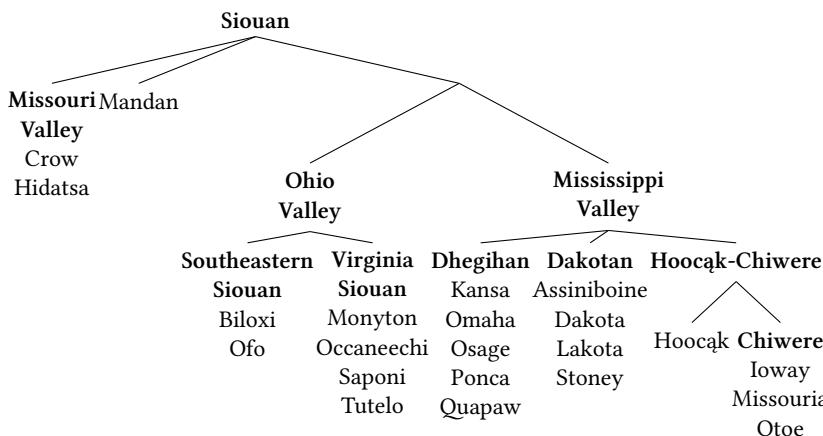


Figure 1.5: Consensus tree for Siouan Proper from [Rankin \(2010\)](#)

Given their proximity and cultural ties with the Hidatsa and Crow, Mandan has often been grouped with them as part of the Missouri Valley family. Early researchers on the Plains, such as [Will & Spinden \(1906: 97\)](#), divide the Siouan languages of the Plains into four groups based on archeological and first-hand accounts of their migrations. The Mandan, Hidatsa, and Crow were the first to move onto the Plains, followed by Hoocąk and Chiwere-speaking groups, then Dhegihan speakers, then Dakotan speakers in the seventeenth century.

Will & Spinden's (1906) proposal for the subdivisions within Siouan language family did not take the Ohio Valley languages into account, nor any other relationships between their proposed four-way distinction. [Voegelin \(1941: 249\)](#) groups Mandan with Hoocąk based on a single phenomenon they have in common: i.e., Dorsey's Law, where a copy vowel is inserted to break up clusters involving a sonorant ([Dorsey 1885: 923](#)).³³

³²The Hoocąk are also known as the Ho-Chunk or Winnebago. This work opts to use their autonym, as Winnebago is an exonym from an Algonquian language (cf. Potawatomi from [Neely 2019](#)): *winbyégo* 'Hoocąk' < *win-* 'dirty' + *byék* 'waters'), meaning something to the effect of 'dirty water people,' due either to their presence by Green Bay on Lake Michigan, which often experiences strong algal blooms or to their proximity to the muddy Fox River.

³³I argue in §3.2.3 that these Dorsey's Law vowels are not phonologically generated, but are

1.2 Genetic relationships

(1) Dorsey's Law

$/CRV_1/ \rightarrow [CV_1RV_1]$

Insert a copy of the following vowel between a consonant-sonorant cluster.

Grouping Mandan with Chiwere and Hoocak on the basis of a single shared phonetic characteristic is problematic, as [Voegelin \(1941: 246\)](#) himself notes that the intrusive copy vowel found in Mandan and Hoocak is also found in Dakota and in various Dhegihan varieties (i.e., most of the language family). After conducting a brief survey of lexical and phonological characteristics of Siouan languages, [Wolff \(1950a,b,c, 1951\)](#) likewise remarks that grouping languages by a single shared phonological feature is not especially convincing, and instead proposes a different grouping, stating that Siouan had seven divisions: 1) Crow and Hidatsa, 2) Mandan, 3) Dakota,³⁴ 4) Chiwere and Hoocak, 5) Dhegiha,³⁵ 6) Ohio Valley Siouan, and 7) Catawba.

[Headly \(1971: 54\)](#) argues that Mandan forms a clade with Missouri Valley due to the degree of lexical similarity between those two groups. [Rood \(1979: 255\)](#) opts to place Mandan within its own branch of Siouan, while [Koontz \(1985\)](#) argues that Mandan forms a basal clade within the Mississippi Valley family. Ultimately, [Rankin \(2010\)](#) argues that the place of Mandan within Siouan is too difficult to discern due to the large amount of morphology it shares with other Siouan languages and the fact that many of the lexical similarities between it and Crow-Hidatsa could be due to contact.

More recent work in computational phylogenetics points to Mandan truly belonging with Missouri Valley ([Kasak 2015](#)). Making use of a suite of phylogenetic software and a database of cognates derived from [Rankin et al.'s \(2015\) Comparative Siouan Dictionary](#), I created a character set of 446 lexical item coded for cognacy. The data then underwent a Bayesian maximum-likelihood analysis using BEAST ([Drummond & Rambaut 2007](#)), using a stochastic Dollo model, a lognormal relaxed clock, and a UPGMA starting tree. The resulting set of trees were then summarized into a target tree using TreeAnnotator, followed by generating this target tree using FigTree. The results firmly placed Mandan with Hidatsa and Crow, though at a deeper time depth than Hidatsa and Crow from each other. Furthermore, this analysis supports the language isolate Yuchi being

post-phonological (i.e., phonetic) in that they are not treated as syllables for the purpose of stress assignment due to their status as excrecent (or intrusive) vowels rather than epenthetic vowels.

³⁴ [Wolff \(1950a,b,c, 1951\)](#) uses Dakota as a cover term for all Dakotan languages: i.e., Lakota, Yankton Dakota, Assiniboine, Stoney, etc.)

³⁵ The Dhegihan group includes Omaha-Ponca, Kanza-Osage, and Quapaw.

1 Introduction

genetically related to Siouan, a relationship first championed by [Sapir \(1929\)](#) and latter again by [Rankin \(1996, 1998\)](#) and [Kasak \(2016\)](#) since Yuchi clusters within already existing branches of the Siouan family tree.

The newly-proposed Siouan family tree appears in [1.6](#), where Mandan forms a basal clade within Missouri Valley, while Catawba and Yuchi form a clade with Mandan-Missouri Valley. Ohio Valley and Mississippi Valley likewise form a clade, as previously described by [Rankin \(2010\)](#). This study was done just on lexical items, and future work should involve incorporating morphology into the character set. However, what is noteworthy about this work is that it captures the established subgroupings within Siouan, both with respect to the major families (i.e., Mississippi Valley, Ohio Valley, Missouri Valley, and Catawban), but it also captures higher-order groupings that had been discussed openly among Siouanists, such as the fact that Mississippi Valley and Ohio Valley share a large number of lexical innovations not found in Missouri Valley, Mandan, or Catawban.

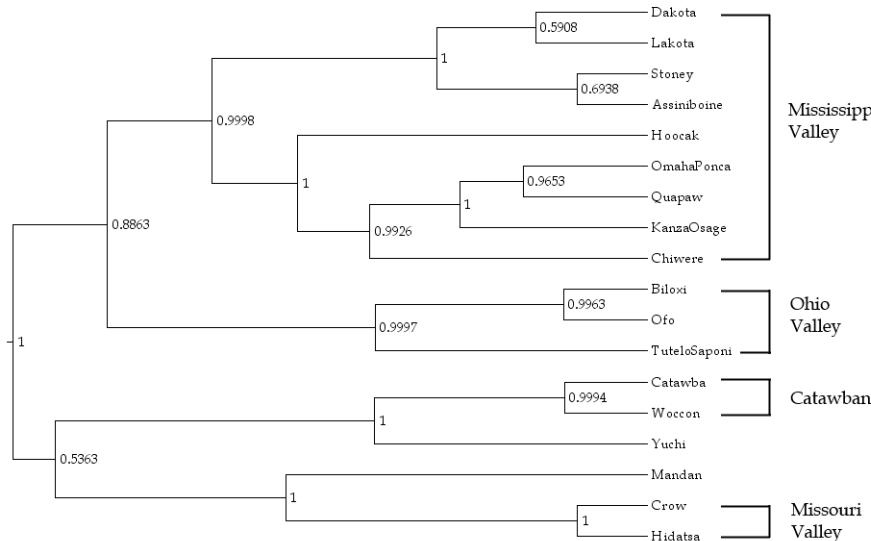


Figure 1.6: Siouan family tree from [Kasak \(2015\)](#)

The tree in Figure [1.6](#) includes the posterior probabilities of each clade given the taxa inputted into the data (i.e., each language with data in the character set). A posterior probability is the statistical probability that proposition is true having taken some evidence into account under a Bayesian analysis. For the established subgroupings (e.g., Dakotan, Southeastern, Dhegihan, etc.), the posterior probabilities were quite high (i.e., $p>0.95$). For other expected groupings, like Lakota

1.2 *Genetic relationships*

and Dakota, which form a dialect continuum, we see a low posterior probability that is due to the Bayesian analysis dealing with very closely-related language varieties by trying different results (i.e., trees) that do not improve the probability for forming a clade. Another confounding factor lies in the composition of the cognate set, since instances where Lakota and Dakota shared a lexical item were rarely recorded, but items that differentiate between them were regularly included. If a newer set of data were coded that includes every cognate between Lakota and Dakota that did not simply assume that Lakota and Dakota share an item unless otherwise stated, we would expect to see an extremely high posterior probability of Lakota and Dakota forming a clade, given their mutual intelligibility.

The low posterior probability for the clade including Yuchi-Catawban and Mandan-Missouri Valley could be caused by the time depth separating them or the high degree of innovation within Yuchi-Catawban. The analysis yields a tree where Catawban and Yuchi form an in-group, rather than an out-group, suggesting further work is needed to understand the correspondences between Proto-Siouan and Catawban-Yuchi. Nonetheless, the biggest takeaway from these findings is that Mandan is not an isolate within the Siouan language family, but has demonstrably closer ties to Missouri Valley languages and shares a stronger lexical affinity with Catawban and Yuchi than with Mississippi and Ohio Valley Siouan.

The purpose of building the case for the place of Mandan within Siouan serves two purposes for this work. Firstly, we can see that Mandan is not alone within the family tree, despite its uniqueness among Siouan languages in sharing so many features and lexical items with other members of the language family across so many branches. Secondly, this work places Mandan within the same subfamily as Hidatsa and Crow, which suggests further comparative grammatical study is needed between these three languages, as well as raising the possibility for investigating what a proto-language would look like between them. The argumentation in this section is relevant to the book in that if the synchronic analysis of Mandan affix ordering within a template holds, then we can use the same analysis of the templates of other Siouan languages to look at the diachronic reordering of affixes (i.e., realization constraints being reordered with respect to one another) across various branches of the language family to examine the ways in which language change can occur at the morphological level in a language family that features such a diverse array of affixes within the templates of its members.

1 Introduction

1.3 Previous research on the Mandan language

This section serves to examine the research on the Mandan language that has taken place up to this point in time. There are no published bibliographies of Mandan language resources of which I am aware, so the following information shall act as a bibliography of Mandan. This documentation is meant to assist in future research on the language by pointing academic and community scholars to resources on the Mandan language and where those resources are held.

The first published account of the Mandan language was by Prince [Maximilian \(1839\)](#), who lived among the Mandan people with the Swiss artist Karl Bodmer in the years before the Smallpox Epidemic of 1837. Together, they introduced the rest of the world not only to the striking visual depiction of life among the Mandan, but also to their language. To this day, Maximilian's vocabulary with its brief grammatical sketch is the only documented source to compare lexical and grammatical differences between the *Núu'etaa* and *Rúptaa* varieties of Mandan.

The American trader James [Kipp's \(1852\)](#) wordlist was published in the [Schoolcraft \(1853: 446\)](#) collection, which aimed to document the numerous indigenous languages of the United States. [Kipp](#) lived with the Mandan for a time, even marrying a Mandan woman. While no linguist, his vocabulary consisted of nearly 350 words, ranging from plants and animals to physical actions and simple verb paradigms. [Schoolcraft's \(1853\)](#) transcription of [Kipp's \(1852\)](#) handwritten vocabulary list is unfortunately riddled with typographic errors, as well as a few instances of confusing Mandan data and non-Mandan data from some other list. As such, any attempts to use these data should refer back to the original handwritten list by [Kipp](#), which is currently stored at the Smithsonian Institution in Washington, DC. When looking at this modest lexicon, there are several words in his vocabulary that are different from the terms used today. One such example of this change appears below in (2), where the word for 'horse' went from being a descriptive compound that approximated the appearance of this animal to the compound being reduced through its frequency of use until the second member of the compound replaced the semantics of the original word *miníse* 'dog'.

(2) Reduced compound in Mandan: 'horse'³⁶

³⁶The pre-contact Mandan word for 'dog' was *miníse*, which is historically derived from the unspecified argument marker *wa-* and the verb *iníš* 'be alive': i.e., 'something that is living' or 'animal.' But upon the introduction of the horse, *miníse* became generalized to any domestic quadruped, and eventually 'dog' became *miníš wéerut* 'horse that eats feces' to distinguish it from what is now the word for horse, *miníse*. Other Plains languages similarly equated horses with dogs: e.g., Lakota *šúŋkawakȟáŋ* 'horse' (lit. 'holy dog'), though *wakȟáŋ* 'holy' may be dropped so that *šúŋka* can be either 'dog' or 'horse' in casual speech.

1.3 Previous research on the Mandan language

- a. Older Mandan: *q̄upa miníse* [lit. ‘elk dog’] (Kipp 1852)
- b. Contemporary Mandan: *miníse* ‘horse’ (Kasak 2014a)

In the twentieth century, there was a renewed interest in the people of the Plains. Musicologist Frances Densmore (1923) recorded over one hundred Mandan and Hidatsa songs, including the lyrics and their translations, though she was more concerned with the music itself rather than the words. Her recordings were done on wax cylinders, and due to the fact she had to power her equipment using the engine of her Model T car, the audio quality is quite poor. However, these represent the first recorded instances of Mandan in an auditory medium. Mr. Ben Benson³⁷ (1867-1939) was the grandfather of the last L1 Mandan speaker and one of Densmore’s principal Mandan consultants, singing 16 of the 82 Mandan songs recorded during Densmore’s fieldwork. The anthropologist Robert Lowie (1913) describes meeting with several Mandan consultants in his description of the societies of the Crow, Hidatsa, and Mandan, and Mr. Ben Benson’s name is never mentioned. However, it is likely that Mr. Benson would have been among those consulted on the histories and functions of various moieties, given his age and social stature at the time of Lowie’s visits to Fort Berthold. Mr. Benson’s participation in this project led to him later working beginning a nearly century-long practice of his family working with outside scholars.³⁸

The anthropologist Edward Kennard visited the Mandan in the summers of 1934 and 1935, working with many of the same consultants who had worked with Densmore almost two decades earlier. While Kennard was mostly concerned with the folklore of the Mandan people, he produced the earliest textual corpus of Mandan in the form of 302 typewritten pages containing 28 narratives in Mandan, along with free translations and some basic interlinear glossing for certain texts (Kennard 1934). His work with the Mandan resulted in the first published

³⁷His name was originally *Weróokpa* ‘Buffalo Bull Head,’ but his legal name was given to him by missionaries.

³⁸It is not clear what has led to the Benson family having such a long history in working with outside scholars, though it could have to do with the fact that members of the Benson family have held at least some of the sacred Turtle Drums, which traditionally have been the holiest artifacts to the Mandan people. Other holders of a Turtle Drum, such as Mr. Leon Little Owl, have likewise assisted in documentation efforts, so it is possible that having such important ceremonial responsibilities has also conveyed either the desire or the responsibility to share their language. Bowers (1950: 105) writes that Mr. Ben Benson possessed two of the three sacred Turtle Drums as of 1931, and that Mrs. Scattercorn held the other. The Mandan believe that a fourth turtle drum left below the waters of the Missouri and may return one day (Benson p.c.). At the time of his passing in 2016, Mr. Edwin Benson, Ben Benson’s grandson, was the keeper of two Turtle Drums.

1 Introduction

grammar of this language (Kennard 1936). Two of Ben Benson's grandchildren later assisted with Mandan documentation efforts: Mrs. Louella Benson Young Bear (1921-2008) and Mr. Edwin Benson (1931-2016), who was the last L1 speaker of the Mandan language. Mr. Edwin Benson formerly worked as the Mandan teacher for Twin Buttes School, following the retirement of his cousin, Mrs. Otter Sage.

Alfred Bowers's (1950) ethnographic work on Mandan ceremony and social practice remains a valuable resource for information on Mandan culture due to Bowers's numerous consultants who had grown up before the forced assimilation imposed on Mandan families during the reservation and boarding school era. Bowers was reputed to be a competent speaker of Mandan, being able to translate Crows Heart's autobiography from spoken Mandan into written English in 1947. He later returned to Twin Buttes, ND to back-translate it into Mandan and Hidatsa with two fluent speakers, collecting nearly 150 hours of recordings. These recordings were done in 1969 and then sent to the American Philosophical Society for archiving (Bowers 1971).

Robert Hollow, one of Wallace Chafe and Terrence Kaufman's students at the University of California, Berkeley, undertook field work in the late 1960s that resulted in the first and only dictionary of the Mandan language (Hollow 1970). Hollow continued to work on Mandan after completing his doctorate, recording and transcribing 24 narratives (Hollow 1973a), and also re-eliciting and re-transcribing Kennard's (1934) narratives. Though no known audio recordings of those sessions exist, (Hollow 1973b) re-elicited and transcribed all but four of Kennard's (1934) 28 narratives. He collaborated in efforts to revitalize the Mandan language through the creation of a textbook (Hollow et al. 1976), and he published translated Mandan narratives in the *Earth Lodge Tales from the Upper Missouri* collection (Parks et al. 1978). Dr. Hollow passed away in Bismarck, ND in 1986 due to complications from cancer at the age of 41.

Mauricio Mixco, a classmate of Parks and Hollow's from Berkeley, thereafter began working on Mandan in the summer of 1993. These efforts produced a grammar sketch (Mixco 1997a) and an overview of Mandan's switch-reference system (Mixco 1997b). His Mandan fieldwork produced no other publications, as Dr. Mixco became increasingly involved with the Shoshoni Language Project at the University of Utah.

Sara Trechter began working on Mandan in 2000 following a suggestion from the late Robert Rankin while she was a doctoral student at the University of Kansas. Dr. Trechter continued to work on Mandan through 2012, producing pedagogical materials alongside local Mandan heritage language learners and Mr. Edwin Benson, the man who was then the last L1 Mandan speaker. These

1.4 Personal fieldwork and sources of data

efforts culminated in two DVDs, *In the Words of Our Ancestors*, which showed video footage of Mr. Benson sitting in an earth lodge in traditional regalia, telling traditional Mandan narratives in Mandan. The DVDs were accompanied by data CDs that included transcriptions and translations of those narratives so listeners can follow along (Trechter 2012a).

The most recent work on Mandan has been by Indrek Park, who has been working with the Nueta Language Initiative in Twin Buttes, ND. As of this writing, he still lives with the community in Twin Buttes and participates with revitalization efforts for both Mandan and Hidatsa.

This summary of existing Mandan research highlights how limited the published linguistic information on the Mandan language is, despite the major role the Mandan people played on the economy of the Upper Missouri for the past half millennium, leading up until the reservation period.

1.4 Personal fieldwork and sources of data

This section serves to explain the conditions under which I conducted my own fieldwork and state the sources of the data used within this book. Given the extremely small number of possible consultants at the beginning of my work on Mandan, I have had to rely mostly on previous fieldwork, though I thankfully have been able to work with the last L1 Mandan speaker, Mr. Edwin Benson, in a limited capacity up until 2016. Below, I describe my fieldwork and list the sources that act as the corpus from which I draw most of the data in the present work.

1.4.1 Personal fieldwork

My own fieldwork with Mandan began in the summer of 2014, when I first traveled to the Fort Berthold Indian Reservation to meet with the lone L1 Mandan speaker and investigate the possibility of finding other speakers. This trip was partially funded by a 2014 grant from Phillips Fund for Native American Research through the American Philosophical Society. I was asked by the Language Conservancy to create pedagogical materials for Mandan, as they had just received a contract from the tribe to do so. That trip resulted in my Mandan textbook (Kasak 2014a), the first introductory Mandan textbook since Hollow et al.’s (1976) nearly four decades earlier.

Through the Language Conservancy, I returned to North Dakota in the winter of 2015 and stayed for almost three months during that same summer. In each of my visits, I found it increasingly difficult to arrange time with the last L1 Mandan

1 Introduction

speaker due to competition for his time. A local organization had begun its own work to document and attempt to revitalize Mandan, and they had already made arrangements to meet with the last speaker regularly. Due to his age and health, he was unable to meet as much as I would have preferred, so I sought out other Mandan speakers on Fort Berthold.

Though the last L1 speaker has passed, Mandan is not totally forgotten. There is a small number of heritage learners who had spoken Mandan with a parent or older relative and still remembered it. More remarkably, one of these individuals grew up speaking Mandan with a father who spoke the Nuptare (i.e., *Rúptaare*) dialect, which [Mixco \(1997a: 3\)](#) cites as having died out well before the beginning of the twentieth century. [Hollow \(1970: 1\)](#) goes so far as to state that there are no data recorded on this variety, though he does give several words that consultants inform him belong to the Ruptare dialect.

Given the scarcity of speakers, the spread-out geography of the reservation, the speakers' busy schedules, and the hyperinflated cost of lodging and travel due to the oil and fracking boom happening in the Bakken region, it has been a challenge to arrange meetings to elicit new data. As such, the bulk of my analysis of Mandan has stemmed from materials collected by previous scholars. Throughout this book, though, I refer to "contemporary speakers" of Mandan. I use this term to include those speakers who were recorded during the 1960s and 70s, along with those recordings made with Mr. Edwin Benson after 2000. This term is intended to reflect that Mandan is not a language that has disappeared, and serves to acknowledge that the speakers who worked with me and with other researchers and how these speakers who passed away are still helping learners with their data today.

1.4.2 Sources of data

The vast majority of extant Mandan materials is derived from the fieldwork of Robert [Hollow \(1973a,b\)](#) during the 1960s and 1970s. There are no known audio recordings from his re-elicitation of [Kennard's \(1936\)](#) narratives, but 20 hours of recordings from his novel elicitation sessions are preserved at the North Dakota State Historical Society. In the summer of 2014, I had these reel-to-reel recordings digitized through the North Dakota State Historical Society. These recordings consist of data from three individuals: Mrs. Mattie Grinnell (1867-1975),³⁹ Mrs.

³⁹ Mrs. Grinnell's Mandan name is *Náakuhys* 'Many Roads.' Mrs. Grinnell is also noteworthy for being the last individual to receive a Civil War widow's pension, which she was granted in 1971, sixty-seven years after the passing of her first husband John Nagel, who served under the Third Regiment of the Missouri Volunteer Cavalry from 1861 to 1864 ([Lovett 1975](#)).

1.4 Personal fieldwork and sources of data

Annie Eagle (1889-1975), and Mrs. Otter Sage (1912-1994). Given that Mrs. Grinnell was born in Like-a-Fishhook Village before the reservation period, her Mandan is especially valuable to examine, due to it being the language of daily life for several decades before settlers started to outnumber the indigenous inhabitants of the area around the Fort Berthold Indian Reservation. She was also described around the reservation as the last full-blooded Mandan at the time.

Mrs. Eagle (née Crows Heart) was a daughter of Crows Heart. She and Mrs. Otter Sage (née Holding Eagle) were also instrumental to helping Bowers translate the materials he archived with the American Philosophical Society. Given the fact that Hollow (1973a,b) transcribed his data, while Bowers (1971) did not, the Hollow materials are much more readily accessible for study. At some point, the Bowers materials will need to be transcribed and published, but that is a task for a later date. The data present in those recordings were not included here, as both consultants produce both Mandan and Hidatsa, and a Hidatsa speaker will be needed in order to interpret side conversations and asides between the two. Both sets of narratives collected by Hollow total 546 pages worth of transcribed and translated Mandan and contain minimal Hidatsa data or code-switching, and as such, these narratives were selected to form the initial corpus of Mandan used within this book.

The other major source of data transcriptions for Mandan is Sara Trechter's (2012a) work with the Circle Eagle Project, yielding 10 hours of Mandan and 273 pages of transcriptions and translations from her work with Mr. Edwin Benson (2000). Trechter distinguishes herself from Hollow in marking vowel length, a major phonemic features that is not present in Hollow's transcriptions.⁴⁰

My own personal fieldwork is also part of the data present here, comprised of two hours of recordings done with Mr. Benson, as well as elicitations done with heritage speakers: Mrs. Delores Sand, Mr. Valerian Three Irons, and Mr. Leon Page Little Owl.⁴¹

Combining all the sources above, this book makes use of 35 hours of Mandan recordings and 819 pages of transcribed Mandan narratives. A dictionary is being compiled that currently had over 500 entries, with the intention of including the lexical and morphological items present in the aforementioned sources of data.⁴²

⁴⁰Hollow (1970, 1973a,b) and Hollow et al. (1976) do mark coda glottals in transcriptions, but this marking of coda glottals is inconsistent.

⁴¹Mr. Little Owl's father, Mr. Ronald Samuel Little Owl (1941-2003), was formerly the Mandan language instructor at the tribal college. Their family speaks the *Rúptaa* variety of Mandan.

⁴²A work-in-progress version of this dictionary was formerly available at the Mandan language website: <http://www.mandanlanguage.org/dictionary/>, though the domain is not active as of this writing due to the Mandan-Hidatsa-Arikara Nation not renewing its contract with the Language Conservancy.

1 *Introduction*

Future work is needed to examine other Mandan recordings that are preserved at the Philosophical Society, as well as those held at Nueta Hidatsa Sahnish College in New Town, ND.

1.5 Organization of this book

The over-arching aim of this book includes one major goal: the description of the phonology, morphology, syntax, and narrative structure of Mandan. In addition to the discussion of the synchronic grammar of Mandan, I make references to reconstructions of Proto-Siouan forms to connect a process in Mandan to Proto-Siouan or to other Siouan languages. Unless otherwise stated, all Proto-Siouan reconstructions come from [Rankin et al. \(2015\)](#).

I begin my description of Mandan with Chapter 2, where I provide a sketch of the language. This chapter provides a grammatical overview of Mandan and aims to reduce the level of complexity a reader may initially encounter when going through this book. Rather than waiting several hundred pages to find out about some major facet of the grammar of Mandan, readers will be able to get a brief overview of salient grammatical features before continuing on to subsequent chapters that explore these grammatical features in much greater detail.

In Chapter 3, I identify the salient sounds present in Mandan with corroborating phonetic evidence from existing recordings. Furthermore, I discuss allophony and phonotactics, as well as word-level phonological processes, such as nasal harmony and different varieties of epenthesis at work in Mandan. Lastly, I give an account of primary stress assignment in Mandan, something that has not been described previously due to the wide variability in stress-marking by previous scholars.

In Chapter 4, I describe the inflectional and derivational morphology that is present on Mandan verbs. In particular, I emphasize how person and number are marked, and also identify morphology for aspect, mood, and evidentiality. The distribution of preverbs in Mandan is an important section within this description of Mandan verbs, as it is with the preverbs that we can most clearly see the separate domains of affixation due to the structure of verbs featuring preverbs. All such verbs are composites. I describe the different ways negation is marked on the verb, as well as in serial verb situations.

Nominal morphology is the subject of Chapter 5. This chapter describes the distribution of inflectional and derivational affixes in Mandan. The overall structure of a noun phrase is detailed in this chapter, along with the kinds of determiners, demonstratives, and deictic markers that can appear within the noun complex.

1.5 Organization of this book

I explain the system whereby all nouns are lexically coded for either alienable or inalienable possession in Mandan. In addition to the description of nominal morphology, this chapter also gives an overview of how noun phrases interact with postpositions and quantifiers.

Chapter 6 goes into detail regarding the basic structure of a Mandan clause. Like all Siouan languages, Mandan has a default SOV clause structure, but it also features a system of canonical switch-reference. This switch-reference system involves different complementizer enclitics to denote that a clause either has the same subject as the following clause or if the subject is different. Mandan is an aggressively pro-drop language, so not only may subjects be omitted in discourse, but direct objects, indirect objects, and oblique objects as well. The entire noun phrase complement of a postpositional phrase may be elided as well, so switch-reference is a frequent component of a clause that involves more than one state or act. Mandan *wh*-words remain *in situ* within the structure and do not move to the left edge of the clause. I describe some complementizer-level enclitics that cannot co-occur with agreement enclitics, suggesting that such constructions are not finite.

The final chapter, Chapter 7, provides an overview of some of the pragmatic items that occur in Mandan speech, such as interjections, filler words, and sentence connectors. The most salient component of this chapter is an interlinear gloss of a narrative by L1 speaker Mrs. Otter Sage, where discourse markers that are omitted by Hollow (1973a) are present to assist learners, linguists, and other interested parties to understand speech patterns of Mandan speakers in greater detail.

2 Grammatical overview

This chapter serves an introductory sketch of the Mandan language and its grammar. The principle goal of this chapter is to provide a succinct highlight of the major aspects of the grammar presented in subsequent chapters without having to consume all the prose therein. One purpose of this book is to be useful to both Mandan community members and to linguists, and it is worthwhile to prime both sets of potential readers to ease their understanding of the data presented throughout. Rather than just provide summaries of the ensuing chapters, this chapter groups major linguistic domains together and provides either the most fundamental information to know about within that domain or the most common grammatical processes that might not be immediately obvious when looking at examples throughout this book.

2.1 Sound inventory

The topic of the phonetics and phonology of Mandan is discussed at length throughout Chapter 3. This section provides an inventory of the salient sounds found in Mandan and their orthographic representation within the present work.

2.1.1 Consonants

Mandan has 10 phonemic consonants. We can see an inventory of these consonants below, represented in IPA and orthographic representations in angled brackets where IPA and orthography differ.

Table 2.1: Consonant inventory

	Bilabial	Alveolar	Post-alveolar	Velar	Glottal
Plosive	p	t		k	?⟨'⟩
Fricative		s	ʃ ⟨sh⟩	x	h
Sonorant	w	r ⟨r⟩			

2 Grammatical overview

The actual number of consonants differs between several scholars, with some arguing for 10, while others analyze Mandan as having as many as 13 (Kennard 1936: 2, Hollow 1970: 14, Mixco 1997a: 6). The work presented in this book assumes a 10-consonant analysis.¹

There are no voiced obstruents in Mandan. Instead, the only voiced consonants are /w/ and /r/. There are other allophonic manifestations of the consonants above in Table 2.1, but sound alternations are discussed in §2.2 below. Mandan lacks the different stop and fricative series found in other Siouan languages: e.g., Osage phonemically distinguishes between plain stops, post-aspirated stops, pre-aspirated stops, glottalized stops, and voiced stops (Quintero 1997: 25).

2.1.2 Vowels

Mandan retains the Proto-Siouan vowel system (Rankin et al. 1998: 367), in that it has five oral vowels of two lengths and three nasal vowels of two lengths. We see an inventory of phonemic vowels in Mandan below, where the vowels are represented in IPA and noting that each vowel below also has a long counterpart.

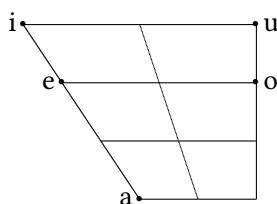


Figure 2.1: Mandan oral vowels

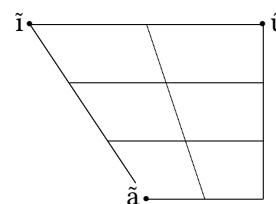


Figure 2.2: Mandan nasal vowels

There are no nasal mid vowels in Mandan, so there is not a perfect symmetry between the oral vowels and the nasal vowels. Mandan is like most other Siouan languages in this respect (Parks & Rankin 2001: 106), though there are languages within the family with fewer phonemic nasal vowels: e.g., Omaha–Ponca has only a front nasal and a non-front nasal vowel of varying realization (Koontz 1984: 12), while Crow and Hidatsa have no nasal vowels whatsoever (Grimm 2012: 19).

Mandan has a single diphthong /au/, though it appears only in one lexical item, *háu* ['hau] 'hello, yes.' This term is likely a loanword, given its prolific use across Indigenous languages of the Great Plains and northern Eastern Woodlands.²

¹See §3.1.1 for a discussion of why other analyses are ruled out.

²See §3.2.2 for additional description of the origin of this diphthong in Mandan and its phonetic characteristics.

2.2 Morphophonology

2.1.3 Orthography

Various orthographies have been used to represent Mandan since Kipp (1852) first wrote down a small Mandan lexicon. The orthography used in this book stems from the one used in Kasak (2019), which itself was based on an earlier version of the conventions used by the Nueta Language Initiative during the winter of 2015.

There is a large overlap between the Americanist Phonetic Alphabet (APA) and the orthography of Mandan. Mandan consonants are generally identical to their corresponding APA symbol: e.g., the voiceless velar fricative [χ] is ⟨x⟩. The voiceless postalveolar fricative [ʃ] is represented by the digraph ⟨sh⟩, given the familiarity most Mandan community members have with English orthographic conventions. The glottal stop is represented by an apostrophe throughout this book.

The orthographic representation of vowels likewise conforms to their APA symbols. Nasality is marked on vowels with an underhook rather than a tilde: e.g., high front unrounded nasal vowel [i] is orthographically ⟨ī⟩. When a nasal vowel is preceded by a [m] or [n], then there is no marking of nasality on the vowel, since such vowels will be inherently nasal. Earlier orthographies such as the one used in Hollow (1973a,b) made all nasal vowels orthographically explicit, but marking nasality on vowels following [m] or [n] is considered redundant. Long vowels are represented as double-vowel digraphs: e.g., long high back rounded oral vowel [u:] is written as ⟨uu⟩. An acute accent indicates a primary stress on a syllable. Where primary stress falls on long vowels, the first vowel in the digraph receives the acute accent: e.g., [ká:re], the negative imperative marker ‘don’t,’ is written as ⟨káare⟩.

A lengthier discussion of the Mandan orthography used throughout this work can be seen in §3.3. It bears mentioning that the use of the present orthography does not imply that other orthographic representations of Mandan are less accurate or somehow not as good as the one used throughout this book. I encourage any Mandan community members who have been using a different orthography to continue to work with the system that they have already developed or have learned.

2.2 Morphophonology

Mandan is an agglutinative language, where numerous formatives can accrete onto a stem. The combination of formative often results in the juxtaposition of phonemes that are disallowed by the phonotactics of the Mandan language.

2 Grammatical overview

2.2.1 Consonantal lenition and syncope

The phonotactic constraints of Mandan prohibit sequences of the same consonant appearing in surface representations. Supralaryngeal stops like /t/ and /k/ become fricatives when followed by an identical segment. This lenition serves to dissimilate pseudogeminate sequences, as we see in (1) and (2) below.³

- (1) Lenition of /t+t/ to [st]
 - a. /ūʔt/ ‘far away’ + /=ta:/ locative enclitic → ['ūʔsta:] ‘long ago, far away’
 - b. /i-ru-hít/ ‘tan hide by hand’ + /=ta/ male imperative → ['iruhísta] ‘soften that hide!’
 - c. /hu:/ ‘come here’ + /=rít=ta/ second person plural plus imperative → ['hu:nísta] ‘come here, you all!’
- (2) Lenition of /k+k/ to [hk]
 - a. /suk/ ‘exit’ + /=ka/ habitual enclitic → ['suhka] ‘to always exit’
 - b. /kok/ ‘pronghorn’ /krE=s/ third person plural plus definite article → ['kohk̥es] ‘the pronghorns’^{4, 5}
 - c. /i-sek/ ‘make, do’ + /=ki/ conditional enclitic → ['isehki] ‘if he did it’

Identical fricative sequences delete one segment to avoid pseudogemination, and the sonorants never occur as codas, so sonorants will never occur in environments that will trigger lenition or syncope. We can see the simplification of these clusters with sequences of identical fricatives in (3) below.⁶

- (3) Syncope of fricative + fricative sequences
 - a. /wr̥ís/ ‘horse’ + /se/ ‘red’ → ['m̥ínise] ‘a red horse’
 - b. /wr̥áʃ/ ‘tobacco’ + /ʃi/ ‘be good’ → ['m̥áñáʃi] ‘good tobacco’

³See §3.5.1 for further discussion on the topic of pseudogemination dissimilation.

⁴The /E/ represents the ablaut vowel in Mandan, which is phonetically realized as either [e] or [a], depending on the surrounding morphology. See §3.5.3 for an explanation of how ablaut is triggered in Mandan.

⁵The superscript vowel here represents an excrecent vowel. See §3.2.3 for more information on excrecent vowels and Dorsey’s Law in Mandan.

⁶See §3.4 for more a more detailed explanation of Mandan phonotactics.

2.2 Morphophonology

- c. /wax/ 'cottonwood' + /xwāh/ 'be small' → ['wax̩māh] 'a small cottonwood'
- d. /kuh/ 'come back here' + /hrE/ causative → ['kuh̩re] 'to make someone come back here'

These two morphophonological strategies for avoiding a violation on the constraint against pseudogeminates are incredibly productive and can be seen in word-building of different types: e.g., affixation, cliticization, compounding, *inter alias*.

2.2.2 Epenthesis and vocalic syncope

Mandan has a single diphthong, seen only in the word *háu* /hau/ 'hello, yes.' In all other contexts, a vowel may never appear adjascent to another within the domain of the same word. In situations where one vowel abuts another, an epenthetic consonant is inserted to avoid a constraint against hiatus.

There are two varieties of epenthesis in Mandan. One variety occurs within the domain of a word: i.e., between affixes and a root or between words that comprise a compound. This first epenthesis inserts a glottal stop [?] between adjoining vowels. The other variety occurs when enclitics are added to the right edge of a stem. This second epenthesis inserts a flap [ɾ] when a long vowel abuts another vowel at an enclitic boundary. We can see examples of these two epentheses in (4) and (5) below.⁷

(4) /?/ epenthesis within a word

- a. /ka-/ 'by force' instrumental + /ux/ 'be broken' → [ka'?ux] 'to smash something apart'
- b. /wa:-/ nominalizer + /iři:/ 'grow' → ['wa:řiňi:] 'a plant, a growing thing'
- c. /i-/ instrumental preverb + /ah/ 'be covered' → ['i?ah] 'skin, shell'

(5) /ɾ/ epenthesis at an enclitic boundary

- a. /hu:/ 'come here' + /=o?ʃ/ male indicative enclitic → ['hu:ro?ʃ] 'he/she came here'
- b. /hř:/ 'drink' + /=o?rã/ female interrogative enclitic → ['hř:ro?nã] 'did he/she drink it?'

⁷See §3.6.1 for more information about these differing epentheses.

2 Grammatical overview

- c. /ha:/ 'cloud, sky' + /=*E*/ stem vowel complementizer → ['ha:re] 'cloud, sky'

A third strategy for resolving hiatus in Mandan involves the syncope of the second vowel in sequences where an enclitic beginning with a short vowel is added to a short vowel-final stem. We can see examples of this strategy for hiatus resolution in (6) below.

(6) Vocalic syncope

- a. /ʃi/ 'be good' + /=*o?*re/ female indicative enclitic → ['ʃi?ʃ] 'it is good'
- b. /hi/ 'arrive there' + /=*ak*/ different-subject switch-reference marker → ['hik] 'he/she arrived and...'
- c. /hū/ 'many' + /=*o?*ʃa/ male interrogative enclitic → ['hū?ʃa] 'is there a lot?'

These three strategies occur frequently, given that the agglutinating nature of Mandan morphology often creates conditions where illicit vowel plus vowel sequences would otherwise appear.

2.2.3 Nasal harmony

Even though the nasal consonants [m] and [n] are very common in Mandan, they only occur due to nasal assimilation of a following nasal vowel. Nasal vowels spread their nasality onto sonorant consonants like /w/ and /r/, turning them into [m] and [n], respectively. The nasality spreads leftward from the vowel onto the sonorant preceding it, illustrated below in (7) by an underline in the nasal vowel in the surface form and the affected sonorant.

(7) Nasal assimilation from vowel to consonant

- a. /rā:ka/ → ['nā:ka] 'be new'
- b. /wī:h/ → ['mī:h] 'woman'
- c. /ro-rī?/ → ['do'nī?] 'to shoot us'
- d. /o-rāp/ → ['onāp] 'to find something'

Nasal assimilation in Mandan is not restricted to the local environment. In the examples in (7) above, nasality spreads leftward from a nasal vowel onto a single segment. However, nasal assimilation can continue to spread leftward as long as there are no blocking mechanisms. Nasality is blocked by obstruents, mid vowels,

2.3 Allomorphy

word boundaries, and preverbs.⁸ Otherwise, nasalization can spread into another syllable, as we see in (8a) and (8b), or even across many syllables to the left edge of the word, as we see in (8c) below.

(8) Long-distance nasal assimilation

- a. [ikām̩iñi] /i-ka-wr̩i/ PV.INS-INS.FRCE-be.twisted
'to twist something up'
- b. [māñā:te?ʃ] /wa-ñā:tE=o?ʃ/ 1A-stand.up=IND.M
'I stood up'
- c. [mā:māñāñū:nix̩ñisto?ʃ] /wa:-wa-ñā-ñū:=ñix=ñit=t=o?ʃ/ NEG-UNSP-2A-steal=NEG=2PL=POT=IND.M
'thou shalt not commit adultery' (lit. 'you should not steal anyone')

Nasality is unable to spread leftward across an enclitic boundary, as an enclitic boundary functions as a word boundary, per Kasak (2019: 269).⁹ Otherwise, nasal harmony is blocked featureally by mid vowels, as we see in (7c), and obstruents, as we see in (8a).

2.3 Allomorphy

In addition to the morphophonological processes described above in §2.2, The grammatical system of Mandan can result in an impressive array of morphological alternations. The syllable shape of a stem can affect which formative is used, including some formatives that have different phonological shapes. The purpose of this section in this chapter is to provide a summary of some of the morphological alternations that are not conditioned by phonotactics, as we have seen in §2.2 above, but are conditioned by the morphology itself. While the morphology here is explained in greater detail throughout Chapter 4 and Chapter 5, this section

⁸See §3.6.3 for a more articulated analysis of nasal harmony in Mandan and why preverbs act as a blocking mechanism for nasal assimilation.

⁹See Kasak (2019) for a theoretical analysis for why word boundaries, preverbs, and enclitics are all blocking mechanisms that arise from the same root cause based in the morphological system of Mandan.

2 Grammatical overview

serves as a preview of the various manifestations of certain common morphology to prime the reader to be able to read the longer glosses that appear throughout this book.

2.3.1 Subject and object prefixes

Person-marking prefixes have the widest variety in terms of phonological shape. We can see that each person marker has several allomorphs, with the singular person markers having the greatest degree of alternate forms. These prefixes are divided into two classes: active and stative. Active prefixes correspond to the subject that is semantically the agent, while stative generally corresponds to any non-agent arguments.¹⁰ The formative that is the default form appears first in all the following examples.

- (9) First person singular active marker
 - a. /wa-/: default
 - b. /we-/: before stems beginning with a sonorant plus /e/ or /e:/
 - c. /wʔ-/: before vowel-initial stems
 - d. /w-/: before a second person marker
- (10) First person singular stative marker
 - a. /wā-/: default
 - b. /wī-/: less common, mostly used before reflexive markers¹¹
 - c. /wʔ̐-/: before vowel-initial stems
 - d. /w-/: before a second person marker
- (11) Second person active marker
 - a. /ra-/: default
 - b. /re-/: before stems beginning with a sonorant plus /e/ or /e:/
 - c. /rʔ-/: before vowel-initial stems
 - d. /rā-/: after a first person singular marker

¹⁰There is a general pattern where the active set of prefixes is used to mark agents and the stative set of prefixes is used to mark non-agents, but there are verbs that select for active marking in their subjects that do not have a semantic agent: e.g., *sīh* ‘be strong’ is an active verb, despite the fact its subject is non-agentive and should therefore be a stative verb like *h̄qska* ‘be tall, long.’ See Chapter 4 for a more elaborate explanation about the active–stative alignment in Mandan.

¹¹See §4.1.2.2.3 for more explanation as to when this allomorph is used in the corpus.

2.3 *Allomorphy*

- (12) Second person stative marker
 - a. /r̩-/: default
 - b. /rʔ̩-/: before a vowel-initial stem
 - c. /rū-/: after a first person plural marker
- (13) First person plural active marker
 - a. /rū-/: default
 - b. /rV-/: before short vowel-initial stems
 - c. /r-/: before long vowel-initial stems
- (14) First person plural stative marker
 - a. /ro-/: default
 - b. /rV-/: before short vowel-initial stems
 - c. /r-/: before long vowel-initial stems
 - d. /rū-/: before reflexive markers

The allomorphs listed above are not derived from synchronous phonological rules. There are diachronic explanations for these alternations, but those explanations are discussed more fully throughout §4.1.2.

2.3.2 Enclitics

Mandan features a rich system of enclitics that carry aspect, mood, number, and other features. In §4.3, I examine each of the enclitics and their usages within the corpus, but the information here highlights the allomorphs whose alternations are not conditioned purely by phonological rules.

- (15) Negative enclitic
 - a. /=r̩ix/: default
 - b. /=xi/: after stems ending in a short vowel
- (16) Potential mood enclitic
 - a. /=kt/: default
 - b. /=t/: after stems that end in consonants other than /?
 - c. /=kte/: before the different-subject switch-reference marker /=ak/
 - d. /=kti/: before the conditional enclitic /=ki/

The enclitics above represent the number of formatives that have alternative realizations based on their phonological or morpho-syntactic contexts. The variation seen in the phonetic shaped of other Mandan enclitics is due to the epenthesis and syncope processes described above in §2.2.2 and in greater detail in §3.6.1.

2 Grammatical overview

2.4 Templetic morphology

One of the hallmarks of the morphological system of Mandan—and of other Siouan languages—is that words are built according to a template. [Manova & Aronoff \(2010: 112\)](#) define templetic morphology as a system whereby affixation occurs in an unmotivated by prescribed manner: i.e., an affix occurs within a specific slot, regardless of any other phonological, syntactic, or semantic motivation.¹² Each affix must appear in a specific order with respect to other affixes. We can see a template for verbs in Mandan below in Table 2.2.

Table 2.2: Verbal prefix field in Mandan

11	10	9	8	7	6	5	4	3	2	1	0
REL	NEG	UNSP	1PL	PV.IRR	PV.LOC	1SG	2SG	SUUS	ITER	INS	STEM
					PV.INS		2PL	MID	INCP		
					PV.TR			RECP			

Under this template, a first person singular argument is marked on a verb before any second person argument. The ordering of these affixes with respect to one another does not depend on any syntactic or semantic relationship these arguments have within the clause; their ordering is the same because that is what the template in Mandan proscribes. We can see the template in action below, where the first person singular prefix in slot 5 precedes the second person prefix in slot 4 despite the fact that there is a difference in the subject versus the direct object.

(17) Example of first person singular before second person affixation

- a. *minihé'sh*
w-rj-hE=o'sh
1A-2s-see=IND.M
'I see you.'
- b. *manahé'sh*
w-rq-hE=o'sh
1s-2A-see=IND.M
'You see me.'

¹²[Kasak \(2019: 339\)](#) argues that templetic morphology does have motivation for the ordering of affixes, only that the motivation comes from the morphology of a language itself. I do not press this point in the present work, as my aim is to provide a descriptive grammar of the Mandan language rather than to use it to back up claims about linguistic theory.

2.5 Phrasal structure

The order of prefixes in (17a) matches the subject–object–verb order of sentences in Mandan, but the order of prefixes in (17b) is reversed: i.e., the marker that encodes who the object is precedes the marker that encodes who the subject is. It is ungrammatical to rearrange the order of prefixes in (17) above, which is true of any other prefix in Mandan. There is no enclitic template, however, as the ordering of enclitics reflects the underlying semantic relationship. The farther away from the base an enclitic is, the wider its scope over the entire proposition.¹³

2.5 Phrasal structure

Like all languages, words in Mandan must appear within the context of a phrase. This section is dedicated to providing an overview of the kinds of phrase structures found in Mandan. The overall structure of phrases in Mandan is relatively unsurprising from a typological point of view in that Mandan shares many structural similarities with other languages with a default subject–object–verb sentence order: e.g., Mandan features postpositions after noun phrases instead of prepositions (Croft 2003: 56).

2.5.1 Noun phrases

The noun invariably appears as the initial element in a noun phrase in Mandan. The noun, as head of the noun phrase, is the most salient element within its domain, and all adjunct material appears after it. Stative verbs used in an adjectival manner will always follow the nouns they describe. Likewise, determiners and the topic marker will be found after any adjunct material. We can see an example of a fully articulated noun phrase, complete with an adjunct stative verb, in the example below.

In (18), we see the noun *minisweerut* ‘dog’ at the leftmost edge of the noun phrase. The adjunct *xi’h* ‘to be old’ follow the noun it modifies. All determiners then encliticize onto the right edge of the rightmost element within the noun phrase, which is the stative verb *xi’h* in this case. The definite article *=s* appears as the determiner closest to the head of the noun phrase. This article encodes for a specific dog in the context of the narrative. This element is followed by the distal demonstrative *=ee*, which specifies the physical proximity of the noun phrase in relation to the present interlocutors. Finally, the topic marker *=na* indicates that the speaker wishes to emphasize the salience of this who noun phrase in the context of the discourse.

¹³See Kasak (2019: 319ff) for more on the theoretical underpinnings of this analysis.

2 Grammatical overview

- (18) Example noun phrase

minísweerut xi'hsseena
 wrjs#wee#rut xi'h=s=ee=rq
 horse#feces#eat be.old=DEF=DEM.DIST=TOP
 'the old dog' (Hollow 1973a: 189)

The one exception to the rule that adjunct materials must follow the head noun of a phrase is in constructions expressing possession. In such instances, the possessor precedes the possessee. In (19) below, we can see that the possessor *Kóoxq'te Míihs* 'Corn Woman' comes before the possessee *tasúkseena* 'her child.'

- (19) Example of a noun phrase with a possessor

Kóoxq'te Míihs tasúkseena
 kooxq'tE wíjh=s ta-suk=s=ee=rq
 corn woman=DEF AL-child=DEF=DEM.DIST=TOP
 'The Corn Woman's child' (Hollow 1973a: 112)

It is ungrammatical to switch the order of the possessor and possessee in Mandan. The ordering between the two noun phrases is the only indicator as to the semantic role one has to the other. Some languages, like English, have multiple constructions to express possessor–possessee relationships: e.g., *the writer's pen* versus *the pen of the writer*. Mandan does not have any such alternative structures; the possessor must precede the possessee. Further discussion of noun phrases can be found in §6.1.1, where other aspects of noun phrases and noun phrase structure are described in greater detail.

2.5.2 Postpositional phrases

Mandan conforms to the typological generalization that languages with a default subject–object–verb sentence structure will have postpositions instead of preposition. Postpositions will always appear immediately after the noun phrase over which they have semantic scope. We can see an example of this word order below in (20), where the postposition *úupa* 'with' follows the noun phrase *Kóoxq'te Míihs* 'Corn Woman.' This position at the rightmost edge of a noun phrase is the only place where a postposition can occur in Mandan.

- (20) Example of a postpositional phrase

Kóoxq'te Míihs úupa
 kooxq'tE wíjh=s úupa
 corn woman=DEF with
 'with Corn Woman' (Hollow 1973a: 112)

2.5 Phrasal structure

Postpositions behave similarly to verbs in that they take person marking when expressing the relationship with a first or second person entity. There are no free pronouns in Mandan, so pronominal marking will appear on the postposition itself. We can see an example of a postposition with person marking in (21) below.

- (21) Example of a postpositional phrase with person marking

nú'pa

r'-q̥upa

2s-with

‘with you’ (Hollow 1973b: 224)

Postpositional phrases are often used as adjuncts within a clause. A more detailed description of postpositional phrases appears in §6.1.4.

2.5.3 Verb phrases

The verb phrase in Mandan is characterized by the verb being in the rightmost position within its domain. Verbs in Mandan are the primary locus of agreement marking, resulting in constructions where the information for a whole sentence might be encoded entirely on the verb alone. We can see this feature of Mandan below, where there are no overt nominal elements present in the sentence, and the verb bears many inflectional formatives that provide enough context so as to express a complete thought.

- (22) Example of a sentence consisting of only a verb

Máamanaunuunixinisto'sh.

waa-wa-ra-rq̥u=rjx=rjt=t=o'sh

NEG-UNSP-2A-abduct=NEG=2PL=POT=IND.M

‘thou shalt not commit adultery (lit. ‘you all should not run off with anyone’) (Hollow 1970: 22)

Auxiliary verbs in Mandan come after the lexical verbs over which they have semantic scope. One common construction that requires an auxiliary verb with the lexical verb is benefactive constructions. The verb *kq'* ‘give’ is used after a lexical verb indicates that the subject is doing something for someone else. We can see an example of a verb phrase containing an auxiliary verb below.

- (23) Example of a verb phrase with an auxiliary verb

2 Grammatical overview

Wahará minikú'kto'sh.
 wa-hrE w-r̩-k̩=kt=o'sh
 1A-CAUS 1A-2s-give=POT=IND.M
 'I will do it for you.' (Hollow 1973a: 138)

Mandan requires that auxiliary verbs and the lexical verbs they modify bear subject marking, as we see above in (23). This behavior contrasts with languages like English, where auxiliary verbs bear all person marking and the lexical verb becomes non-finite: e.g., *he is going home* has person and tense marking only on the auxiliary *is*, while the lexical verb appears with the progressive participle suffix *-ing* and cannot take person or tense marking.

Verbal morphology plays a major role in Mandan grammar. For that reason, an entire chapter of this book is devoted to looking at the morphology of verbs: i.e., Chapter 4. A more elaborate discussion of the structure of verb phrases can be found in §6.2.

2.6 Sentence structure

Mandan employs a default subject–object–verb sentence order. Dryer (2013) finds that a plurality of languages follow this same pattern, so Mandan is typologically unmarked in this respect. We can see an example of a sentence with this SOV word order below. In (24), we see the subject *numá'k* 'man' in the initial position, followed by the direct object *minísq't* 'that horse.' The final element is the verb *waká'ro'sh* 'he possesses it.'

- (24) Example of subject–object–verb word order in Mandan

Numá'k minísq't *waká'ro'sh.*
 ruwá'k wr̩s=q̩t wa-ka'=o'sh
 man horse=DEM.ANAP UNSP-POSSESS=IND.M
 'The man has a horse.' (Hollow et al. 1976: 32)

This sentence order is unchanged when the illocutionary force of a proposition is not indicative. Some languages, such as English, can move the verb to an initial position to indicate that the sentence is interrogative: e.g., *she is tall* versus *is she tall?* Mandan has no such change in word order to indicate any kind of illocutionary information, because illocutionary information is encoded in specific verbal morphology. The information in (24) above appears below, rendered as a question. This subject–object–verb word order remains consistent, as we can see in the example below.

2.6 Sentence structure

(25) SOV word order in questions

<i>Numá'k minísq't</i>	<i>waká'ro'sha?</i>
<i>ruwá'k wr̥s=a'q't</i>	<i>wa-ka'=o'sha</i>
man horse=DEM.ANAP UNSP-possess=INT.M	

'Does the man have a horse?'

Ditransitive constructions, where there are three obligatory arguments, the subject is still sentence-initial. The primary distinction in word order from those seen in transitive or intransitive constructions is that the direct object does not follow the subject; the other argument always precedes the direct object. The direct object, therefore, must appear directly before the verb. We can see an example of a sentence involving a ditransitive verb *ikü'te* 'to throw,' which must naturally take an argument as its subject, but also two additional arguments as the direct object (i.e., that which is thrown) and the destination (i.e., where the direct object is thrown).

In (26) below, the subject, *Kinúma'kshi* 'Royal Chief' is the person who is doing the throwing and therefore is the first element in the sentence. The subject is displayed in small caps. The direct object, *istámi* 'his eyes,' is what Royal Chief is throwing and is therefore the element closest to the verb. This direct object is underlined. The destination, *skiskika kaxtékseet* 'towards the willow bunch,' is where Royal Chief is throwing the eyes to, and this element appears immediately before the direct object. The destination is displayed in bold. The verb continues to appear in its default position word-finally.

(26) Ordering arguments in ditransitive constructions

<i>KINÚMA'KSHI</i>	<i>skiskika kaxtékseet</i>	<i>istámi'</i>
<i>ki-ruwá'k#shi</i>	<i>skiskika</i>	<i>kaxtek=s=ee=t</i>
MID-man#be.good willow bunch=DEF=DEM.DIST=LOC eye		

ikü'teoomako'sh.
i-*kü'tE=oowąk=o'sh*
PV.DIR-throw=NARR=IND.M

'ROYAL CHIEF threw his eyes to the willow bunch.' (Hollow 1973a: 34)

Adjunct material, such as adverbial elements have a more liberal distribution throughout the sentence structure. Given that this chapter aims to provide a basic sketch of Mandan, an explanation on the nuances of where adverbials go in a sentence is outlined elsewhere in this book. Sentence structure for simplex clauses is discussed in greater length in §6.2.2.

2 Grammatical overview

2.7 Topicalization

Mandan adheres to a basic SOV word order for sentences. However, Mandan rigorously flouts this default order in order to place some narrative emphasis on some element that the speaker wishes to highlight for the listener. As such, it is not uncommon for arguments in Mandan to appear outside of the expected SOV word order. In such cases, the change in the default word order is motivated by pragmatic choices on the speaker's part to topicalize a salient element. Typical topicalization in Mandan involves moving some element to the leftmost edge of the sentence.

In (27) below, we see an instance where the indirect object *numá'kaaki* 'people' appears at the leftmost edge of the sentence, despite the fact that its prototypical position within the sentence should be immediately before the direct object *wáa'qqwe* 'everything.' The speaker is highlighting who the addressee is talking to and bringing their attention to the fact that this element is particularly salient.

- (27) Topicalized indirect object

Numá'kaaki tashkák wáa'qqwe rakú' kina'ka'na?
 ruwá'k-aaki tashka=ak waa-qqwe ra-kú' kirá'=ka=o'rá
 person-COLL how=DS NOM-all 2A-give tell=HAB=INT.F
 'To people why do you always tell everything?' (Hollow 1973a: 213)

Another kind of topicalization in Mandan involves postponing an element at the very end of the sentence: i.e., right dislocation. Elements that are right dislocated serve as reminders or clarifying topics to something alluded to already in the discourse. We can see an example of right dislocation below in (28), where the right dislocated element *máa'qk kú'sht ó'harani* 'from underneath the earth,' is the location from where buffalo had emerged. This postpositional phrase serves to clarify or emphasize the postpositional phrase *óó ó'harani* 'from there' that was mentioned earlier in the sentence.

- (28) Example of right dislocation

óó ó'harani *ptíitkushker* *qqwe súhkereroomako'sh*,
 oo o'#hrE=rj ptíitkushker=s qaqwe suhkereroomako'sh
 DEM.MID be#CAUS=ss buffalo#be.true=3PL=DEF all exit=3PL=NARR=IND.M
máa'qk kú'sht ó'harani.
 waa'qk ku'sh=t o'#hrE=rj
 earth inside=LOC be#CAUS=ss
 'All the buffalo came from there, **from underneath the earth**.' (Hollow
 1973b: 114)

2.8 Multiclausal structure

Additional discussion of topicalization and topic marking in Mandan and what elements can be topicalized can be found in §5.7.3.¹⁴

2.8 Multiclausal structure

Like all languages, Mandan has different approaches to expressing relationships between clauses. The corpus contains a preponderance of data that feature sentences with multiple clauses combined to express complex ideas. One noteworthy feature of Mandan grammar is the stark lack of phrasal or clausal coordinators; the most common relationship between clauses is that of adjunction. This section outlines the two most common types of clausal adjuncts that are rooted in a matrix clause. Only matrix clauses can bear illocutionary force and therefore any verb that bears such markers must inherently be the matrix clause. The presence of allocutivity marking is therefore a diagnostic for independent clausehood in Mandan. Allocutive agreement markers are discussed more fully in §4.3.5.1 and §6.2.6.

2.8.1 Switch-reference

Switch-reference is a morpho-syntactic system whereby some formative is present to signal that the subject of one clause is either the same or different from that of an adjacent clause Haiman & Munro (1983: ix). In Mandan, the enclitic complementizers *=ni* and *=ak* appear in clause-final position to indicate that there is a switch in what subject is being referenced.

The *=ni* enclitic indicates that the subject of its clause is the same as the one of the following clause. The dependent clause *sáqka róonapini* ‘we found a few’ features the same-subject switch-reference marker, which signals to the listener that the following clause will have the same subject. The same subject is confirmed in *nukeréeho’sh* ‘we went back [home]’. The same-subject switch-reference marker is shown in bold below.

- (29) Example of same-subject switch-reference construction

<i>Sáqka róonapini</i>	<i>nukeréeho’sh.</i>
<i>sáqka rV-o-rap=rí</i>	<i>rú-k-rEEh=o’sh</i>
be.few 1A.PL-PV.LOC-find=ss 1A.PL-VERT-go.there=IND.M	

‘We found a few and we went home’ (Hollow 1970: 470)

¹⁴See also Kasak (2022) for additional discussion of topic-marking in Mandan, as well as how prosody is used to focalize elements within a Mandan sentence.

2 Grammatical overview

The different-subject switch-reference marker *=ak* similarly indicates a relationship with the following clause, only that the subject of the clause bearing *=ak* does not have the same subject as the following clause. The dependent clause *kihkaráarak* ‘he looked around’ bears *=ak*, signaling that the subject of the independent clause *mí’xteseena xkáhereka’eeheero’sh* ‘the big rock was chasing him, so they say’ must have a different subject. The different-subject switch-reference marker is shown in bold below.

- (30) Example of different-subject switch-reference construction

Kihkaráarak *mí’xteseena*

kihkraa=ak wí’#xtE=s=ee=rá

look.for=DS stone#be.big=DEF=DEM.DIST=TOP

xkáhereka’eeheero’sh.

xkáh#hrE=ka’eehee=o’sh

move.away#CAUS=QUOT=IND.M

‘He looked around and that big rock was chasing him, so they say.’ (Hollow 1973a: 18)

The fact that overt nominal elements in Mandan can be omitted from the discourse can render such constructions ambiguous without the presence of switch-reference marking. For example, in the sentence (30) above, the independent clause alone could be interpreted as ‘the big rock was chasing him’ or ‘he was chasing the big rock,’ given the fact that subjects are frequently dropped when speaking. The *=ak* in the preceding clause clarifies the context of whether ‘that big rock’ is the subject or the direct object, given that both ‘he’ and ‘that big rock’ are third person singular arguments and there would be no morphology on the verb to disambiguate subjecthood.

See §6.3.1 for a more thorough discussion of switch-reference marking in Mandan and the syntactic structure of clauses in a switch-reference relationship. The transcribed narrative in §7.2 further illustrates ways in which switch-reference is an integral part of Mandan multiclausal syntax and its overall narrative structure.

2.8.2 Serial verb constructions

Switch-reference represents the most typical process whereby two or more clauses are combined in Mandan. The other common method by which two clauses will establish a relationship between themselves is through serial verb constructions. These serial verb constructions are used to express actions or states that are treated as part of the same event.

2.8 *Multiclausal structure*

Serial verb constructions, being a single complex predicate, must necessarily share the same subject among each of the verbs involved. The structure of these serial verb constructions involve one or more verbs that are inflected with subject and object prefixes where relevant, plus an encliticized stem vowel complementizer /=*E*/. Furthermore, each serialized verb that bears the stem vowel complementizer also has a null enclitic /= \emptyset /, which is the continuous aspect marker. The continuous aspect marker triggers ablaut on the stem vowel. The final verb in a serial verb relationship does not bear this complementizer.

We can see an example of a serial verb construction in the data below in (31). The serial verb construction begins with the serialized verb *áaraaha* ‘bringing him with him,’ which is an action that happens within the same eventuality as the proposition *shq̥taa ikaaxe’sh* ‘he landed on the other side.’ The morphological manifestation of serialization appears in bold below.

(31) Example of a serial verb construction

<i>Áaraaha</i>	<i>shq̥taa</i>	<i>ikaaxe’sh</i>
<i>aa-rEEh=</i> E <i>=</i> \emptyset	<i>shq̥=taa</i>	<i>i-kaaxE=o’sh</i>
PV.TR-go.there=sv=CONT	be.across=LOC	PV.DIR-decend=IND.M

‘He landed on the other side, taking him with him.’ (Holloway 1973b: 5)

The serial verb constructions in Mandan permit intervening material between the serialized verbs. This pattern of forming a serial verb construction differs from other languages with serial verb constructions where a serialized verb must have another verb immediately following it. As such, serial verb constructions in Mandan can be analyzed as a sequence of verb phrases. A longer discussion of serial verb constructions in Mandan appears in §6.3.2. There are also instances of serial verb constructions throughout the narrative “Eye Juggler” found in §7.2,

3 Phonetics and phonology

This chapter describes the sound system of Mandan. Very little attention has been paid to phonetic and phonological matters in this language, as previous efforts have focused on the collection of narratives (e.g., [Kennard 1934](#); [Hollow 1973a,b](#); [Benson et al. 2009](#); [Trechter 2012a,b](#)), the creation of brief grammatical sketches (e.g., [Kennard 1936](#), [Coberly 1979](#), [Carter 1991b](#), or [Mixco 1997a](#)), or word and affix lists (e.g., [Maximilian 1839](#), [Will & Spinden 1906](#), and [Hollow 1970](#)). Pedagogical materials created for Mandan likewise mention little about the relevant sounds in this language (e.g., [Hollow et al. 1976](#), [Little Owl & Rhod 1992](#), and [Benson 2000](#)).

There are two overall goals for this chapter. One goal is to provide an overview of the phonemic inventory of Mandan, as well as allophonic alternations and phonological processes that influence the realization of surface forms. This chapter also deals with information that has not been previously described, such as stress assignment and environments where nasal harmony is blocked. Phonological processes are described in a way that is meant to be theoretically neutral and accessible to a readership that can be accessible to community members while also presenting data in a way such that linguists and other scholars can contextualize these phonological processes within the typology. One additional contribution that this work provides to the understanding of Mandan is the inclusion of phonetic data analyzed using [Boersma & Weenik's \(2020\)](#) program Praat to conduct waveform and spectrographic analyses.

I begin this chapter by examining the consonant inventory of Mandan in §3.1, before moving on to vowels in §3.2. The orthography used for Mandan in this book is explained in §3.3. An examination of the phonotactics of Mandan and its possible consonant clusters appears in §3.4. In §3.5, I describe those morphophonological phenomena that do not take internal word structure into account, and then document those phenomena that treat internal word boundaries as blocking environments in §3.6.

3 *Phonetics and phonology*

3.1 Consonants

Most description of Mandan grammar has revolved around its morphology (Kennard 1936, Hollow 1970). The level of analysis on its sound system, and its consonants in particular, have been minimal. This section aims to collect what little description has been done on Mandan consonants to argue for the phonemic inventory shown in Table 3.1, and to contrast this inventory with the descriptions by previous researchers and their subsequent transcriptions of Mandan. First, I propose an inventory of consonants, then describe its plosives in order to resolve that there are no voiced stops in Mandan and that there is a single stop series. I investigate whether the afficate /tʃ/ as described in Kennard (1936) is actually present in Mandan, and discount it as the misperception of certain consonant clusters. I show that Mandan has the same set of plain fricatives that are common to most Siouan languages, as well as show that there are no underlying nasal consonants in Mandan, as all surface nasals can be attributed to nasal harmony with a following nasal vowel.

Mandan is similar to other languages of the northern Great Plains in that it has a relatively small consonant inventory within Maddieson's (2013b) typology of consonant inventory sizes.¹ In particular, the number of phonemic consonants is quite low, with only 10. Mandan is likewise noteworthy for having no underlying nasal consonants, despite the fact that nasal consonants are some of the most commonly encountered sounds in the language. This lack of underlying nasal consonants is a holdover from Proto-Siouan, which likewise lacked such consonants (Rankin et al. 1998). Missouri Valley languages share this feature with Mandan, which is one of the numerous reasons why previous researchers have grouped them together (Rankin 2010).

3.1.1 Consonant inventory

Table 3.1 represents a summary of the phonemic consonant inventory of Mandan, with the corresponding orthographic equivalent represented in angled brackets. Allophony is not represented here, but is addressed in subsequent sections.

¹Languages of the northern Great Plains have small consonant inventories going off the typology (i.e., fewer than 14 consonants) per Maddieson (2013b), with Hidatsa having 10 (Boyle 2007: 27), Crow with 11 (Graczyk 2007: 12), Arikara with 12 (Parks et al. 1979: 1), Cheyenne with 11 (Leman 2013: 214), Arapaho with 12 (Picard 1994: 4), Plains Cree with 10 (Wolfart & Carroll 1981: 8), and Pawnee with 8 (Parks 1976: 13). To the best of my knowledge, there has not been much in-depth study to determine whether this phenomenon is part of some language area effect, particularly since the ancestor languages of the languages mentioned above are reconstructed with drastically larger consonant inventories.

3.1 Consonants

Table 3.1: Consonant inventory

	Bilabial	Alveolar	Post-alveolar	Velar	Glottal
Plosive	p	t		k	?⟨’⟩
Fricative		s	ʃ⟨sh⟩	x	h
Sonorant	w	r⟨r⟩			

The inventory of consonants listed in Table 3.1 does not differ from the inventory given in Hollow (1970: 14). However, the inventory above is smaller than those given in Kennard (1936: 2) and Mixco (1997a: 13), who identify 13 and 11 consonants, respectively. Kennard’s inventory includes /ⁿd n m/, and he does not take allophony into account, however, which accounts for these additional consonants, as [ⁿd n] are both allophones of /r/ and [m] is an allophone of /w/ (see §3.1.5). Mixco includes an affricate /tʃ/ (see §3.1.3).

Of note is that Mandan has a drastically diminished consonant inventory when compared to other Siouan languages. The neighboring Lakota have a four-way stop distinction and a two-way fricative distinction, while the Omaha to the south have a five-way stop distinction. The inventory of consonants described in Rankin et al. (1998) in Proto-Siouan appear below in Table 3.2.

Table 3.2: Proto-Siouan consonant inventory

	Bilabial	Coronal	Palatal	Velar	Glottal
Plosive	plain	*p	*t		*?
	glottalized	*p?	*t?		*k?
	preaspirated	*hp	*ht		*hk
Fricative	postaspirated	*ph	*th		*kh
	plain		*s	*š	*x
Sonorant	glottalized		*s?	*š?	*x?
		*w	*r	*y	
Obstruent		*W	*R		

The two aspirated stop series collapsed with the plain stops in Mandan, and the glottalized series for the stops underwent a particular metathesis, where the glottalized component of the stop became a coda glottal: i.e., PSi *C?V > Man CV?, as we see in *kú* ‘give’ < PSi *k?u. Proto-Siouan glottalized fricatives likewise

3 Phonetics and phonology

underwent this change in Mandan: e.g., PSi *š?ehe ‘drip’ > Man *shé’he* ‘drip’ and Lak *oyúš’e* ‘make a drop into something using one’s hands.’ Mandan shares this typologically marked sound change with Missouri Valley Siouan, yet another reason to posit a closer genetic relationship between these two branches of the Siouan language family. Further work is needed to explore additional evidence for the closer relationship between Mandan and Missouri Valley Siouan.

3.1.2 Plosives

This subsection serves to describe the plosives present in Mandan, which has only a single stop series. Other branches of Siouan have several contrasting stop series. Osage exemplifies this robust distinction with its five-way stop series: plain, preaspirated, postaspirated, voiced, and ejective (Quintero 2004: 17). Mandan is similar to Crow in that it only has a single stop series, though it differs from Hidatsa, which has re-innovated a postaspirated distinction (Boyle 2007: 27, Graczyk 2007: 12).² The collapse of the Proto-Siouan stop series must have occurred before the ancestor language of Mandan and Missouri Valley Siouan (i.e., Crow and Hidatsa), given that all three languages involve a merger of *C, *hC, and *Ch to /C/, and metathesis of glottal elements in *C?V to /CV?/ (Rankin et al. 1998). There is no evidence that Mandan has innovated any other stop series since these sound changes in Proto-Mandan-Missouri Valley.

3.1.2.1 Supralaryngeal stops

We can divide the stops in Mandan into two varieties: supralaryngeal and sublaryngeal. Historically, the sublaryngeal stop (i.e., the glottal stop) has often not been transcribed and can be difficult to discern by ear for some. Supralaryngeal stops have been the subject of more description and are treated to a separate analysis here.

The earliest description of Mandan stops comes from Prince Maximilian (1839), who lived among the Mandan in the early 1830s. Though he transcribed Mandan using German orthography, the only voiced stop he consistently writes is ⟨d⟩ between vowels where [r] appears today. This treatment of the flap as a stop is continued by the trader and translator Kipp (1852). Will & Spinden (1906) describe

²The postaspirated stops in Hidatsa correspond to geminate stops in Crow: e.g., Hid *-taa* [-t^ba:] NEG and Cro *-ssaa* [-s:a:] NEG, but both in turn originate from simple stops or sonorants. The negative suffix, for example, comes from PSi *r̥i NEG plus the adverbial *haa. The short vowel syncopates before the syllable with the long vowel, creating an **rh cluster. The **r fortifies to ***t, yielding the aspirated [t^b] (Jones 1983b: 8). Mandan treats PSi *rh clusters similarly, but only has the plain stops: e.g., PSi *re-híi ‘arrive here’ > **rhii > Man *tí* [ti] ‘arrive here.’

3.1 Consonants

Mandan as having voiced and unvoiced stops in their grammatical sketch: /p b t d k g/. Kennard's (1936) grammar describes only one voiced stop, ⟨d⟩, which he describes as a pre-nasalized stop [ɾd] that occurs in complementary distribution with [ɾ]. He has this to say about the quality of these stops: "the series of stops are all slightly aspirated. The degree of aspiration varies with the position of the sound, being more pronounced in initial and medial position than final. Acoustically, the aspiration is stronger when the stop precedes a close vowel than an open, although each represents only one phoneme" (Kennard 1936: 2).

Torres (2013a) conducts a phonetic investigation of the quality of stops in Mandan, using a 30-minute recording from the 1980s of Mrs. Otter Sage, along with a transcription produced by Benson et al. (2009) as a corpus. Torres finds that the stops in Mandan are clearly voiceless, with the measured voice onset times (VOTs) appearing below.

Table 3.3: Measured means: VOT per Torres (2013a: 29)

Stop	Number of tokens	Mean (ms)	St.Dev.
/p/	35	12.8	11.4
/t/	255	10.9	6.1
/k/	562	25.8	13.3

My own findings conform to those in Torres (2013a) in that stops are unaspirated. Under Cho & Ladefoged's (1999) typology of aspiration, all of these stops fall into the expected range for being unambiguously unaspirated, where VOT values of approximately 30ms form the upper bounds of what most languages treat as a voiceless unaspirated stop. We can compare these numbers with those of a Siouan language that contrasts aspirated and unaspirated stops like Lakota, where we can see that Mandan's stops clearly pattern as plain stops.

Table 3.4: Mean (ms) VOT for Lakota stops (Torres 2013b)

Stop	Bilabial	Alveolar	Velar
plain	13	14	31
aspirated	94	95	114

Torres (2013a,b) conclusively demonstrates that the supralaryngeal stops in Mandan are unaspirated. What she does not look at, however, is to what degree these stops are voiced.

3 Phonetics and phonology

Analysis of recorded data from Mandan speakers born prior to 1940 shows that there is no allophonic voicing of these plosives in intervocalic environments. Contra Kennard's (1936) observations, there is no perceptually significant aspiration: i.e., stops are unaspirated. To illustrate this behavior of both singleton stops and those in clusters, examples of /t/ in the full range of possible stop environments appear below: word-initially, word-finally, intervocally, and elements in a consonant cluster.

In Figure 3.1 below, we can see that the word-initial /t/ in the word *túroote* 'must be some' has only a slightly positive VOT. For this particular word, the VOT is 9.1ms, which is lower than the average of 12.2ms for word-intial /t/, but still within a single standard deviation of 5.6ms (Torres 2013a: 29). The intervocalic /t/ has an even shorter VOT of 7.8ms. For the word *ikimaapet* 'downward' in Figure 3.2, where /t/ appears word-finally, there is no perceptable VOT between the release of the /t/ and the following segment.³

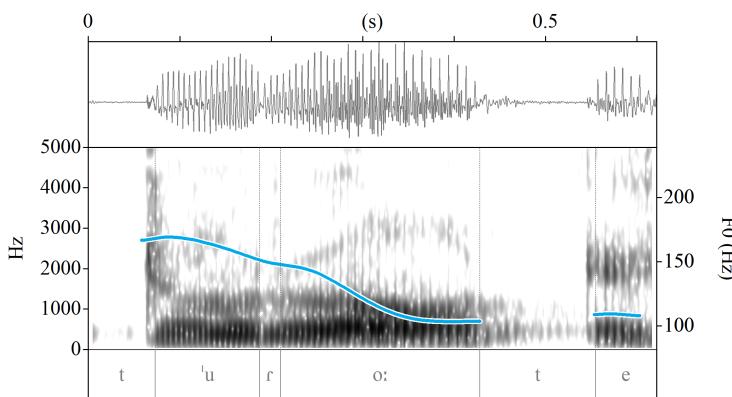
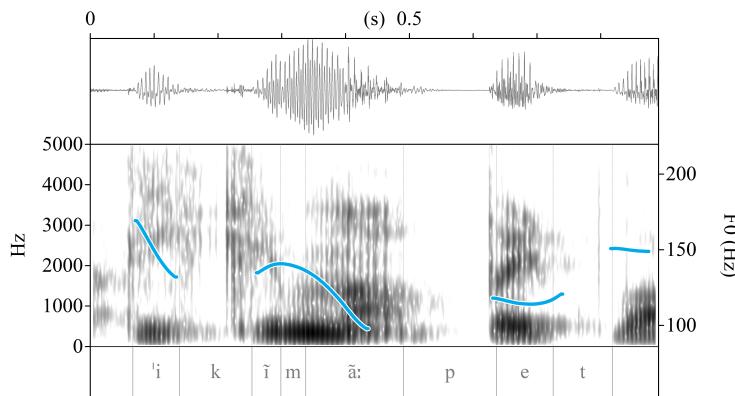


Figure 3.1: #t and _t_ in *túroote* (MG)

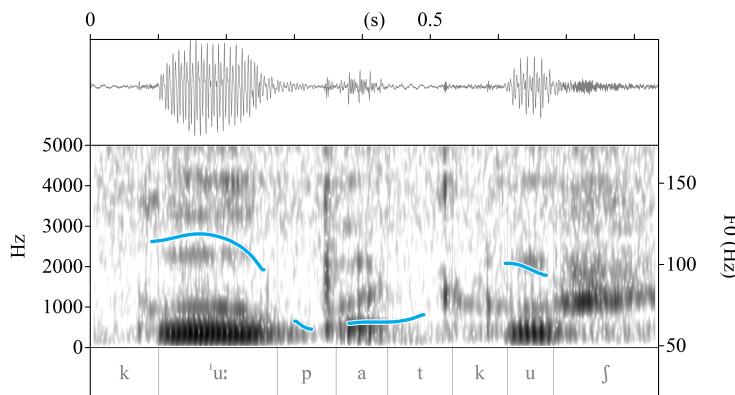
In addition to demonstrating the lack of aspiration, contra Kennard's (1936) description, the examples below act as a representative example of the behavior of voicing with respect to supralaryngeal stops in Mandan. Though the quality of certain recordings may make analysis difficult due to background noise or issues with older recording equipment that cause a band of energy to appear on the spectrogram where the voicing bar should be, we can compare this band with

³These figures are created in Praat, version 6.4.12 (Boersma & Weenik 2020), using Elvira-García's (2022) Praat script for creating customizable Praat pictures

3.1 Consonants

Figure 3.2: t# in *ikimaapet* (MG)

the lack of periodicity to any stops on the accompanying waveform to show that stops in Mandan are robustly voiceless, even in intervocalic environments.

Figure 3.3: /Ct/ cluster in *kúupatkush* (EB)

3 Phonetics and phonology

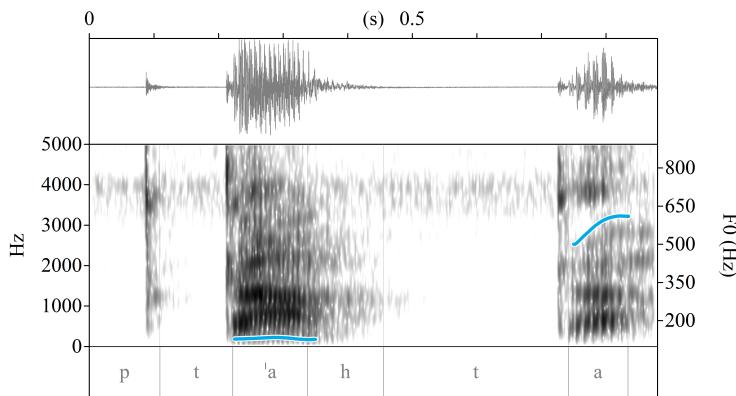


Figure 3.4: /tC/ cluster in *ptáhta* (EB)

We see no significant bursts after /t/ in Figures 3.3 and 3.4 to signify aspiration, regardless of what position the /t/ takes. In Figure 3.3, where we have a cluster-final and word-final /t/ in *kúupatkush* ‘just seven,’ we see a VOT of 16.8ms for the cluster-final /t/. In Figure 3.4, the VOT has a value of 16.2ms. Both of these values are in line with other values for unaspirated /t/ in Cho & Ladefoged (1999: 219), as well as the data presented in Torres (2013a).

When looking at materials written by Mandan speakers themselves, there are inconsistencies in the ways that they have recorded these stops. The acoustic analyses presented above show that the supralaryngeal plosives /p t k/ in Mandan are always voiceless and are on average without perceivable aspiration. This factor can cause L1 English-speakers to interpret these sounds as voiced. In pedagogical materials used at the school in Twin Buttes, ND or at the tribal college in New Town, ND, these sounds have often been written out as ⟨b d g⟩ by L1 instructors and heritage learners (e.g., Little Owl & Rhod 1992 and Benson 2000).

The singleton supralaryngeal stops can appear in any position within a syllable or word. This distribution is visible in Table 3.5.

3.1 Consonants

Table 3.5: Supralaryngeal stops

/p/			
# _ :	[po]	<i>pó</i>	‘fish’
V _ :	['ku:pa]	<i>kúupa</i>	‘seven’
_ :	['núp]	<i>núp</i>	‘two’
/t/			
# _ :	['to:he]	<i>tóohe</i>	‘blue/green’
V _ :	['oti]	<i>óti</i>	‘house’
_ :	['á?t]	<i>á't</i>	‘that one’
/k/			
# _ :	['ko:re]	<i>kóore</i>	‘squash’
V _ :	['psá:ka]	<i>psáqka</i>	‘frog’
_ :	['suk]	<i>súk</i>	‘child’

A detailed account of possible consonant clusters is addressed in §3.4.1.

There is no allophony for singleton supralaryngeal stops based on their position within a word or syllable. When pseudo-geminate clusters arise through compounding or other morphological operations, however, lenition of the first segment occurs to prevent surface $[C_i C_i]$ sequences. See §3.5.1 for further explanation of pseudo-geminate dissimilation.

3.1.2.2 Glottal stop

One sound that is often omitted from transcriptions in the corpus is the glottal stop /ʔ/. This omission is due to the fact that words containing /ʔ/ are conflated with having a long vowel instead of a /Vʔ/ sequence, or there are difficulties perceiving the glottal stop when word-final (Hollow 1970, Boyle p.c.). This subsection aims to demonstrate that the glottal stop occurs more often than described in previous work, and is not deleted word-finally, contrary to Hollow (1970: 43).

The glottal stop /ʔ/ is a distinctive phoneme in Mandan, and is often found as the first element of consonant clusters, most notably the allocutive markers: e.g., the sentence-final male-addressee indicative marker =o'sh or its female-addressee counterpart =o're. The /ʔ/ can only appear as a coda element, and can occur word-finally, as seen in the first two examples in (1) below, or as the first segment in a cluster, as seen in the remaining examples in (1). There is no word-initial /ʔ/ in Mandan, nor does it appear as the second element of a cluster.

3 Phonetics and phonology

(1) Coda glottal stops⁴

Underlying form	Surface form	Orthographic form	Gloss
/piʔ/	[piʔ]	pi'	'liver'
/keʔ/	[keʔ]	ké'	'to dig'
/wɪʔh=E/	[mɪʔ.he]	mí'he	'shawl'
/se=oʔʃ/	[seʔʃ]	sé'sh	'it is red'
/fi=oʔre/	[fiʔ.re]	shí're	'it is good'

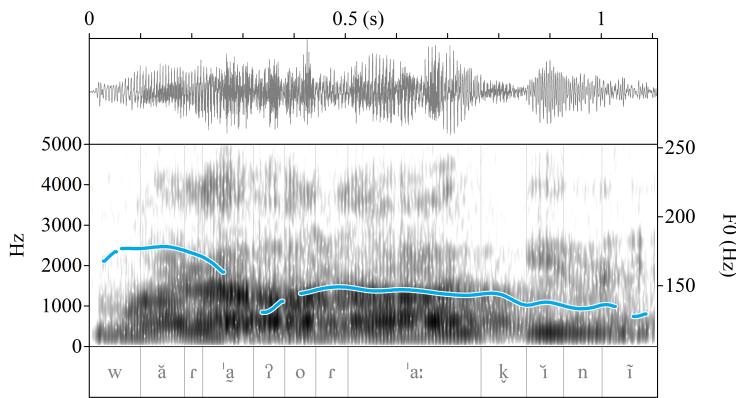
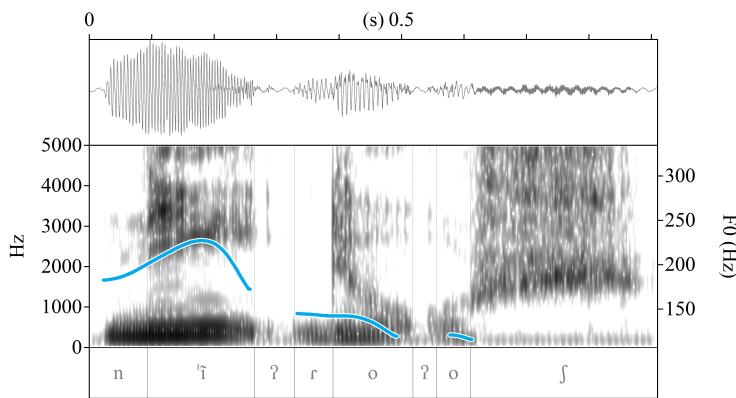
The only position where /ʔ/ does not appear is word-initially or root-initially. Phonemic /ʔ/ is only found as an element of a syllable coda. Glottal stops are possible intervocally, but such segments are epenthetic and a repair mechanism to prevent hiatus. This kind of epenthesis is discussed further in §3.6.1 and §3.6.2.1.

In previous descriptions of Mandan, marking of the glottal stop is sporadic, with Hollow (1970, 1973a, 1973b) and Hollow et al. (1976) being the most consistent. However, Hollow frequently does not mark word-final glottal stops, even going so far as to propose a rule to delete glottal stops in word-final environments. However, word-final /ʔ/ is typically present, as shown below for *wará' oráakini* 'and he built a fire.' The /ʔ/ in *wará'* 'fire' is weakly present before the initial /o/ in *oráakini* 'he built it,' manifesting with drastically reduced closure and causing the preceding vowel to have creaky voice. This glottal stop is realized by a reduction in amplitude and periodicity, but phonation is still taking place, which accounts for why it is still voiced. The adduction of the glottal folds is insufficient in this lenited position to completely block expiration, which causes the /ʔ/ to have an almost approximant-like appearance on the waveform and spectrogram.

The example below in Figure 3.5 highlights an important and overlooked fact about /ʔ/ in Mandan: phonetically, glottal stops have a large variation in how they are realized. They can be realized as the expected complete closure at the glottis, as exemplified in Figure 3.6 above with the word *ni'ro'sh* 'he climbed.' In this word, the first glottal stop is a complete closure. The second glottal stop, however, is shorter in the duration of its closure, so some of the phonation from the preceding vowel carries through, creating an echo vowel.

⁴Several of these underlying forms involve the stem vowel /_=E/. This enclitic features the ablaut vowel /E/, which is explained later on in §3.5.3.

3.1 Consonants

Figure 3.5: Word-final /?/ in *wará' oráakini* (AE)Figure 3.6: Glottal stops in *ni'ro'sh* (OS)

Other possible realizations of /?/ appear in the word *rá'kakshe'sh* ‘you met him,’ shown below in Figure 3.7. Like in Figure 3.6 above, there is an instance of underlying /V?/ manifesting as [V?V]. However, the glottal stop itself has a low degree of closure. The second /?/ similarly is not a complete stop, but it has the added effect of causing the preceding /e/ to become creaky voiced due to anticipatory co-articulation of the adducting glottal folds.

3 Phonetics and phonology

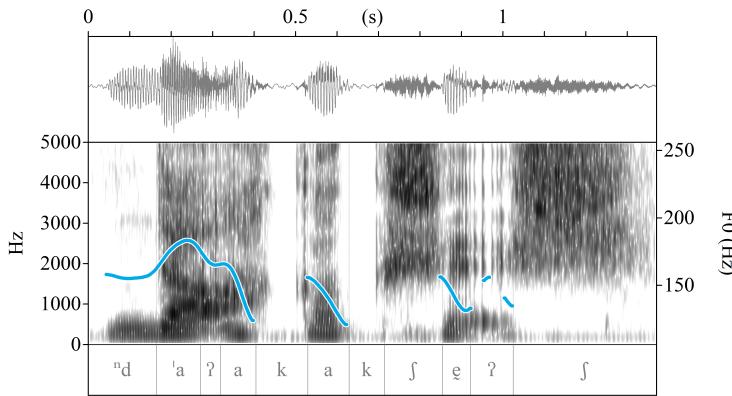


Figure 3.7: Glottal stops in *rá'kakshe'sh* (OS)

Pierrehumbert & Talkin (1992: 94) state that the variations in the realization of /ʔ/ in other languages they have investigated are unsurprising, noting that a complete obstruction of airflow at the glottis for a glottal stop is quite unusual. Their analysis shows that it is typologically expected that languages feature this degree of variation in the production of /ʔ/, so Mandan is not typologically unusual with respect to its treatment of glottal stops.⁵

Overall, /ʔ/ has a variety of realizations, which is likely the reason why so many previous researchers have either inconsistently transcribed it or have omitted it altogether. The one observation that holds across all descriptions of the glottal stop in Mandan, however, is that it is restricted to coda positions in surface representations. Moreover, these glottal stops are salient to the phonology of Mandan in that they contribute to syllable weight and thus affect the placement of primary stress (see §3.6.2.1 for further discussion of how the introduction of /ʔ/ can cause long vowels to truncate and §3.6.1.2 for explanation how epenthetic [r] resolves hiatus in the environment of both long vowels and syllables with coda glottal stops).

3.1.3 Affricates

Mandan has been described as having a single affricate, /tʃ/, in three previous works: Will & Spinden (1906), Kennard (1936), and Mixco (1997a). Hollow (1970:

⁵Of particular note are Mayan languages, which likewise can have /ʔC/ clusters that have a wide variation of realizations (Baird 2010, Bennett 2016).

3.1 *Consonants*

14) does not mention this sound in his description of Mandan phonology in the first chapter of his dissertation and does not address why he omits it, given that he frequently cites *Kennard's (1936)* interpretations of what functions particular pieces of morphology play. The /tʃ/ is sparsely attested within *Kennard's (1934)* texts, and *Will & Spinden (1906: 190)* even note that this sound is seldom heard. Despite this sound being described in other works, I argue here that there is no /tʃ/ in Mandan, though a heterosyllabic [tʃ] cluster is possible.

Will & Spinden (1906: 190) list /tʃ/ in their sketch of Mandan, using the digraph ⟨tc⟩, as was convention for Americanist transcription at the time. The words they compiled consist of those they personally collected from Mandan consultants while doing archeological fieldwork on the reservation, as well as several words copied from *Maximilian's (1839)* wordlist. While they do state that this sound is poorly attested, upon further analysis, we can see that all instances of ⟨tc⟩ in their survey of Mandan vocabulary are typically the result of the failure to hear a word break or mistaking adjacent /k/ and /ʃ/ segments for /tʃ/.

(2) Examples of ⟨tc⟩ in *Will & Spinden (1906)*

Original	Underlying	Surface	Gloss
⟨cantcuke⟩	/ʃūt#kʃuk=E/	[ʃūt.kʃu.ke]	'muskrat'
⟨hirutcote⟩	/hru:t#ʃo:t=E/	[h̥ru:t.ʃo.te]	'grey fox'
⟨antcihc⟩	/ã:tʃ ū=o:tʃ/	[ã:tʃ ū=o:tʃ]	'it is good'
⟨Mantaktcuka⟩	/wã:tah#kʃuk=E/	[wã:tah.kʃu.ke]	'Little Missouri'

Kennard (1936) is the first researcher to accumulate large amounts of Mandan data, depositing around three hundred typed pages of Mandan narratives and English free translations at the American Philosophical Society. He is also the first to describe the grammar of Mandan at any length. In his grammar, he refers to the suffix /-tʃ/ as the intentive marker. Like *Will & Spinden (1906)*, he uses the digraph ⟨tc⟩ to mark the affricate /tʃ/, though it is also unclear when ⟨tc⟩ is an affricate and when it is a sequence of /t/ followed by /ʃ/.

For the most part, /tʃ/ is found almost only in what *Kennard (1936: 19)* calls the intentive marker ⟨-tc⟩: e.g., ⟨ma'ma:kotc⟩ 'I'll be there'. I suggest that this intentive marker Kennard was hearing was not actually [tʃ], but some casual speech phenomenon where the sequence of the modal =kt and the allocutive marker =o'sh were sometimes not clearly articulated at the end of an utterance. In the recordings I have, it is very common for speakers to cease phonation leading up to sentence-final morphology like the male-addressee declarative marker =o'sh or its female-addressee counterpart =o're. In fact, since there are no instances of /tʃ/ found in any of the recordings I have personally collected or in recordings

3 Phonetics and phonology

collected by others, I discount the notion that there is an affricate /tʃ/ in Mandan and furthermore claim that all such instances of it in Kennard (1934, 1936) are all instances of misanalysed consonant clusters or typographic error.

To demonstrate this, I appeal to Kennard's (1934) set of 28 narratives, which he elicited and transcribed in the early 1930s. Hollow (1973b) later re-elicited 24 of those same texts in the late 1960s and early 1970s. The fact that we have two sets of texts that are mostly identical provides us with an excellent means to evaluate which transcription is more faithful to the spoken Mandan each researcher was recording. In every instance where Kennard marks this sound, Hollow's re-elicitation has the potential marker *=kt* plus the masculine indicative marker *=o'sh* instead. Examples of the relationship between Kennard's /tʃ/ and Hollow's potential mood marker *=kt* followed by the male-addressee declarative marker *=o'sh* appear below. The original translations from Kennard remain as-is, and the relevant segments are shown in bold.⁶

The ⟨-kisotc⟩ in (3a) is probably a misperceived =kt=o’sh. Other instances in which we see /tʃ/ in Kennard (1934) are when there is a typographic error, as seen in the case below where a /t/ that should follow after the /ʃ/ is written as if they were an affricate. The passage below presents an excerpt from Kennard’s (1934) elicitation of the tale “Old Woman’s Grandson,” followed by Hollow’s (1973b) re-elicitation.⁷ Kennard’s free translation is preserved, though I have altered Hollow’s. Relevant segments are shown in bold.

⁶I have altered the transcription from Hollow (1973b) to fit the Mandan orthography used throughout this work due to the fact that Hollow's work is much more thoroughly transcribed than Kennard's, as well as the fact that the point of this portion is to demonstrate that all of Kennard's ⟨tc⟩ are really typographic or perception errors.

⁷There is only a single word difference (i.e., *hekaraani* ‘they looked at it and’) between these two versions, but the material relevant to demonstrating that there is no /tʃ/ in Mandan still stands.

3.1 Consonants

- (4) a. ⟨iwahúre rátirika cíherek úka tákaha kiwáratcùki úka
orúsanakereròmakoc⟩

‘The bones were scattered. After they burned to ashes again, they left it.’ (Kennard 1934: 275)

- b. *íwahuure* *rá'tirikaa* *shiherek*,
i-wa-huu=E ra'-trik=E=∅ shi-hrE=ak
3POSS-UNSP-bone=SV INS.FIRE-be.powdery=SV=CONT good-CAUS=DS
ú'ka *hékaraani* *kiwará'shùtki*, *ú'ka*
ú'ka hE=krE=rj ki-wra'-shùt=ki *ú'ka*
be.farther see=3PL=SS MID-fire-tail=COND be.farther
órusanahkereroomako'sh
o-ru-sràk=krE=oowàk=o'sh
PV.LOC-INS.HAND=short=3PL-NARR=IND.M

‘His bones having been nicely burnt to a fine powder, they then looked at it, and when it [his bones] became ashes, they then left it there.’ (Hollow 1973b: 136)

In the data above, Kennard’s (1934) (kiwáratcùki) is really *kiwára'shùtki* ‘when [his bones] became ashes,’ where ‘ash’ is literally ‘fire’s tail.’ At the boundary between the two words in the compound *wára* ‘fire’ + *shùt* ‘tail,’ we see a heterosyllabic [?.ʃ] cluster. This cluster is misperceived by Kennard as [tʃ]. All instances of ⟨tc⟩ in Kennard (1934, 1936) can thus be explained as a surface cluster of [tʃ] stemming from morphologically complex word, misperceptions of a voiceless stop followed by [ʃ], or misperceptions of the modal =*kt* followed by the male-addressee indicative marker =*o'sh*.

Mixco (1997a: 26) gives only one example sentence with /tʃ/ in his grammar, and it is not clear if it is from his own field work or from Kennard (1934). Furthermore, there simply are no examples of it in any of the recordings analyzed for this book, which includes speakers born between the 1860s and the 1960s. Given the fact that every instance of ⟨tc⟩ in Kennard (1934, 1936) equates with either =*kt* plus =*o'sh* in the Hollow (1973b) re-elicitations, a cluster consisting of /t/ and /ʃ/, or simply a misperception of a voiceless stop followed by /ʃ/, it is just not the case that /tʃ/ is present in Mandan, despite being reported in previous works. Mandan has no affricates.

3.1.4 Fricatives

While Proto-Siouan had two different fricative series, a plain fricative and a glottalized fricative, Mandan has only one (Rankin et al. 1998). Previous phonetic

3 Phonetics and phonology

work on Mandan consonants has focused solely on the supralaryngeal stops (i.e., [Torres 2013a](#)), and as such, the fricatives merit additional attention, which is given here.

3.1.4.1 Supralaryngeal fricatives

All published sources that give a description of the sound system of Mandan agree on the inventory of supralaryngeal fricatives: /s/ \int /x/. The singleton fricatives can appear in the onset or coda within a syllable or word. This distribution is visible in Table 3.6.

Table 3.6: Supralaryngeal fricatives

/s/		
# _ :	[<i>si</i>]	<i>sí</i> ‘feather’
V _ :	[<i>o.su</i>]	<i>ósu</i> ‘hole’
__ :	[<i>pus</i>]	<i>pús</i> ‘cat’
/ʃ/		
# _ :	[<i>ʃi</i>]	<i>shí</i> ‘foot’
V _ :	[<i>o.ʃerop</i>]	<i>ósherop</i> ‘swallow’
__ :	[<i>tkuʃ</i>]	<i>tkúsh</i> ‘real, true’
/x/		
# _ :	[<i>xih</i>]	<i>xíh</i> ‘old’
V _ :	[<i>o:.xa</i>]	<i>óoxa</i> ‘fox’
__ :	[<i>kox</i>]	<i>kóx</i> ‘buzz’

Root- and affix-internally, supralaryngeal fricatives can be elements in consonant clusters, either as the first or second segment in the cluster. To demonstrate this distribution, instances of /x/ will be given for all five possible positions: word-initial, word-final, intervocalic, cluster-initial, and cluster-final. This fricative is used as an exemplar due to its high frequency within the corpus.⁸ As was the case in §3.1.2.1, the purpose of showing these segments likewise do not display any voicing assimilation, regardless of their environment.

In the example in Figure 3.8, we see *xíko’sh* ‘it is bad (male addressee)’. This figure shows that /x/, like all fricatives, is able to appear word-initially. In addition, this figure visibly shows the fact that the /x/ is voiceless. We see a similar

⁸The velar fricative /x/ is impressionistically much longer than the other fricatives,

3.1 Consonants

behavior for word-final /w/ in the word *miníx* ‘play’ in Figure 3.9 below.⁹

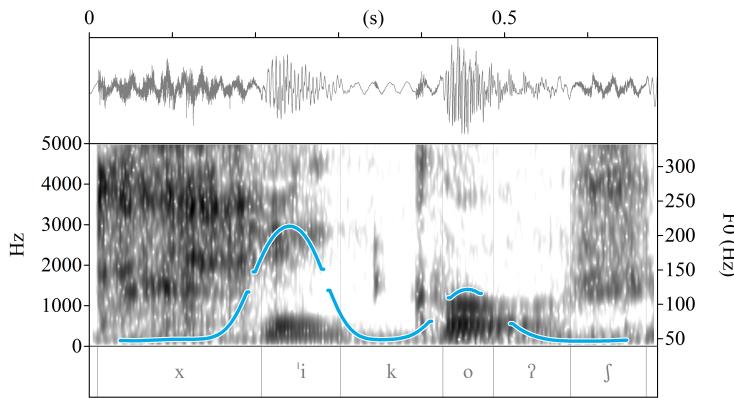


Figure 3.8: #x in *xíko'sh* (OS)

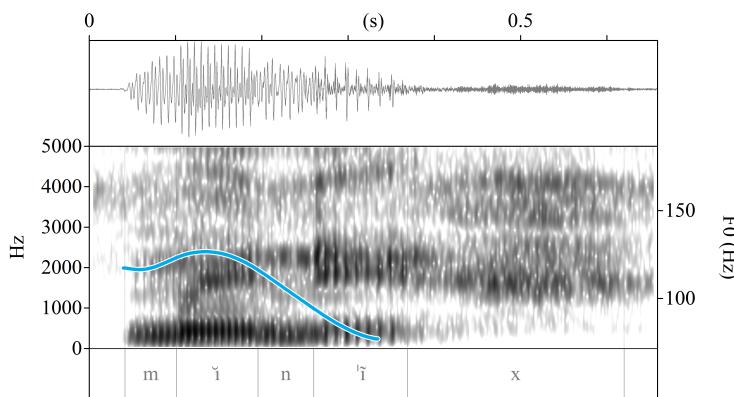


Figure 3.9: x# in *miníx* (EB)

Looking at the examples above, we can see that /x/ maintains its voicelessness even in non-peripheral positions. Similar to the behavior of plosives, the /x/ in

⁹The voiceless velar fricative in Mandan appears to be in free variation with a uvular realization. This sound occurs most often as [x], but it can be articulated as [χ] without a perceived difference by speakers. Due to its status as the most frequent manifestation of this fricative, I uniformly transcribe this sound as /x/ in the present work.

3 Phonetics and phonology

ɿixa ‘alone’ does not undergo voicing assimilation intervocally, as shown in Figure 3.10.

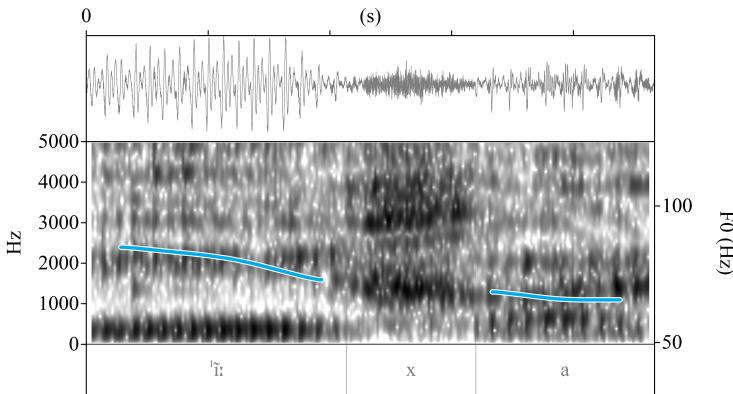
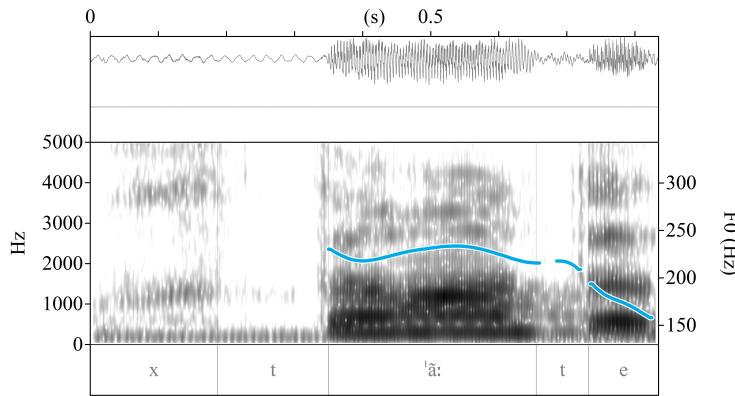
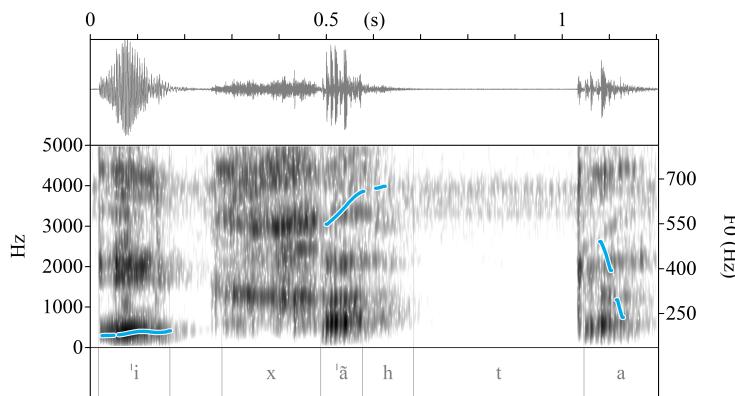


Figure 3.10: x in *ɿixa* (EB)

The /x/ is a common element in consonant clusters, as we can see in the word *xtqáte* ‘thunderbird’ in Figure 3.12 and the word *ixkqhta* ‘laugh!’ in Figure 3.11 both exemplify that /x/ retains its characteristic lack of voicing, a behavior shared with other supralaryngeal fricatives.

To date, there has been no extensive phonetic analysis done on supralaryngeal fricatives in Mandan, or fricatives in general, for that matter. Additional work is needed to verify the impressionistic descriptions above regarding the frequency of these segments in the corpus (i.e., how much more frequent is /x/ than other fricatives), as well as what kind of durational differences are there, given the observation that /x/ seems much longer than other fricatives. The investigation of these points are outside of the scope of this book, but are worthy topics of investigation in the future to add to the typology of sound frequency and why some fricatives are perceptibly longer than others.

3.1 Consonants

Figure 3.11: /xC/ in *xtq̞qte* (AE)Figure 3.12: /Cx/ in *ikxqhta* (EB)

The discussion above described the quality and behavior of supralaryngeal fricatives. Mandan also has a glottal fricative, /h/, which is treated in the subsection below.

3.1.4.2 Glottal fricative

The glottal fricative /h/ is a common element in Mandan. This fricative commonly appears in word-initial position, as we see in the first three examples in

3 Phonetics and phonology

(5) below. The /h/ can also appear word-finally as well, which we can see in the final three examples in (5). Previous researchers omit or sporadically transcribe word-final /h/ in the corpus, and Hollow (1970: 43) even argues that word-final /h/ is deleted. This subsection serves to show that this is not the case, and /h/ is phonetically present always, though it can have variable realization, leading to researchers interpreting it as not being there.

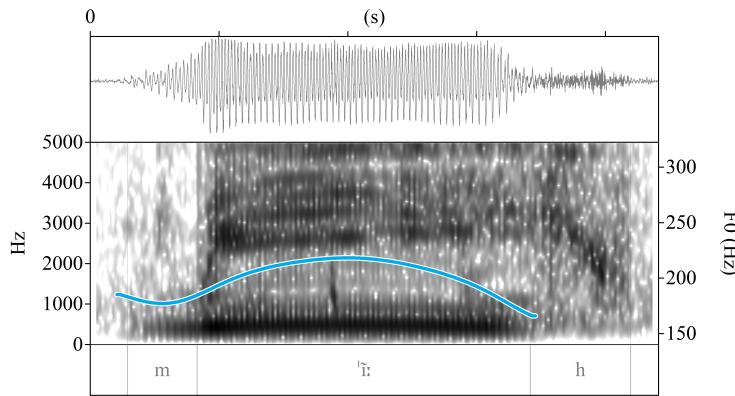
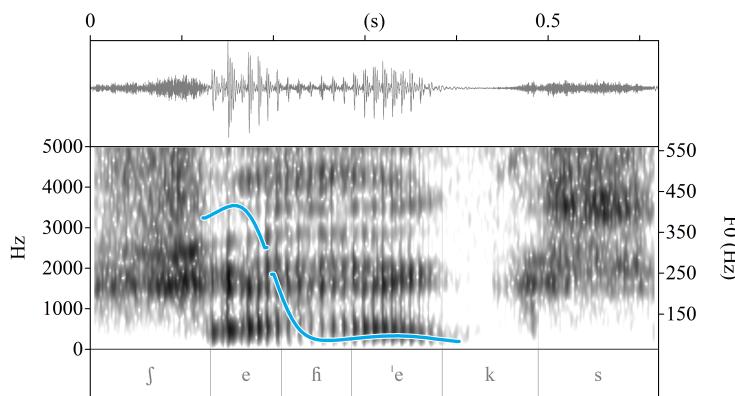
(5) Distribution of /h/

Underlying form	Surface form	Orthographic form	Gloss
/hrero:ka/	[h ^e re.'ro:ka]	<i>Hereróoka</i>	'Crow tribe'
/haho/	[ha.'ho]	<i>hahó</i>	'thank you'
/hū:/	[hū:]	<i>húy</i>	'yes'
/xāh/	[xāh]	<i>xqh</i>	'grass'
/rE:h=ta/	[ⁿ da:.hta]	<i>ráahta</i>	'go there!'
/istūh/	[i.'stūh]	<i>istúh</i>	'night'

The /h/ is able to appear in consonant clusters. Any clusters involving /h/ are always due to affixation or compounding, with the exception of /?h/ clusters, which do occur in non-decomposable stems. In this respect, the distribution of /h/ differs from that of other fricatives.

Hollow (1970: 43) states that /h/ is deleted word-finally and optionally before a consonant. However, in the recorded data being analyzed, instrumentation shows this claim to be false. We have already seen the /h/ in *ráahta* 'go there!' earlier in Figure 3.4, and we can see that word-final /h/ is likewise preserved in *míih* 'woman' in Figure 3.13. One major issue with Hollow's interpretation of Mandan phonology is that he did not discern short versus long vowels. In addition to this issue, he worked with elderly speakers whose normal cadence tended to be more creaky or breathy, which can obfuscate these coda glottal segments. However, using instrumentation, we can see evidence that these elements are not deleted word-finally, but are always present.

3.1 Consonants

Figure 3.13: Realization of h# in *miih* (OS)Figure 3.14: Intervocalic /h/ voicing in *shehéks* (EB)

The /h/ is unique in Mandan as being the only segment that becomes voiced intervocally. An example of this appears above in Figure 3.14 for the word *shehéks* ‘the coyote.’ However, this voicing assimilation only happens when /h/ precedes a syllable bearing primary stress. This behavior even takes place across word boundaries, as seen in Figures 3.15 and 3.16, where we have two examples with intervocalic /h/: *miih éexixte’na* ‘a pregnant woman’ and *máatah íwokahqq* ‘along the river edge.’ In both examples, we have a word-final /h/ that is voiced.

3 Phonetics and phonology

For both of these examples, this /h/ precedes a syllable bearing primary stress. In Figure 3.16, we see an intervocalic /h/ in *íwokahqq* ‘along the edge.’ Here, the /h/ does not precede an onsetless syllable with primary stress and as such, it does not undergo voicing.

When not followed by a word that begins with a vowel, it is not always obvious when a speaker is producing a word-final /h/ due to the fact that many of the recorded speakers of Mandan have had rather breathy voices. This tendency towards breathy voice can obscure word-final /h/ for some listeners, which is what leads Hollow (1970: 43) to his conclusion that they are deleted, but phonetic instrumentation reveals that they are always present.¹⁰

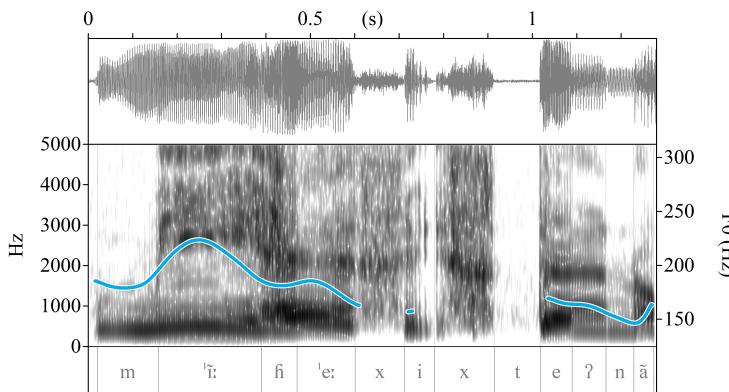
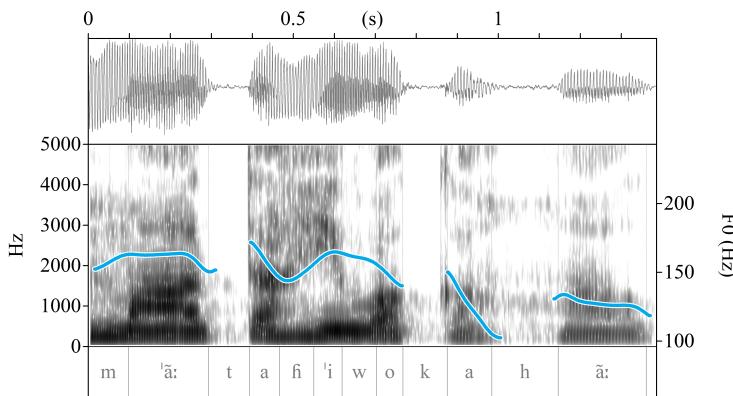


Figure 3.15: /h/ voicing in *míih éexixte'na* (OS)

¹⁰ Additional phonetic work is needed to determine whether the vowels before a coda /h/ are methodically assimilating the [+spread glottis] feature and picking up breathy voice rather than modal voice, or if this is simply a tendency observed when going through older recordings. The scope of voice differences on vowels is beyond the scope of the present work, but seeing if there is a parallel with the creaky voice observed on vowels with coda /ʔ/ is worth investigating.

3.1 Consonants

Figure 3.16: /h/ voicing in *máatah íwokahqq* (OS)

This subsection has shown that /h/ has a slightly different behavior than other fricatives when they are intervocalic and in the environment of primary stress, where they become voiced, [f]. The subsection that follows deals with the only consistently voiced consonants in Mandan, sonorants.

3.1.5 Sonorants

Of all the consonants in Mandan, the sonorants /r w/ are among the most common. Both [Will & Spinden \(1906: 190\)](#) and [Kennard \(1936: 2\)](#) list /w m r n/ as being separate phonemes in their grammatical sketches. [Hollow \(1970: 18\)](#) later argues that all surface nasal consonants are the result of nasal harmony with a following nasal vowel. Any operation that might syncopate such an underlying nasal vowel results in [r w] on the surface instead of [n w]. Subsequent researchers such as [Coberly \(1979\)](#), [Carter \(1991a,b\)](#), and [Mixco \(1997a,b\)](#) all adopt this analysis. I likewise adopt this analysis and assume that all sonorants in Mandan are ultimately oral and are realized as nasal only due to the regressive nasal harmony that affects all voiced segments. Nasal harmony is discussed in greater detail in §3.6.3.

With this analysis in mind, nasal consonants are treated as allophones of their oral sonorant equivalents: i.e., only /r w/ are phonemic in Mandan. Below, we can see examples of oral sonorants becoming nasal sonorants in the data below, where the first person active prefix /wa-/ and second person active prefix /ra-/ become nasalized due to the following nasal segments, becoming either [má-]

3 Phonetics and phonology

and [nā-], respectively (see §3.6.3 for discussion of nasal harmony, which targets vowels and sonorants).

(6) Examples of complementary distribution of oral and nasal sonorants

- a. *waráko'sh*
wa-rak=o'sh
1A-bury=IND.M
'I buried it'
- b. *íraheko'sh*
i-ra-hek=o'sh
PV.INS-2A-know=IND.M
'you knew it' (Hollow 1970: 71)
- c. *manáasko'sh*
wa-rąqkE=o'sh
1A-sitPOS.AUX=IND.M
'I always manage [to do it]' (Hollow 1973a: 54)
- d. *ónanaake'sh*
o-ra-rąqkE=o'sh
PV.IRR-2A-sit.POS.AUX=IND.M
'you will be [one]' (Hollow 1973a: 187)

In (6) above, we see nasal [mā-] and [nā-] where we otherwise expect to see oral [wa-] and [ra-]. This change is not allomorphic in nature, but is purely phonological, owing to the fact that these prefixes precede a syllable that contains a nasal vowel. The nasality spreads leftward, causing /w/ to become [m] and /r/ to become [n]. Thus, all instances of nasal consonants are due to the influence of following vowels bearing underlying nasality. These sounds are predictable and are best described as being in complementary distribution.

In addition to its nasal allophone, /r/ has a word-initial allophone where it fortifies to a prenasalized voiced stop, [ⁿd]. Hollow (1970: 52) describes this allophone, but does not transcribe any differences between [r] and [ⁿd] in his dictionary or the narratives he recorded. Only Kennard (1936: 3) records [r] versus [ⁿd] in his grammar and his transcribed narratives.

(7) [r] versus [ⁿd] in Kennard (1936)

- a. ⟨do'pxani ma'hiseks 'qc dapi'tka^{ɛhɛ}⟩

3.1 Consonants

- róopxaani máah íseks, ú'sh, rap̪ítka'ehe
 roopxE=rí wáqah i-sek=s ú'sh ra-píjt=ka'ehe
 enter=ss arrow PV.INS-make=DEF be.thus INS.FOOT-be.scattered=QUOT
 'he entered and made the arrows, so he scattered them with his foot, it
 is said' (Kennard 1936: 38)
- b. *⟨oma'papi'ræk si:'rena ε'na na'tka dukci'cka'εhe⟩*
 óo máapapirak síreena, éena
 oo wáqapapirak sii=ee=rá ee=rá
 DEM.MID weasel be.yellow=DEM.DIST=TOP DEM.DIST=TOP
 nátka rukshishka'ehe
 rqt=ka ru-kshish=ka'ehe
 be.in.middle=HAB INS.HAND-worry=QUOT
 'That yellow weasel there worried him, it is said' (Kennard 1936: 38)

Each ⟨d⟩ above appears only word-initially, while ⟨r⟩ occurs word-internally. This behavior is consistent with the phonological rule in Hollow (1970: 52). This rule is not completely consistent, however, as in rapid speech, this word-initial [ⁿd] can be realized as [r].¹¹ For speakers born before the twentieth century, there is also an analogous [⁹b] for word-initial /w/. Maximilian (1839) and Will & Spinden (1906) both transcribe this sound as ⟨b⟩.

- (8) Example of word-initial [⁹b] in older Mandan in the word 'charcoal'¹²
- ⟨báchchä⟩ (Maximilian 1839: 236)
 [⁹bexe]
 - ⟨wéxe⟩ (Hollow 1970: 285)
 ['wexe]

In Maximilian's (1839) description of Mandan, the oldest recorded source of Mandan language, this allophony is not consistent. Most words that begin with /w/ are transcribed with ⟨w⟩ instead of ⟨b⟩. One possibility is that this variation was optional, or perhaps more closely associated with one subgroup or dialect

¹¹While working with Mr. Edwin Benson to elicit recordings for the Level 1 Mandan textbook, I would ask him to say an item three times in a row. Typically, the first time Mr. Benson would say a word beginning with /t/, he would pronounce it with a [ⁿd], but subsequent iterations often vacillated between word-initial [r] and [ⁿd].

¹²A note on Maximilian's orthography: Being a native German speaker, he transcribes what he hears using German orthographic principles. For example, he writes ⟨ch⟩ for [x], and switches between ⟨e⟩ and ⟨ä⟩ to express [e]. The doubling of the ⟨ch⟩ here indicates that he perceives the initial vowel to be short, which conforms to the same length this root has in modern Mandan.

3 Phonetics and phonology

of the Mandan. **Maximilian** does not elaborate on how he collected his data and specifically from whom, so the context for which he writes forms beginning with ⟨b⟩ versus those with ⟨w⟩ are left to conjecture. His word lists and paradigms only contain notes of what villages the speakers came from when there was a lexical or grammatical difference (i.e., Nuu’etaa versus Ruptaa). He did not comment on whether there was any difference in the pronunciations of words by one group versus another.

In the corpus, the distribution of [ʷb] parallels utterance-initial /w/, or at least /w/ when said after a long pause. This variant of /w/ is not fully productive nor fully predictable in speakers born during the twentieth century and as such, the present work does not treat [ʷb] as a full allophone of /w/ in contemporary Mandan, with its status marginal at best. This variant does appear sporadically in spontaneous speech, so it may be treated as a possible variant of /w/ in word- or utterance-initial environments, though [ʷb] seems to be dispreferred by the speakers for whom we have recordings.

When compared to other consonants in Mandan, the distribution of sonorants within the syllable is much more restricted. A sonorant can only appear as the sole segment in the syllable onset. This behavior is described in greater detail in §3.2.3. For the purpose of taking historical data into account, the [ʷb] variant of /w/ is included, though its status as a true and conditioned allophone is marginal at best in modern Mandan.

Table 3.7: Distribution of /w/ and /r/

		Initial	Intervocalic		
[w]	[‘wi:pe]	<i>wíipe</i>	‘cornball’	[‘ä:.we]	<i>qqwe</i>
†[ʷb]	[‘ʷbe.xe]	<i>wéxe</i>	‘charcoal’	—	—
[m]	[‘m̩ni]	<i>míni</i>	‘water’	[i.‘mä:.re]	<i>ímaare</i>
[r]	—	—	—	[‘w̩ra?]	<i>wára’</i>
[ⁿd]	[‘de:.sik]	<i>réesik</i>	‘tongue’	—	—
[n]	[‘nä.tka]	<i>nätká</i>	‘heart’	[i.‘näk]	<i>inák</i>

Table 3.7 below summarizes the pattern in Mandan that there are no underlying nasal consonants, and that nasal consonants appear due to assimilation with a following nasal vowel.¹³ Hollow’s (1970: 18) analysis holds, as [m] and [n] cannot appear without an accompanying nasal vowel. Furthermore, the word-initial prenasalized allophone [ⁿd] of /r/ never appears when a word-initial /r/ occurs

¹³The phonemes /w/ and /r/ can also appear as [m] and [n] without an accompanying nasal vowel if they are utterance-initial. This is discussed further in §3.5.2.

3.2 Vowels

with a following nasal vowel: i.e., the /t/ in /rātka/ ‘heart’ will always be realized as [n] and never [nd]. This distribution of sonorants with nasal vowels is noteworthy in that it is consistent with the description of the phonological system of Proto-Siouan argued in [Rankin et al. \(1998\)](#), where all nasal consonants in modern Siouan languages can be reconstructed back to oral sonorants that come into contact with a nasal vowel. To my knowledge, Mandan is alone within the Siouan language family in preserving this archaic feature of Proto-Siouan phonology.

3.2 Vowels

In §[3.1](#), I noted that there has been very little attention paid to the description of consonants in Mandan. Here, I explain that even less attention has been paid to the quality of its vowels. This section serves to provide a summary of the vowel inventory in Mandan

The Mandan vowel system is quite similar to that of other Siouan languages in that there are five vowels that contrast by length: two high vowels, two mid vowels, and a low vowel. In addition to these oral vowels, there are three nasal vowels, all of which also contrast by length. The vowel inventory of Mandan is identical to that of Proto-Siouan in this respect ([Rankin et al. 1998](#)).

3.2.1 Monophthongs

The distribution of oral and nasal vowels in Mandan appears in Figures [3.17](#) and [3.18](#) below. All the vowels shown below have long counterparts, which are not depicted on these vowel quadrilaterals. Minimal and near-minimal pairs and quadruplets for vowel length and nasality likewise appear below in Table [3.8](#). The cells for nasal mid vowels have been left blank, since Mandan does not have underlying nasal mid vowels nor does it permit nasal spreading onto mid vowels. This restriction against nasal mid vowels is shared by many other Siouan languages and is thought to be a holdover from Proto-Siouan, though [Rood \(1983: 27\)](#) posits that Pre-Proto-Siouan could have had nasal mid vowels, which later merged with an oral vowel later in the development of the language.

We see idealized realizations of Mandan vowels in Figures [3.17](#) and [3.18](#) below. Vowels do not vary significantly in quality based on position within a particular syllable (i.e., in an open syllable versus a closed syllable), nor when in the environment of a stressed syllable. In this respect, the production of Mandan vowels is quite consistent. The examples below reflect the length and nasality distinctions that exist in Mandan vowels by showing minimal and near-minimal pairs.

3 Phonetics and phonology

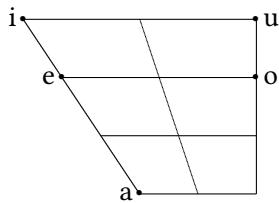


Figure 3.17: Mandan oral vowels

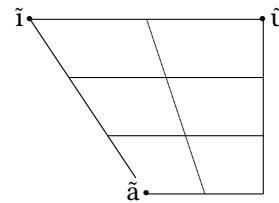


Figure 3.18: Mandan nasal vowels

In Table 3.8 below, we see examples of the phonemic vowels found in Mandan. These monophthongs have no restriction preventing them from appearing in any kind of syllable (i.e., open or closed) or position within a word. The one restriction placed upon the distribution of vowels in Mandan is that there can be no VV sequences: i.e., hiatus is forbidden in Mandan. To my understanding, there have been no phonetic studies on Mandan vowel quality to date. As such, there is room to investigate the impressionistic observations discussed here regarding the invariability of vowel quality and the lack of allophony in future work on Mandan.

Table 3.8: Contrastive vowel qualities

	Oral Short	Oral Long	Nasal Short	Nasal Long
a	<i>raké'he</i> [ⁿ da.ke?.he] 'be angry with'	<i>ráakana</i> [ⁿ da:kānā] 'hail'	<i>naké</i> [nā.ke] 'breechcloth'	<i>náake</i> ['nā:.ke] 'be alive'
e	<i>éreh</i> ['e.reh] 'want'	<i>réeh</i> [ⁿ de:h] 'go there'	—	—
i	<i>sí</i> ['si] 'foot'	<i>síi</i> ['si:] 'yellow'	<i>síh</i> ['sīh] 'be strong'	<i>síj</i> ['sī:] 'tallow'
o	<i>kók</i> ['kok] 'pronghorn'	<i>kóo</i> [ko:] 'squash'	—	—
u	<i>húpinih</i> ['hu.p̥iñih] 'soup'	<i>húu</i> ['hu:] 'bone'	<i>hú</i> ['hū] 'many'	<i>húy</i> ['hū:] 'yes'

3.2 Vowels

3.2.2 Diphthongs

In the description of monophthongs in Mandan above, I claim that VV sequences in Mandan are illicit. The purpose of the following subsection is to examine whether the aforementioned observation holds.

Mandan has no native lexical items containing a diphthong, and in cases where two vowels would otherwise come into contact due to compounding or affixation, there is some epenthetic process to prevent hiatus (see further discussion of hiatus resolution in §3.6.1). The sole exception to this restriction against diphthongs in the entire corpus is the word *háu* ['hau] 'hello, yes.'

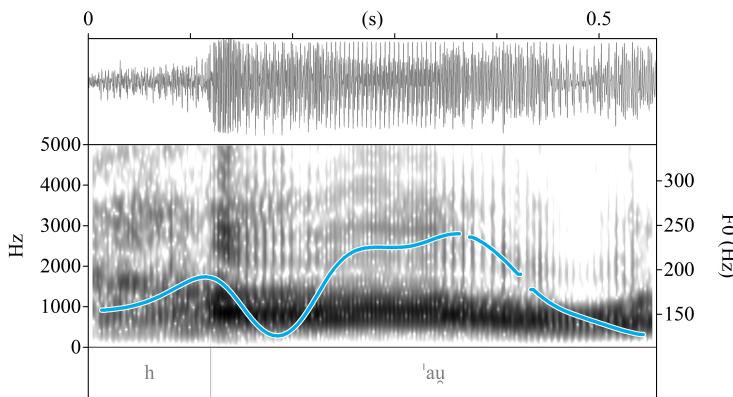


Figure 3.19: Diphthong /au/ in *háu* (OS)

This word is not native to Mandan, and it is found in many other languages of the Plains.¹⁴ No diphthong is otherwise permitted in Mandan, so the acceptability of this diphthong is due to either its status as a loan word borrowed wholesale or its status as an interjection. With respect to the latter, it is typologically common for interjections to have anomalous phonology or morphology (Ameka 1992: 105),

¹⁴The use of this item is not restricted to Plains peoples, but has been attested in the Great Lakes region as early as 1636, as the French Jesuit missionary and martyr Saint Jean de Brébeuf notes that the Wyandot (also known as the Huron or the Wendat, an Iroquoian-speaking people who historically occupied the land on the northern shores of Lake Ontario in what is now Canada) use this interjection to express approval or affirmation, as well as to punctuate that a speaker is through speaking or to affirm that one has heard the speaker finish speaking (Axtell 1981: 146). The former is identical to how it is used in Mandan, though it is not clear that this term originated in Wyandot either, as that language likewise has no diphthongs (Julian 2010: 325).

3 Phonetics and phonology

and it is for this reason that *háu* can have two differing vowels in a syllable nucleus while other lexical items cannot.

3.2.3 Dorsey's Law excrescent vowels

There have been vowels in superscript represented in phonetic notation throughout this work. These vowels represent excrescent vowels due to Dorsey's Law. Dorsey's Law inserts a copy vowel between two consonants. This phenomenon was introduced as a phonological rule in (1) from Chapter 1, which is reproduced below. In Mandan, this behavior is seen whenever a cluster has a sonorant as its second element.

(9) **Dorsey's Law**

$/CRV_1/ \rightarrow [CV_1RV_1]$

Insert a copy of the following vowel between a consonant-sonorant cluster.

For (10a) through (10e), we have simplex words with an excrescent vowel that shares certain features with a following vowel. For example, the data in (10a), /wrã/ 'tree, wood', undergoes nasal harmony and then an intrusive vowel interrupts the cluster that contains a sonorant, yielding [m̃ãnã]. This vowel is not syllabic: i.e, not *[mã.nã]. For further elaboration on how these vowels in Mandan are not syllabic, see §3.6.4.

The data below show that this excrescent vowel is triggered whenever the conditions are created where a consonant cluster has a sonorant as its second element. This intrusive vowel appears both within a lexical root as well as when enclitics are added, as seen in (10h), where a Dorsey's Law vowel occurs both within the lexical root /srãh/ 'leave' and the cluster created with the same-subject switch reference marker /-r̃i/ encliticizes onto the stem. Dorsey's Law vowels are produced within a root and across affix and enclitic boundaries. However, the data in (10i) through (10k) show that no intrusive vowels appear across a word boundary in the case of compounds.

(10) Dorsey's Law vowels in Mandan

- a. /wrã/ → ['m̃ãnã] 'tree, wood'
- b. /wraʔ/ → ['w̃a:raʔ] 'fire'
- c. /ʃruk/ → ['ʃ̃ruk] 'be wise, well-behaved'
- d. /ʃre:k/ → ['ʃ̃re:k] 'warhoop'
- e. /paxru:k/ → [pa.'x̃ru:k] 'corn silk'
- f. /ra-rE:h=r̃i=t=oʔʃ/ → ['ñda.'ra:h̃i:ñi.toʔʃ] 'you all went there'

3.2 Vowels

- g. /kʃāt=řā/ → ['kʃā.t̄ānā] 'watch out!'
- h. /ro.ra.ru-řāh=ři/ → [n̄do.'ra.ru.s̄ānā.h̄iňi] 'you leave us and...'
- i. /suk#ruwā?k/ → ['suk.nū.mā?k] 'young man, boy'
- j. /w̄i-hāp#wā?k/ → [m̄i.'hāp.mā?k] 'today'
- k. /i:h#wr̄i/ → [i:h.m̄iňi] 'saliva'

Hall (2006: 388) takes a look at the typology of excrescent vowels and argues that excrescent vowels behave very differently from epenthetic vowels in that excrescent vowels are extrametrical and are restricted to the gestural layer without adding an additional segment to the surface representation. The phasing of tautosyllabic consonants is altered slightly to increase perceptibility of the constituent consonants in a cluster (Silverman 1995, Wright 1996, Chitoran et al. 2002). This behavior differs from that of epenthesis, which is phonological in nature and serves to repair an illicit sequence of segments.

In languages featuring Dorsey's Law vowels, speakers are sometimes aware of the intrusive vowels. Other Siouan languages that have Dorsey's Law vowels reflect these sounds differently in their orthographies.

- (11) Orthographic treatment of Dorsey's Law vowels in other Siouan Languages
- a. *waglē* [Lakota]
[wa.'g^ele] 'I am going back' (Ullrich 2011: 122)
 - b. *hakewe* [Hoocąk]
[ha.'k^ewe] 'six' (Miner 1979: 26)

Lakota speakers routinely produce Dorsey's Law vowels when speaking, but speakers are not typically aware of this fact (Mirzayan p.c.). The most widely used orthography for Lakota and Dakota used in Ullrich's (2011) dictionary follows on the tendency of earlier orthographies such as that used in Boas & Deloria's (1941) grammar of the Dakota language to not transcribe the intrusive vowel.¹⁵ In Hoocąk, speakers generally are aware of these copy vowels, and this fact is reflected in the orthography used by the Wisconsin Hoocąk (Lundquist p.c.).

Mandan speakers appear to uniformly be aware of these vowels, as we can look at orthographies used by native speakers and see that we do not have surface clusters involving sonorants, but a sequence of graphemes with vowel written

¹⁵Boas & Deloria (1941: 5) do note that certain clusters contain a weak copy of the following vowel, and this intrusive vowel is typically represented by a period between the consonants in their orthography: e.g., ⟨g.li⟩ [ḡ.li] 'to have come back here.'

3 Phonetics and phonology

between a consonant and a sonorant. We can see this in the data below, which are taken from textbooks created by L1 speakers for use in classrooms around the Fort Berthold Reservation. Both examples below involve a word that has a Dorsey's Law vowel. While these excrescent vowels play no role in stress assignment and are shorter than phonemic short vowels, these vowel sounds are still both perceptible and salient for speakers, who consistently transcribe them in home orthographies, as shown below.

- (12) Vowel excrescence in *minís* /wr̩ís/ ['m̩n̩ís] 'horse'
 - a. ⟨ma-nees⟩ (Benson 2000: 28)
 - b. ⟨meníss⟩ (Little Owl & Rhod 1992: 4)
- (13) Vowel excrescence in *húpinih(e)* /hupr̩ih=E/ ['hu.p̩níh~'hu.p̩ní.he] 'soup'
 - a. ⟨who pe ne hea⟩ ['hu.p̩ní.he] (Benson 1999: 2)
 - b. ⟨húpi'ni⟩ ['hu.p̩níh] (Little Owl & Rhod 1992: 23)

The Dorsey's Law vowels in Mandan are more centralized than their phonemic counterparts, so the production of these vowels varies between utterances of particular tokens. Some speakers more strongly centralize their Dorsey's Law vowels, which has led some researchers and learners to transcribe these sounds as [a~ə]: e.g., ⟨manís⟩ for 'horse' (Park p.c.).

This variability in the realization of Dorsey's Law vowels has led to inconsistencies in past transcriptions of Mandan. Hall (2006: 391) notes that excrescent vowels typologically have a highly variable duration and the quality of these vowels is influenced by a nearby vowel or consonant. These factors differ from the typological behavior of epenthetic vowels, whose phonetic properties are more predictable. Furthermore, these excrescent vowels are not visible to phonological processes like syllabification and stress assignment. The blindness of phonological processes to these vowels demonstrates their extraphonologicality, which is addressed further in §3.6.4.

3.3 Orthography

The orthography used throughout this book largely follows the orthography used in Kasak (2014a), which is adapted from the orthography used by the Nu'eta Language Initiative after a discussion between me and Corey Spotted Bear in Twin Buttes in the spring of 2016. This orthography differs from those used in Hollow's (1970) dictionary and Hollow et al.'s (1976) textbook, as well as from

3.3 Orthography

Mixco (1997a,b). Other orthographies exist for Mandan, such as home orthographies used by speakers to record their own language or share it with others. Previous Mandan teachers in Twin Buttes or New Town have also employed their own orthographies. Efforts to promote a consensus Mandan orthography on the Fort Berthold Indian Reservation are ongoing.

The graphic representation of Mandan utilized here is ultimately a mix of Americanist and English-oriented notation. Unlike Hollow (1970) or Mixco (1997a), the orthography herein is not phonemic, nor is there a one-to-one relationship between phones and graphemes. Previous orthographies were tailor made to reveal as much about the underlying morphology and phonology as possible, such as Hollow's (1970) dictionary recording entries with assumed underlying forms, which are not immediately useful to learners if they do not read the chapter of his dictionary on how to convert the underlying representation into a surface one. The orthography used herein represents the surface form of each word, given that being able to immediately say a word is of the highest priority to heritage learners and community members. A guide on how to read the present orthography is summarized below, with the orthographic form depicted in angled brackets, ⟨⟩, and the phonetic form depicted in square brackets, [].

(14) Overview of Mandan orthography

- Vowel length is marked with digraphs: e.g., /a/ is ⟨a⟩, while /a:/ is ⟨aa⟩.
- The postalveolar fricative /ʃ/ is written as the digraph ⟨sh⟩.
- The nasalized allophones of /w/ and /r/ are written as ⟨m⟩ and ⟨n⟩, respectively, and the following vowel is assumed to be nasal unless otherwise stated: e.g., *maná* is [m̥á:nā] and not *[m̥á:na].
- Word-initial [n̥d] for /r/ is written as ⟨r⟩: e.g., *ráahtha* for [n̥da:.hta] 'go.'
- Nasal vowels not preceded by ⟨m⟩ or ⟨n⟩ are marked by an ogonek: e.g., [ā:we] 'all' is ⟨ā:we⟩, but [mā:nā] 'winter, year' is ⟨máana⟩.
- The glottal stop /ʔ/ is represented with an apostrophe: i.e., ⟨'⟩.
- Remaining consonants are equivalent to the IPA: e.g., /x/ is ⟨x⟩, /s/ is ⟨s⟩, etc.
- An apostrophe appears between ⟨s⟩ and ⟨h⟩ to distinguish between ⟨sh⟩ as /ʃ/ e.g., *tashká'sha?* [ta.'ʃka?sa] 'how are you?' and ⟨s'h⟩ as the cluster /s.h/ (e.g., *kapús'here'sh* [ka.'pus.h'e'reʃ] 'he made it streaked'.¹⁶

¹⁶A reviewer raises the issue of possible ambiguity that can be introduced by the convention of using an apostrophe to indicate a /sh/ cluster versus ⟨sh⟩ /ʃ/ for the postalveolar fricative. Different individuals have differing conventions on how to indicate this particular cluster, but I employ this convention throughout the present work nonetheless. Other Mandan individuals

3 Phonetics and phonology

- An acute accent marks primary stress; for stressed long vowels, the acute accent is placed on the first vowel in the digraph: e.g., *inák* [i.'nák] ‘again’ and *áakitaa* ['a:ki.ta:] ‘above.’
- The underlying ablaut vowel is written as /E/ in underlying representations or in dictionary entries but is written with its surface form in the orthography: e.g., /rE:h=tə/ ‘go!’ is *ráahtha*, but /rE:h=o?ʃ/ ‘he goes there’ is *réeho'sh*. The default value of /E/ is [e], but it can become [aa] if triggered by any of the conditions discussed in §3.5.3.

Throughout this work, two different orthographies may be used in examples relating to underlying form: the Mandan orthography above and the IPA. IPA will only be used when in the context of explanations of phonological and phonetic matters. In glossed examples, underlying representation of lexical items will be given in Mandan orthography.

This orthography is summarized in the table below:

Table 3.9: Summary of orthographic conventions

Consonants													
IPA	p	t	k	?	s	f	x	h	w	m	r	ⁿd	n
Orth.	p	t	k	'	s	sh	x	h	w	m	r	r	n
Vowels													
IPA	a	a:	ã	a:	e	e:	i	i:	ĩ	í:	o	o:	u
Orth.	a	aa	ã	aq	e	ee	i	ii	ĩ	íi	o	oo	u
											u:	uu	ü
											ü:	uu:	ü:

3.4 Phonotactics

This section details the structure of possible syllables in Mandan.

3.4.1 Consonant clusters

Mandan, like many Siouan languages, allows for CC consonant clusters. Hollow (1970: 16) states that within a root or affix, there can be at most one consonant cluster. Exceptions to this generalization are compounds or words that were compounds historically, but are no longer considered compounds for modern speakers. Observed data from the corpus show this generalization to be true.

or organizations have differing conventions for writing their language, and I wish to iterate that I do not claim that the orthography I use here is the only one that should be used.

3.4 Phonotactics

In his grammar, Hollow (1970: 17) lists the possible underlying consonant clusters attested in his data. These possible clusters appear in Table 3.10 below. Given that Hollow (1970) records all lexical items in underlying notation, the data in Table 3.10 do not capture the full range of consonant clusters found in the surface forms of Mandan words in the corpus. Furthermore, Hollow does not include the glottal stop in his description of consonant clusters, even though there are numerous words he posits having underlying /?C/ clusters, where /C/ is any consonant. Another issue with the above inventory of possible clusters is that it excludes any clusters formed due to some morphological operation: i.e., affixation, compounding, and incorporation. Given that noun-noun, noun-verb, and verb-verb compounds are common in Mandan, the productivity of this process inevitably yields environments where a wider range of consonants come into contact and can form clusters.

Table 3.10: Underlying consonant clusters given in Hollow (1970: 17)

$C_1 \backslash C_2$	p	t	k	s	ʃ	x	h	w	r
p	—	pt	pk	ps	pʃ	px	—	—	pr
t	—	—	tk	—	—	—	—	—	tr
k	—	kt	—	ks	kʃ	kx	—	kw	kɾ
s	—	st	sk	—	—	—	—	—	sr
ʃ	—	ʃt	ʃk	—	—	—	—	—	ʃr
x	—	xt	xk	—	—	—	—	xw	xɾ
h	—	—	—	—	—	—	—	—	hɾ
w	—	—	—	—	—	—	—	—	wɾ
r	—	—	—	—	—	—	rh	—	—

Looking just at surface consonant clusters, those shown below are attested in the corpus. This distribution includes both phonemic and allophonic instances of the consonants discussed in §3.1. An asterisk indicates that this cluster is only attested in morphologically complex conditions: i.e., affixation, compounding, or incorporation.

3 Phonetics and phonology

Table 3.11: Surface consonant clusters

$C_1 \backslash C_2$	p	t	k	?	s	ʃ	x	h	w	m	r	n
p	—	pt	pk	—	ps	pʃ	px	ph*	pw*	pm*	pr*	pn*
t	tp*	—	tk	—	ts*	tʃ*	tx	th*	tw*	tm*	tr*	tn*
k	kp*	kt	—	—	ks	kʃ	kx	kh*	kw*	km*	kr*	kn*
?	?p	?t	?k	—	?s	?ʃ	?x	?h	?w*	?m*	?r	?n
s	sp*	st	sk	—	—	sʃ*	sx*	sh*	sw*	sm*	sr*	sn*
ʃ	ʃp*	ʃt*	ʃk	—	ʃs*	—	ʃx*	ʃh*	ʃw*	ʃm*	ʃr*	ʃn*
x	xp	xt	xk	—	xs*	xʃ*	—	xh*	xw*	xm*	xr*	xn*
h	hp	ht*	hk	—	hs*	hʃ*	hx*	—	hw*	hm*	hr*	hn*
w	—	—	—	—	—	—	—	—	—	—	wr	—
m	—	—	—	—	—	—	—	—	—	—	—	mn
r	—	—	—	—	—	—	—	—	—	—	—	—
n	—	—	—	—	—	—	—	—	—	—	—	—

We can see a much wider range of attested clusters above than in Table 3.11 from Hollow (1970). The large discrepancy between the Tables 3.10 and 3.11 is due to the fact that there are a number of clusters attested in Hollow's own dictionary that are not reflected in his original description of possible consonant clusters, along with Hollow's focus only on underlying clusters rather than surface forms. Three initial phonotactic restrictions in Mandan can be derived from Table 3.11:

(15) General phonotactic restrictions

- No $[C_i C_i]$ sequences are permitted.
- No cluster may have a glottal stop as its second element.
- No cluster may have a sonorant as its initial element except for /wr/.¹⁷

The first restriction in (15) seems motivated by a dispreference for surface geminates or pseudo-geminates. This phonotactic restriction also a motivating factor for why /tt/ or /kk/ clusters that arise through morphological processes involve lenition of the initial element of the cluster: i.e., /tt/ becomes [st] and /kk/ becomes [hk]. The process of surface $/C_i C_i/$ dissimilation is explained further in §3.5.1.

¹⁷See §3.2.3 and §3.6.4.4.1 for further discussion of how these clusters are interrupted by excrescent vowels due to Dorsey's Law, but they are still tautosyllabic. Note that both [wr] and [mn] are derived from /wr/.

3.4 Phonotactics

With respect to the second restriction, there are no root-initial glottal stops in Mandan, so there is no way for a glottal stop to appear as the second element of a cluster through affixation or compounding. Underlyin Glottal stops can only appear in the coda or epenthetically between vowels to prevent hiatus, but under certain conditions, the vowel preceding the glottal stop can syncopate and cause the glottal stop to metathesize with the following vowel, turning what was once an onset into a coda. This behavior is described in greater detail in §3.6.2.1.

The final restriction is due to the fact there are no sonorant codas in any Mandan root or affix. Historically, Proto-Siouan did not have any sonorant codas (Rankin et al. 1998). Reconstructed roots have a basic CV(:) syllable structure, where sonorants can only appear as onsets. Mandan has inherited this same distribution of sonorants. Unlike other Siouan languages like Crow (Graczyk 2007) or Lakota (Ingham 2003), Mandan did not innovate any sonorant codas. This phonotactic restriction originates in the diachrony and there is no synchronic process to avoid sonorant-obstruent clusters.

Examples of attested consonant clusters appear below on Tables 3.12 and 3.13.

3 Phonetics and phonology

Table 3.12: Examples of stop-initial clusters

	Pronunciation	Orthography	Gloss
pt	[pt̥i:.re]	<i>pt̥i̥re</i>	‘buffalo’
pk	[pke]	<i>pké</i>	‘snapping turtle’
ps	[psā:.ka]	<i>psāqka</i>	‘frog’
pʃ	[pʃā:.se]	<i>psháqshe</i>	‘sweetgrass’
px	[pxi?ʃ]	<i>pxi̥'sh</i>	‘he sneezes’
ph	[t̥o:p.ha]	<i>tópha</i>	‘four times’
pw	[ki.ʃop.wa.h̥e?ʃ]	<i>kishópwahere'sh</i>	‘I rounded them up’
pm	[m̥i.ʃáp.mā?k]	<i>mihápma'k</i>	‘today’
pr	[ki.ʃop.ra.h̥e?ʃ]	<i>kishóprahere'sh</i>	‘you rounded them up’
pn	[ki.ʃop.nū.h̥e?ʃ]	<i>kishópnuhere'sh</i>	‘we rounded them up’
tp	[ko.'ret.pa.ʃa.häkt]	<i>korétpashahqkt</i>	‘northward’
tk	[t̥kuʃ]	<i>tkúsh</i>	‘true’
ts	[wa?ts]	<i>wá'is</i>	‘my father’
tʃ	[h̥i'rut.ʃo.te]	<i>hirútshote</i>	‘grey fox’
tx	[wa:?'at.xihs]	<i>wá'a'txihs</i>	‘government, the president’
th	[o.ka.pat.h̥e?e]	<i>ókapathere</i>	‘to plant’
tw	[o.ka.pat.wa.h̥e?ʃ]	<i>ókapatwahere'sh</i>	‘I planted it’
tm	[o.ka.pat.mā.h̥e?ʃ]	<i>ókapatmahere'sh</i>	‘he made me plant it’
tr	[o.ka.pat.ra.h̥e?ʃ]	<i>ókapatrahere'sh</i>	‘you planted it’
tn	[o.ka.pat.nū.h̥e?ʃ]	<i>ókapatnihere'sh</i>	‘he made you plant it’
kp	[w̥ro:k.pa]	<i>Weróokpa</i>	‘Buffalo Bull Head’ (name)
kt	[kta:.ho?ʃ]	<i>ktáaho'sh</i>	‘he is frozen’
ks	[ksek]	<i>ksék</i>	‘crooked’
kʃ	[kʃi:kʃe]	<i>kshíjkshe</i>	‘lightning’
kx	[kxaa.kxe?ʃ]	<i>kxáakxe'sh</i>	‘it is spotted’
kh	[suk.h̥e?e]	<i>súkhhere</i>	‘to make him exit’
kw	[suk.wa.h̥e?e?ʃ]	<i>súkwahere'sh</i>	‘I made him exit’
km	[suk.m̥i:.he]	<i>súkmiihe</i>	‘young woman, girl’
kr	[suk.ra.h̥e?e?ʃ]	<i>súkrahere'sh</i>	‘I made him exit’
kn	[suk.nū.mā?k]	<i>súknuma'k</i>	‘young man, boy’

3.4 Phonotactics

	Pronunciation	Orthography	Gloss
ʔp	[mūʔpa]	<i>mú'pa</i>	'with me'
ʔt	[ãʔt]	<i>q'ít</i>	'that (far away)'
ʔk	[nū. māʔk]	<i>numá'k</i>	'man, person'
ʔs	[māʔs]	<i>ma's</i>	'spoon'
ʔʃ	[hūʔʃ]	<i>hú'ʃh</i>	'there are many'
ʔx	[tuʔ.xeʔ.re]	<i>tú'xere're</i>	'there might be some'
ʔh	[mīʔ.he]	<i>mí'he</i>	'blanket, shawl, robe'
ʔr	[ʃiʔ.re]	<i>shí're</i>	'it is good'
ʔn	[ʃiʔ.nā]	<i>shí'na?</i>	'is it good?'

Table 3.13: Examples of fricative-initial clusters

Cluster	Pronunciation	Orthography	Gloss
sp	[pu.'spu.se]	<i>puspúse</i>	'kitten'
st	[i.'stā.mīʔ]	<i>istámi'</i>	'eye'
sk	[ra.'ski:.koʔʃ]	<i>raskíiko'sh</i>	'he squeezes it with teeth'
sf	[mā:.míks.ʃkaʔ.ník]	<i>máamikssha'nik</i>	'but there's no such thing'
sx	[ki.ki.ras.xteʔʃ]	<i>kikírasxte'sh</i>	'she really liked him'
sh	[ka.'pus.hé'reʔʃ]	<i>kapús'here'sh</i>	'he made him write'
sw	[mín̩.nís.we:.rut]	<i>minísweerut</i>	'dog'
sm	[ka.'pus.má.hé'reʔʃ]	<i>kapúsmahere'sh</i>	'he made me write'
sr	[ka.'pus.ra.hé'reʔʃ]	<i>kapúsrahere'sh</i>	'you made him write'
sn	[ka.'pus.ní.hé'reʔʃ]	<i>kapúsnihere'sh</i>	'he made you write'
ʃp	[i.'ʃpa.ri.ʔo:.ri]	<i>ishpári'oori</i>	'Mexican' (< Fr. <i>espagnol</i>)
ʃt	[o.p ^a raʃt]	<i>óparasht</i>	'on a high ridge'
ʃk	[ta.ʃkaʔ.ʃa]	<i>tashká'sha?</i>	'how is it?'
ʃs	[pa.'wéʃs]	<i>pawéshs</i>	'the one he cut'
ʃx	[ʃi.náʃ.xte.ro:.má.koʔʃ]	<i>shíxteroomako'sh</i>	'he was really good-looking'
ʃh	[pa.'wéʃ.hé're.ki]	<i>pawéshhereki!</i>	'let him cut it!'
ʃw	[pa.'wéʃ.wa.hé'reʔʃ]	<i>pawéshwahere'sh</i>	'I made him cut it'
ʃm	[pa.'wéʃ.má.hé'reʔʃ]	<i>pawéshmahere'sh</i>	'He made me cut it'
ʃr	[pa.'wéʃ.ra.hé'reʔʃ]	<i>pawéshrahere'sh</i>	'you made him cut it'
ʃn	[pa.'wéʃ.ní.hé'reʔʃ]	<i>pawéshrahere'sh</i>	'he made you cut it'

3 Phonetics and phonology

Cluster	Pronunciation	Orthography	Gloss
xp	['mã.xpe]	<i>maxpé</i>	‘nine’
xt	['xte?ʃ]	<i>xté'sh</i>	‘it is big’
xk	['xkā.ho?re]	<i>xkáho're</i>	‘she moves away’
xs	['du.ptu.xso?ʃ]	<i>ruptúxso'sh</i>	‘he made it fine’
xʃ	['pax.so.wok]	<i>páxshowok</i>	‘bowl’
xh	['m̥níx.h̥e.re.k̥e.re?ʃ]	<i>miníxherekere'sh</i>	‘he plays with them’
xw	['m̥níx.wa.h̥e.re?ʃ]	<i>miníxwahere'sh</i>	‘I play with him’
xm	['m̥níx.mã.h̥e.re?ʃ]	<i>miníxmahere'sh</i>	‘He plays with me’
xr	['m̥níx.ra.h̥e.re?ʃ]	<i>miníxrahere'sh</i>	‘You play with him’
xn	['m̥níx.nã.h̥e.re?ʃ]	<i>miníxnihere'sh</i>	‘He plays with you’
hp	['i.hp ^a rak]	<i>íhparak</i>	‘belt’
ht	['n̥da:.hta]	<i>ráahta!</i>	‘go there!’
hk	['ʃi.hka]	<i>shíhka</i>	‘dwarf, small dog’
hs	['m̥i:hs]	<i>míhs</i>	‘the woman’
hʃ	[ki.'xū:.hʃa]	<i>kixúyhsha</i>	‘five of them’
hx	['xi.hxte?ʃ]	<i>xíhxte'sh</i>	‘he is really old’
hw	['n̥de:h.wa.h̥e.re?ʃ]	<i>réehwahere'sh</i>	‘I put it there’
hm	['n̥de:h.mã.h̥e.re?ʃ]	<i>réehmahere'sh</i>	‘He told me to go’
hr	['n̥de:h.ra.h̥e.re?ʃ]	<i>réehrahere'sh</i>	‘You put it there’
hn	['n̥de:h.nã.h̥e.re?ʃ]	<i>réehnihere'sh</i>	‘He told you to go’

As both Tables 3.12 and 3.13 demonstrate, there is a large variety of permitted consonant clusters in Mandan. What has not been addressed so far is the issue of triconsonantal clusters. Neither Hollow (1970: 15) nor Mixco (1997a: 9) outright state that CCC clusters are not permitted, but in Hollow’s dictionary, there are several instances where a CC sequence appears in what should be a CCC, as the examples below demonstrate.

(16) Lack of CCC clusters in Hollow (1970)

- ⟨šýkšuk⟩ → [ʃút.kʃuk]
 /shút/ ‘tail’ + /kshuk/ ‘narrow’
 ‘muskrat’
- ⟨mátkšuks⟩ → ['mã:.tah.kʃuks]
 /wáqtah/ ‘river’ + /kshuk/ ‘narrow’ + /s/ DEF
 ‘Little Missouri River’

3.4 Phonotactics

- c. $\langle \text{pasáxte} \rangle \rightarrow [\text{pa.} \cdot \text{sáh.xte}]$
 /pasáh/ ‘creek’ + /xte/ ‘big’
 ‘Cannonball River’

In his own recordings, the deleted first consonant of these clusters is pronounced, though the first consonant may be unreleased in fast speech. Given that CCC clusters are entirely due to compounding, it is difficult find the full extent to whether there are any illicit CCC clusters, or whether one can simply combine any viable CC cluster after any coda.

3.4.2 Syllable structure

Hollow (1970: 15) and Coberly (1979: 21) both state that the Mandan syllable has the following shape:

- (17) Syllable structure per Hollow (1970: 15)
 (C)(C)V(C)

A syllable under this analysis can have an onset with no more than two consonants and a coda with no more than one. Neither Hollow nor Coberly record vowel length, so their analysis of Mandan syllable structure does not take vowel length into account.

Carter (1983) tries to reconcile the syllable structure in (17) above with the fact that certain lexical items in Hollow’s dictionary have underlying forms that end in /ʔ/ followed by a consonant. For example, Hollow (1970: 246) states that the underlying form of ‘to pick at, tamper with’ is $\langle \text{táʔx} \rangle$. Carter cites examples of words like these to suggest that Proto-Siouan also had root that had glottal stop codas. Much later after the publication of his article on root-final consonant clusters in Mandan and following subsequent fieldwork, Carter states that there is an issue with words that Hollow transcribes as having underlying /r/ codas: these words have no [r] articulated when said in isolation, but when additional morphology is added to such words, the supposed /r/ appears on the surface. Carter (1991a) points out that these words all happen to feature long vowels or have a coda glottal stop. As such, the [r] that appears between the root and subsequent morphology is not actually underlying. Rather, it is a linking segment that appears between long vowels or coda glottal stops (Carter 1991a: 487).

- (18) Carter’s [r] Insertion Rule
 $\emptyset \rightarrow [r] / V: \underline{V}$
 Add an epenthetic [r] between a long vowel and a short vowel.

3 Phonetics and phonology

Glottal stops seem to pattern with long vowels in two different ways. Firstly, they both trigger this linking [r] when additional morphological material appears to the right of them. This process is described in §3.6.1.2. Secondly, both mark a syllable as heavy and draw primary stress. Mandan features left-aligned iambic footing for primary stress: i.e., primary stress defaults to the second syllable, but can appear on the first syllable if the first syllable is heavy. An initial syllable with a coda glottal stop receives primary stress over one without a coda glottal in the same way a syllable with a long vowel does. Stress is explained further in §3.6.4.

Given this information, we can revise Hollow (1970) and Coberly's (1979) description of Mandan syllable structure

(19) Revised syllable structure for Mandan per Carter (1991a: 485)

(C)(C)V(?)^V(C)

This revised structure accounts for the fact that Mandan does not permit a glottal stop coda in a syllable containing a long vowel. If both long vowels and coda glottal stops are considered heavy (i.e., add a mora to a syllable), the motivating factor to account for the lack of VV?-type syllables is that such a structure would be superheavy. Having a trimoraic syllable is not permitted in Mandan; a syllable may contain a long vowel or a coda glottal stop, but never both.

Aside from the stipulation regarding what the nucleus of a syllable in Mandan may look like, the structure above in (19) does not alter previous analyses of how onsets and codas may be formed. What has changed is what counts as a syllable nucleus in Mandan phonology. Instead of being treated as a consonant, a coda glottal fills the same slot as a vowel in the syllable skeletal structure: i.e., it creates a bimoraic syllable in the same way a long vowel does.

Below, we can see examples of the different attested iterations of the syllable structure in Mandan. Instead of being limited to a single consonant in the coda (excluding glottal stops), we see that all combinations of syllables with onsetless and simple onsets have a confirmed complex coda. There are words that allow for both a complex onset and complex coda, but they are always morphologically complex. No instance of a CCV?CC syllable has been found, and it is unlikely that such a combination exists due to the fact that roots containing a coda glottal are rare and none of them have complex onsets. This distribution of roots with coda /?/ therefore rules out CCV?CC by the lack of items that could possibly be combined to yield such a structure rather than being ruled out due to any phonotactic constraint.

3.4 Phonotactics

If we take the structure of the Mandan syllable in (19) into account, there is a wider range of possible syllable shapes in Mandan than the one originally suggested by Hollow (1970: 15). Carter's (1991a) analysis best fits the data, as Table 3.14 below illustrates, since each possible syllable type under this revised syllable schema is attested in the language.

Table 3.14: Possible syllables in Mandan

Syllable	Example	Orthography	Gloss
V	[i.?ahe]	i'ahe	'skin, shell'
VV	[o:]	óo	'there'
V?	[i?.tu]	i'tu	'to be born'
VC	[ük]	ük	'hand'
VVC	[o:t]	óot	'mix'
V?C	[ä?t]	ä't	'that (distal)'
VCC	[üks]	üks	'the hand'
VVCC	[a:ps]	áaps	'the leaf'
V?CC	[ü?st]	ü'st	'long ago'
CV	[mā.'to]	mató	'bear'
CVV	[ndo:]	róo	'here'
CV?	[kū?]	kú'	'give'
CVC	[kok]	kók	'pronghorn antelope'
CVVC	[mí:h]	míih	'woman'
CV?C	[ʃí?ʃ]	shí'sh	'it is good'
CVCC	[koks]	kóks	'the pronghorn antelope'
CVVCC	[mí:hs]	míhs	'the woman'
CV?CC	[ku?st]	kú'sht	'inside'
CCV	[psi.ro:.mā.ko?ʃ]	psíroomako'sh	'it was black'
CCVV	[pʃí:]	pshíi	'be flat, low'
CCV?	[xik.jka?.ník]	xíkshka'nik	'but it was bad'
CCVC	[xkek]	xkék	'star'
CCVVC	[skú:h]	skúyh	'be sweet'
CCV?C	[ʃke?ʃ]	shké'sh	'he jumps'
CCVCC	[xkeks]	xkéks	'the star'
CCVVCC	[ptú:st]	ptúist	'to the buffalo'

The presence of the forms above demonstrate that we require one final revision of what a syllable may look like in Mandan. While Hollow is correct in that a bare lexical stem will maximally have a simple coda, complex codas are possi-

3 Phonetics and phonology

ble given morphologically complex structures: e.g., *míih/s* /wíjh=s/ ‘the woman,’ where *míih* ‘woman’ is followed by the definite article =s, resulting in a coda cluster. As such, we must revise the possible structure of the Mandan syllable one final time, with said structure appearing below.

(20) Final revised structure of Mandan syllables

(C)(C)V(^V?)C)(C)

A syllable in Mandan can have at most two consonants in the onset, maximally two consonants in the coda, provided that no additional morphology adds . The nucleus of a Mandan syllable minimally contains one vocalic moraic component (i.e., a short vowel), though can maximally contain two (i.e., a long vowel or a coda glottal stop).

The previously seen data in (16) show that CCC clusters are possible in Mandan. However, such clusters will always be syllabified with the underlying morphological structure in mind. Compound words do not syllabify across word boundaries: e.g., a compound word /VC#CCVC/ will syllabify with the initial consonant forming the coda of the preceding syllable and the remaining two consonants in the cluster forming the onset of the following syllable: i.e., /CCC/ → [C.CC]. As such, syllabification of complex clusters can be used as a test for internal word boundaries in Mandan, though the presence of such clusters in the first place are always the result of the application of some morphological process like compounding or encliticization.

3.5 Word boundary-independent morpho-phonology

The vast majority of the study of Mandan has been spent translating texts and breaking down its morphology. Very little attention has been paid to the interaction between its morphology and its phonology. In looking at the morpho-phonological processes present in Mandan, we can divide all attested phenomena in this language into two categories: phenomena that are word boundary-independent (i.e., phenomena that occur regardless of whether they occur in the environment of a morphological word boundary) versus those that are word boundary-dependent (i.e., phenomena that only happen at a morphological word boundary). The data present here are descriptive in nature and is not intended to introduce a theoretical claim. As such, this section utilizes a rules-based account of these phenomena for the sake of parsimony.

The aim of this section is to describe the processes below and demonstrate that they are unaffected by morphological word boundaries. This lack of word

3.5 Word boundary-independent morpho-phonology

boundary-sensitivity is important to the case built in §3.6 and the overall case against a phonological motivation for affix ordering in Mandan.

3.5.1 Pseudo-geminate dissimilation

Mandan features numerous examples of consonant clusters, but $[C_iC_i]$ clusters are forbidden. Hollow (1970: 37) notes that instances of /tt/ clusters dissimilate to [st], but otherwise states that all other instances of $/C_iC_i/$ involve the deletion of the first consonant in the cluster to simplify potential

Both the processes of adding postverbal morphology to a word and compounding often creates environments where such clusters are underlyingly present. In examples (21) below, we see $/C_iC_i/$ environments involving stops. While (22) involve fricatives, each datum is accompanied by an example that does not feature a $/C_iC_i/$ environment to demonstrate the normal distribution of the obstruent and juxtapose how pseudo-geminiate dissimilation occurs for stops versus fricatives: i.e., stops lenite the first segment while fricatives delete the first segment.

- (21) $/C_iC_i/$ resolution \Rightarrow lenition
- a. *náthaa*
rat=haa
middle=LOC
'to be between two' (Hollow 1970: 170)
 - b. *manástaa*
wá-rat=taa
1s-middle=LOC
'I am in the middle' (Hollow 1970: 37)
 - c. *súknuma'k*
suk#ruwá'k
child#man
'boy' Hollow 1970: 220
 - d. *súhk̥eres*
suk=krE=s
child=3PL=DEF
'the chidren' (Hollow 1973a: 178)
 - e. *Warápepasqhs*
wrap(E)#pasáh=s
beaver#creek=DEF
'Beaver Creek' (Hollow 1973a: 67)

3 Phonetics and phonology

(22) /C_iC_i/ resolution ⇒ deletion

- a. *máataawerexs*
wáataa#wrex=s
clay#kettle=DEF
'the clay kettle' (Hollow 1973b: 266)
- b. *minís*
wriṣ=s
horse=DEF
'the horse' (Hollow 1973b: 251)
- c. *ísekanashoomaks*
i-sek=rash=oowąk=s
PV.INS-make=TYP=NARR=DEF
'that which he kind of made' (Hollow 1973a: 10)
- d. *éheenashka'nik*
e-hee=rash=shka'rik
PV-say=TYP=DISJ
'even though he said it' (Hollow 1973a: 41)
- e. *páxshowok*
pax#showok
dish#be.deep
'bowl' (Hollow 1970: 138)
- f. *páxte*
pax#xte
bowl#big
'dishpan' (Hollow 1973a: 52)
- g. *réeho'sh*
rEh=o'sh
go.there=IND.M
'he went there' (Hollow 1970: 175)
- h. *réeherek*
rEh#hrE=ak
go.there#CAUS=DS
'having put it on [himself]' (Hollow 1973a: 16)

Three patterns emerge in the data above. Firstly, there are no /C_iC_i/ clusters involving bilabial stops. Torres (2013a: 10) notes that /p/ does not occur in word-final position in the narrative she examines, and I can corroborate that /p/ is

3.5 Word boundary-independent morpho-phonology

indeed rare in word-final positions from my own personal experience and field-work. Mandan words with stem-final /p/ seem to vacillate between ending in [p] or with [pe] in the corpus, and this variability is not conditioned by any environment. Modern Mandan stems ending with /p/ often feature a final [e] when uttered in isolation, but when placed within the context of a sentence, both variants appear with no reported change in meaning. Below are some examples from the corpus that vary between forms ending with [p] and [pe].

- (23) Alternation between stem-final [p] and [pe] in nouns

- a. *Hípwara're*
hup(E)#wra'=E
shoe#fire=sv
'Fire Shoe' (name) (Hollow 1973a: 155)
- b. *Hípewara're*
hup(E)#wra'=E
shoe#fire=sv
'Fire Shoe' (name) (Hollow 1973a: 168)

- (24) Alternation between stem-final [p] and [pe] in verbs

- a. *máana'pe'sh*
waa-rä'p(E)=o'sh
UNSP-dance=IND.M
'he dances' (Hollow 1970: 167)
- b. *máana'po'sh*
waa-rä'p(E)=o'sh
UNSP-dance=IND.M
'he dances' (Hollow 1970: 167)

Since speakers seem to produce both forms without a change in meaning, one explanation is that there is a trend in Mandan that disfavors bilabial stop codas. Historically, the stem vowel complementizer /=E/ has likely been reanalyzed as part of the root for such words. With the passing of the last L1 speaker in 2016, there is no way to definitively rule out the possibility of such a cluster being possible, but in the entire corpus, no /pp/ cluster is attested. I posit that this lack of /pp/ clusters arises from language change rather than some synchronic phonological conspiracy to prevent such clusters, as all lexical stems in the corpus that end in /p/ have a variant that also ends in [pe]. Given time, it is possible that Man-

3 Phonetics and phonology

dan would have shifted to make word-final /p/ illicit, since instances of variants ending in [pe] are more common than those with just [p] in the corpus.¹⁸

The second pattern to emerge from (21) is that the other stops fricativize the initial element in the /C_iC_i/ cluster. Just as Hollow (1970: 37) describes, /tt/ clusters become [st]. However, Hollow does not notice that /kk/ clusters become [hk], as shown in (21d), though in Hollow (1973a), he does transcribe /kk/ clusters as [hk] in a plurality of cases. The third and final pattern that we see in (22b) through (22h) regarding the spellout of /C_iC_i/ is that in clusters where C_i is a fricative, the cluster is simplified to a singleton: i.e., /S_iS_i/ → [S_i], where S is any fricative.

Given these three patterns, we can make an overall observation regarding the realization of /C_iC_i/ clusters: the first element in such clusters undergoes lenition. The main distinction between the three patterns described above is that the first element in underlying stop clusters is spirantized, while the first element in underlying underlying fricative clusters are elided. Clearly, there is a conspiracy in Mandan to prevent pseudo-geminates. This conspiracy seems motivated by the Obligatory Contour Principle (OCP) in the sense of McCarthy (1986): i.e., certain adjacent identical elements are prohibited at the surface level. It is preferable to increase the sonority of the first element of a pseudo-geminate (e.g., through fricativizing or eliding it) than it is to have identical obstruents come into contact.

We can summarize instances of pseudo-geminate dissimilation by appealing to the rules below.

(25) Rules for pseudo-geminate dissimilation

a. /t/ Lenition Rule

/t/ → [s] / _t

In a /tt/ sequence, the first /t/ becomes [s].

b. /k/ Lenition Rule

/k/ → [h] / _k

In a /kk/ sequence, the first /k/ becomes [h].

c. Fricative Deletion Rule

/S_i/ → Ø / _S_i

When two identical fricatives form a cluster, the first one is deleted.

¹⁸This dispreference for word-final /p/ may be restricted to Nuu'etaa variety, as Maximilian (1839) does not show this same variation between stem-final /p/ and [pe] in the Ruptaa variety. There are insufficient data, however, to conclusively say if preference for adding the stem vowel /-E/ onto /p/-final stems was not also present in Ruptaa.

3.5 Word boundary-independent morpho-phonology

A restriction against $[C_i C_i]$ sequences alone is insufficient to account for this distribution of OCP-motivated behaviors, given that plosives-plosive and fricative-fricative pseudo-geminate clusters each have differing strategies for pseudo-gemination resolution. We know that $/T_1/$ clusters, where T is a plosive, become either [st] or [hk], depending on the identity of the second T .¹⁹ Furthermore, we know that $/S_1 S_1/$ clusters elide the first fricative to become $[S_1]$. Each of these three strategies relies on increasing the sonority of the initial element in the cluster, with stops becoming fricatives, and fricatives eliding since there are no corresponding voiceless sonorants to which they can lenite: e.g., /ss/ → [fs] is not a possible input-to-output relationship in Mandan. This lack of a viable segment to which an initial fricative can lenite is likely the motivation for deletion.

3.5.2 Initial sonorant fortition

Sonorants have already been discussed in §3.1.5, but there is an additional set of realizations for sonorants independent of the description above because Mandan sonorants are also sensitive to prosodic boundaries.

The sonorants in Mandan are the phonemes that have the highest degree of variability in terms of allophony. In §3.1.5, we saw that sonorants are sensitive to their position within a word or phrase: e.g., Hollow (1970) notes that /r/ is realized as a flap word-internally, but word-initially, it fortifies to a [n̩d] when followed by an oral vowel. The /r/ will never become a prenasalized stop when before a nasal vowel. This word-initial fortition pattern for /r/ is optionally mirrored in /w/, which can turn to [m̩b] at the left edge of a word when preceding an oral vowel, though [w] is much more common in recordings of speakers born in the twentieth century.

In each of the examples below, it is not possible for a prenasalized stop to appear anywhere other than word-initially. The data in (26a) and (27a) show that sonorants fortify word-initially when followed by an oral vowel, but in (26b) and

¹⁹There is no instance of a /pp/ cluster in the corpus, and there are no remaining L1 speakers from whom to seek judgments, so we cannot definitively say that /pp/ is illicit or that /pp/ clusters involve lenition of some time. However, the overall trend we see is that $[C_i C_i]$ is not permissible for any other obstruent, so we can infer that [pp] is likewise prohibited in surface representation. The question is whether the initial /p/ would lenite to [h] like we see in /kk/ → [hk] or to something else. Rankin et al. (2015) remark that /hC/ sequences in Proto-Missouri Valley Siouan originate from $/C_i C_i/$ sequences. The /k/ Lenition rule in Mandan is strikingly similar, and the /t/ Lenition differs only in that the first /t/ in a /tt/ sequence is not totally debuccalized. Sharing this process with Hidatsa and Crow to the exclusion of the rest of the Siouan family adds weight to Mandan being more closely related to Missouri Valley Siouan than to other branches of the Siouan language family.

3 Phonetics and phonology

(27b), sonorants remain sonorants intervocally. When a sonorant is followed by a nasal vowel, nasal harmony takes place according to the rules described in §3.6.3, as we see in (26c) and (27c).

(26) Word-initial fortition for /r/

- a. *raskápo'sh* [ⁿda.'ska.po?ʃ], *[ra.'ska.po?ʃ]
ra-skap=o'sh
INS.MTH-be.wet=IND.M
'he tasted it'
- b. *óraskapo'sh* ['o.ra.ska.po?ʃ], *[o.ⁿda.ska.po?ʃ]
o-ra-skap=o'sh
PV.IRR-INS.MTH-be.wet=IND.M
'he will taste it'
- c. *nuráskapo'sh* [nū.'ra.ska.po?ʃ], *[ⁿdū.'ra.ska.po?ʃ]
ru-ra-skap=o'sh
1A.PL-INS.MTH-be.wet=IND.M
'we tasted it'

(27) Word-initial fortition for /w/

- a. *wáarehe'sh* ['wa:.re.he?ʃ ~ ^mba:.re.he?ʃ]
waarehe=o'sh
understand=IND.M
'he understands it'
- b. *ówaarehe'sh* ['o.wa:.re.he?ʃ], *[o.^mba:.re.he?ʃ]
o-waarehe=o'sh
PV.IRR-understand=IND.M
'he will understand it'
- c. *mawáarehe'sh* [mā.'wa:.re.he?ʃ], *[^mbā.'wa:.re.he?ʃ]
wq-waarehe=o'sh
1s-understand=IND.M
'he understands me'

Nasal stops, however, are possible when a sonorant appears utterance-initially or when there is some intonational break, such as when a sonorant is the initial element in a right dislocated phrase, or part of a series of connected independent clauses as seen below. These cases of initial fortition can be seen throughout the corpus, as exemplified by the example from Lowie (1913) in (28).

3.5 Word boundary-independent morpho-phonology

- (28) Utterance-initial fortition for /r/ and /w/

<u>Néḥqk</u>	<i>nihúpo'sh,</i>	<u>néḥqk</u>
re=ḥqk	ṛj-hup=o'sh	re=ḥqk
DEM.PROX=PSNL.STND	2POSS-moccasin=IND.M	DEM.PROX=PSNL.STND
<i>nihúyshi'sh,</i>	<i>ínimashuto'sh,</i>	<i>manániho'sh,</i>
ṛj-hụyshi=o'sh	i-ẉj-ẉashut=o'sh	wa-ra-ṛj̄h=o'sh
2POSS-leggings=IND.M	PV.INS-2s-clothe=IND.M	UNSP-2A-wrap=IND.M
<u>maráraapinu'sh,</u>	<u>móorakaske'sh,</u>	
wa-ra-raapri=ṛu=o'sh	wa-o-ra-ka-skE=o'sh	
UNSP-2A-wear.around.neck=ANF=IND.M	UNSP-PV.IRR-2A-INS.FRCE-tie=IND.M	
<u>móorakiru'sh,</u>	<u>ní'takorashiipo'sh.</u>	
wa-o-ra-kru=o'sh	r'-j̄jtake#o-ra-shiip=o'sh	
UNSP-PV.IRR-2A-coil=IND.M	2POSS-forehead#PV.IRR-2A-be.rough=IND.M	
'These are your moccasins, these are your leggings, it's your shirt, it's your blanket, it's your necklace, it's your earring, it's your head ornament, they are your face-pendants.' (Lowie 1913: 358)		

In data obtained from the early twentieth century from Kennard (1936), Densmore (1923), and especially Lowie (1913) (i.e., from speakers born in the middle of the nineteenth century before the Reservation period), utterance-initial fortition is more common but still not entirely consistent. Data collected by Hollow (1970) and Trechter (2012a) show that utterance-initial fortition varies by speaker, but this fortition is less common overall to the point of being negligible in some speakers.

We can contrast utterance-initial fortition with word-initial fortition, where /r/ to [n̄d] is obligatory with /w/ to [m̄b] being optional and uncommon. This contrast in fortitions suggests a change had taken place from the nineteenth to the twentieth century with respect to how strictly these fortitions took place. A similar process can be seen in contemporary Hidatsa, where older sources state that /r/ and /w/ undergo identical fortitions to [n] and [m] after an intonational break (Boyle 2007:26, Park 2012:22), though my own fieldwork and that of Park note that speakers born after the middle part of the twentieth century spontaneously produce [n] and [w] as word-initial fortition or even at affix boundaries word-internally.²⁰ I have argued that Mandan and Hidatsa, along with Crow, are more

²⁰Lowie (1913: 183) remarks that Hidatsa speakers occasionally produce [β̄] for /w/ before /i/, which is something not otherwise observed in Mandan. Personal fieldwork that I have done corroborates that certain speakers from the Xóshga band of Hidatsa will produce a more approximant-like [β̄] to a simple [b] instead of /w/ at times, though there does not appear to be a specific conditioning environment.

3 Phonetics and phonology

closely genetically related to each other than to other Siouan languages (Kasak 2015), but it is unclear if this sonorant fortition is a feature inherited from a common ancestor or an innovation that was transmitted from one to another.²¹ Given that all speakers of Mandan for the past century have also been fluent in Hidatsa, and both groups had been bilingual by tradition for at least a century prior to the Reservation period, the directionality of such a feature is unclear. The more articulated types of fortition found in Mandan suggests that this areal feature was transmitted from Mandan to Hidatsa and Crow, but without older data, this position is conjectural.

What is not conjecture is that the two kinds of fortition in Mandan have different triggering conditions. These conditions are dependent on where within the prosodic hierarchy sonorant-initial words fall (Selkirk 1986, Selkirk 2011; Nespor & Vogel 1986; Beckman & Pierrehumbert 1986; *inter alios*). The prosodic hierarchy per Nespor & Vogel (1986: 221) appears below.

(29) The prosodic hierarchy

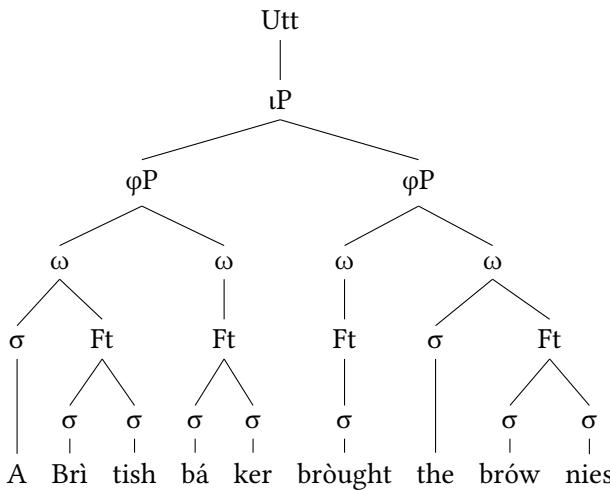
Utterance (Utt) \gg intonational phrase (iP) \gg phonological phrase (ϕ P) \gg prosodic word (ω) \gg foot (Ft) \gg syllable (σ) \gg mora (μ)

An iP is often associated with clause-level syntactic structures, while a ϕ P is a subcomponent of a clause, such as a syntactic phrase below the level of a complementizer phrase. An utterance can be composed of multiple clause-level syntactic structures. An example of this structure appears below with an example utterance in English broken down according to this hierarchy:

²¹Graczyk (2007) notes that Crow also has two sonorants that have differing allophones depending on their position within a word. Lowie (1942: 3) writes in his Crow grammar that word-initial sonorants are “weakly nasalized” to the point of having the quality of [ʷb] and [ʷd], respectively. Lowie had been working with Crow speakers since 1907, and many of his consultants had been born in the early- to mid-nineteenth century. My own fieldwork among contemporary Crow speakers reveals that word-initial sonorants are plain voiced stops without any prenasalized quality with strongly positive VOTs. It is interesting to note that both these Siouan languages on the Upper Missouri have been gradually losing allophonic prenasalized stops over the course of the twentieth and twenty-first centuries. Crow has shifted towards plain voiced stops, while Mandan only retains the prenasalized coronal allophone [ʷd] word-initially, with /w/ remaining [w] word-initially.

3.5 Word boundary-independent morpho-phonology

(30) Example of the prosodic hierarchy



As previously discussed, /r/ becomes [n̩d] word-initially, but can optionally become [n] after an intonational or utterance break. For this reason, we can say that one kind of fortition works on the level of the prosodic word, while the other works on the level of the utterance. For speakers born before the twentieth century, /w/ becomes [m] after an intonational break or utterance break, but seems to be optional among speakers born after the beginning of the twentieth century. A summary of the rules for initial sonorant fortition appear below.

(31) Rules for initial sonorant fortition

- Word-initial /r/-Fortition Rule**
 $/r/ \rightarrow [n̩d] / \#_$
Underlying /r/ becomes [n̩d] word-initially.
- Word-initial /w/-Fortition Rule (archaic)**
 $/w/ \rightarrow [m̩b] / \#_$
Underlying /w/ becomes [m̩b] word-initially in older varieties of Mandan.
- Utterance-initial /r/-Fortition Rule (optional)**
 $/r/ \rightarrow [n] / \text{Utt}_\#$
Underlying /r/ optionally becomes [n] utterance-initially.
- Utterance-initial /w/-Fortition Rule (optional)**
 $/w/ \rightarrow [m] / \text{Utt}_\#$
Underlying /w/ optionally becomes [m] utterance-initially.

3 Phonetics and phonology

Initial sonorant fortition is a kind of boundary sensitivity, but it is not discussed in the word boundary-sensitive morpho-phonology section because this sensitivity is strictly prosodic. The main contribution of this description is that it clarifies the distribution of these allophones for sonorants and allows us to make predictions about the prosodic and narrative structure of Mandan sentences by pointing to where word-initial [m] and [n] appear without an accompanying nasal vowel within an utterance versus their word-initial counterparts. The presence for initial nasal consonants without an accompanying nasal vowel is thus a metric for gauging whether a speaker is beginning a new utterance or discontinuing the previous thought. Likewise, prenasalization and obstruentization of [r] is a very productive metric for detecting where the left edge of a word boundary begins in Mandan.

3.5.3 Ablaut

As Rood (1983) and Jones (1983a) note, ablaut is a morpho-phonological feature of all Siouan languages. This system involves apophonic alternation of a vowel within a lexical stem before certain enclitics or when an ablaut vowel is placed into a certain prosodic or syntactic environment. An example of this process in Mandan can be seen below with the ablauting elements shown in bold.

(32) Example of Mandan ablaut

- a. *rareeho're*
ra-rEEh=o're
2A-go.there=IND.F
'you went there'
- b. *raráahinito're*
ra-rEEh=rít=o're
2A-go.there=2PL=IND.F
'you (pl.) went there'

Across the Siouan language family, there are three recognized ablaut grades: *e*-grade, *a*-grade, and *i*-grade. The *e*-grade and *a*-grade distinction is still productive in Mandan. There are some fossilized examples of the *i*-grade ablaut in Mandan, but it is highly restricted in its distribution. Further explanation on this *i*-grade ablaut in Mandan can be seen in §4.3.2.5.3 and §4.3.2.6. The Dakotan branch of Mississippi Valley Siouan and Biloxi of Ohio Valley Siouan have preserved all three grades, though it is most prodigiously attested in Dakotan. An example of this ablaut in Lakota appears below.

3.5 Word boundary-independent morpho-phonology

- (33) Three-way ablaut distinction in Lakota (Ullrich 2011: 754)

a. *a*-grade

Šúŋka *waŋ* *sápa* čha *waŋbláke*.
 šúnka =waŋ sápA =čha waŋ-w-yákA
 dog =INDF be.black =REL PV.INDF-1A-see
 'I saw a black dog'

b. *e*-grade

Šúŋka *kiŋ* hé *sápe*.
 šúnka =kiŋ hé sápA
 dog =DEF DEM.PROX be.black
 'The dog [here] was black'

c. *i*-grade

Šúŋka *kiŋ* hé *sápiŋ* na *tȟáŋka*.
 šúnka kiŋ hé sápA =na tȟáŋka
 dog =DEF DEM.PROX be.black =and be.big
 'The dog [here] was black and big'

Throughout this book, the underlying ablaut vowel has been represented by /E/ or /E:/, following similar conventions for other Siouan languages, where underlying ablaut vowels are represented by a capital vowel. In Mandan, the default realization of the ablaut vowel is [e] or [e:], depending on its underlying length. It should be noted that there are very few instances where the ablaut vowel is long, with the common motion verb /tE:h/ 'go there' being the most frequent example. It is important to identify whether a root contains an ablaut vowel or not whenever encountering a novel word with [e] or [e:], as there is a set of enclitics that will trigger ablaut and cause the /E/ or /E:/ to be realized as [a] or [a:] instead. That set of enclitics is listed below.

3.5.3.1 Morphologically conditioned ablaut

There are two conditioning factors for ablaut: one factor involves whether an ablaut vowel is followed by an ablaut-triggering enclitic or undergoes reduplication and the other is when the ablaut vowel is in certain syntactic environments. The overwhelming majority of instances where ablaut occurs in the corpus is due to the presence of an enclitic. Ablauting can occur on both lexical stems and on enclitics themselves when followed by other ablaut-inducing enclitics. The following enclitics all trigger ablaut.

3 Phonetics and phonology

(34) Ablaut-triggering enclitics

/=a'shka/	=a'shka	possible modal
/=aw̩i/	=q̩mi	continuous aspectual
/=q̩t/	=q̩t	hypothetical complementizer
/=haa/	=haa	simultaneous aspect
/=ta/	=ta	male-directed imperative marker
/=ra/	=na	female-directed imperative marker
/=raq̩tE/	=naate	prospective aspectual
/=rij/	=ni	same-subject switch-reference marker
/=rijtE/	=niite	celerative aspectual
/=rit/	=nit	second person plural
/=r̩ix/	=nix	negative
/=r̩jk/	=nik	iterative complementizer
/=skee/	=skee	iterative aspect
/=xi/	=xi	negative
/=Ø/	–	continuous aspectual

The trend we see in (34) is that the overwhelming majority of enclitics that trigger ablaut involve an underlying nasal. Rood (1983: 28) posists that those enclitics that do not have an overt nasal may have at one time in Pre-Proto-Siouan had such an element. For example, the reflexes of the Proto-Siouan future enclitic *ktE in Lakota and Biloxi triggers *i*-grade ablaut, so Pre-Proto-Siouan may have had **inktE or **ɪktE to condition this apophony. Additional work on the origins of ablaut in Siouan languages is needed.

Mandan only has *e*- and *a*-grade ablaut. The *e*-grade is the default realization. We can see examples of ablaut in Mandan at work below. The data below contain examples of both *e*-grade and *a*-grade ablaut in Mandan with doublets showing an example of the default *e*-grade accompanied by an example with an *a*-grade form that has been conditioned by a morphological item specified above.

(35) Examples of *e*-grade and *a*-grade ablaut

- a. /hE/ ‘see’
 - i. /hE=o'sh/ → *hé'sh* ‘he sees it’
 - ii. /hE=ta/ → *háta* ‘look!’
- b. /ru-shE/ ‘take [by hand]’
 - i. /ru-shE=o're/ → *rushé're* ‘she took it’
 - ii. /ru-shE=ra/ → *rushána* ‘take it!’

3.5 Word boundary-independent morpho-phonology

- c. /ptEh/ 'run'
 - i. /ptEh=ak/ → *ptéhak* 'he ran and...'
 - ii. /ptEh=r̥itE=o're/ → *ptáhiniito're* 'she quickly ran'
- d. /rEEh/ 'go there'
 - i. /rEEh=o're/ → *réeho're* 'she went there'
 - ii. /rEEh=haa/ → *ráahaa* 'while going'

Whether a vowel ablauts or not is lexically determined. It is not the case that all /e e:/ vowels ablaut to [a a:] when followed by the enclitics in (34).

(36) Stems with /e e:/ without ablaut

- a. /ee-reh/ 'want to'
 - i. /ee-reh=o'sh/ → *éereho'sh* 'he wanted to'
 - ii. /ee-reh=r̥i/ → *éerehini* 'he wanted to and...'
- b. /tee/ 'die'
 - i. /tee=o're/ → *téero're* 'he died'
 - ii. /waa-tee=r̥ix=o're/ → *wáateenixo're* 'he didn't die'

(37) /ee-he/ 'say'

- a. /ee-he=o'sh/ → *éehé'sh* 'he said it'
- b. /ee-r̥i-he=r̥i/ → *éeniheni* 'he said to you and...'

In the data above, there is not a single instance of /e e:/ ablauting to [a:]. These data, along with many others, demonstrate that this apophony does not apply to all stems involving /e e:/, but only a subset. These verbs must be learned, and are not intuitive, as these ablauting verbs are inherited from stems that also ablauted in Proto-Siouan. Further complicating this dichotomy between ablauting and non-ablauting formatives is the fact that not all speakers treat the same set of enclitics as ablaut-inducing. The set of enclitics in (34) is the superset of all enclitics that cause precedings /E/ or /E:/ to ablaut, but some speakers have smaller subsets of ablauting enclitics. For example, the negative enclitic triggers ablaut for some speakers, but not for others.

3 Phonetics and phonology

- (38) Negation-triggered ablaut

 - a. *wáawaruuttexikani* (OS)
waa-wa-ruutE=xi=ka=rj
NEG-1A-eat=NEG=HAB=SS
'I didn't eat any and...' (Hollow 1973a: 4)
 - b. *wáahaaxiniitek* (AE)
waa-hE=xi=rjitE=ak
NEG-see=NEG=CEL=DS
'she did not look quick enough...' (Hollow 1973a: 4)

Mrs. Annie Eagle consistently ablauts /E/ and /E:/ to [a:] before the negation markers /=xi/ or /=r̥ix/ throughout the corpus, while this is not the case for Mrs. Otter Sage. These two consultants are descended from different bands of Mandan, so it is not possible to tell if this tendency to ablaut before negation is a characteristic of one variety of Mandan or another, or if this linguistic variation is at the level of the individual.²²

- (39) Iterative-triggered ablaut

 - a. *kisúk i'hereskeeroomako'sh* (WF)
 ki-suk i'-hrE=skee-oowák=o'sh
 MID-child PV.RFLX-CAUS=ITER=NARR=IND.M
 'he became a child again' (Hollow 1973b: 150)
 - b. *rakú'karaskeenito'sh* (AE)
 ra-ku'=krE=skee=rít=o'sh
 2A-give=3PL=ITER=2PL=IND.M
 'you (pl.) are giving it to them again (Hollow 1970: 453)
 - c. *karátaxa máakaskeeki* (EB)
 k-ra-tax=E wákE=skee=ki
 ITER-INS.MTH-make.loud.noise=sv lie.POS.AUX=INTER=CON
 'when he continued crying' (Trechter 2012b: 244)

²² Mixco (1997a: 37) states that stems ending in short vowels lengthen that vowel when the negative enclitic *=xi* is added. I do not find this to be a straightforward rule, but a tendency for some speakers. There are two possible scenarios that make sense in light of what we know about the Mandan language. Firstly, it is possible that the vowel lengthening is an older productive process that has been lost by some speakers. Secondly, it could also be an innovation by another group of Mandan speakers. The fact that Mrs. Otter Sage in (38a) and Mrs. Annie Eagle in (38b) both have differing strategies for dealing with pre-*xi* lengthening—despite the fact that they are both sisters, daughters of Crow’s Heart—suggests that this issue is not so cut and dry. Further phonetic analysis of Mandan recordings is needed to resolve this quandary.

3.5 Word boundary-independent morpho-phonology

- d. *waríuteskeeni* (EB)
 wa-ruutE=skee=r̩
 UNSP-eat=ITER=SS
 'he was hungry again and...' (Trechter 2012b: 101)

Mr. Walter Face (1890-1965) consulted with Kennard (1936) on the latter's Mandan grammar sketch, and the iterative /skee/ does not trigger ablaut for him in (39a). Mrs. Annie Eagle consistently ablauts before /skee/ as in (39b), while Mr. Edwin Benson vacillates between ablauting and not ablauting, as seen in (39c) and (39d) above. All nasal enclitics in (34) otherwise trigger ablaut.

One enclitic with an underlying nasal that never triggers ablaut is the attitudinal /r̩ash/, which adds the sense of hedging a statement in a way similar to English 'sort of,' 'kind of,' or 'like.'

(40) Lack of ablaut before a nasal enclitic

- a. *náakenashini* (EB)
 r̩aqkE=r̩ash=r̩
 sit.POS.AUX=ATT=SS
 'he was sitting and...' (Trechter 2012b: 110)
- b. *írushenashoomaksih* (OS)
 i-ru-shE=r̩ash=oowaq=sih
 PV.INS-INS.HAND-grasp=NARR=INTS
 'he was kind of holding him' (Hollow 1973a: 45)
- c. *ówa'pxenashoo* (MG)
 o-wa'-pxE=r̩ash=oo
 PV.LOC-PV.PRCE-stumble=ATT=DEM.MID
 'she kind of broke through' (Hollow 1973a: 81)

The fact that immediately preceding a nasal enclitic does not automatically trigger ablaut signifies that this process is rooted in more than just a simple phonological rule. The topicalizer /r̩/ likewise seems to not trigger ablaut, but it is difficult to say whether this is the case or not due to the fact that the topicalizer is almost always accompanied by some deictic demonstrative, which all feature a mid vowel.

- (41) *koshúykaseena*
 ko-shúyka=s=ee=r̩
 3POSS.AL.PERS=younger.brother=DEF=DEM.DIST=TOP
 'his younger brother' (Trechter 2012b: 141)

3 Phonetics and phonology

The number of instances of the topicalizer without an accompanying deictic demonstrative is very limited in the corpus, but in these situations, the topicalizer does not trigger ablaut:

- (42) *wáashixtena*
 waa-shi-xtE=rq
 NOM-be.good-AUG=TOP
 ‘something good’ (Treichter 2012b: 127)

As Rankin et al. (1998) point out, Proto-Siouan featured the same three apex nasal vowels that Mandan possesses: i.e. /*a *i *u/. Rood (1983) posits that Pre-Proto-Siouan may have also had nasal mid-vowel or nasal segments that disappeared but left the nasal feature behind on preceding vowels, and that some merger of these nasal mid-vowels with oral vowels is what has caused the ablaut reconstructed in Proto-Siouan and in its daughter languages. These former nasal elements may have formerly been part of enclitics that caused nasalization of a mid-vowel, but then those nasal mid-vowels were lost to subsequent mergers by the time of early Proto-Siouan.

Jones (1983a) agrees that ablaut might be explained historically as remnants of a formerly regular phonological system. One piece of evidence to support the notion that nasality was a key component in creating this ablaut system can be seen with Mandan, where the overwhelming majority of ablaut-triggering enclitics are inherited from Proto-Siouan. These same enclitics were either enclitics or became encliticized during the development into Mandan. For example, the negative /=r̥ix/ is a cognate of /=šni/ in Lakota (Rankin et al. 2015), and /=šni/ is also triggers ablaut in Lakota and Dakota (Ullrich 2011: 754). The enclitics that bear nasals that do not trigger ablaut seem to have been innovated from some element that is not clearly attributable to Proto-Siouan: e.g., /=r̥ash/ does not have any other cognates in Siouan (Rankin 2010). These innovations have not become incorporated into what was a formerly regular morpho-phonological process since the conditions for creating ablaut had long since grammaticalized. More work is needed to flesh out this idea of ablaut being conditioned by nasality in Proto- and Pre-Proto-Siouan.

The other morphologically conditioned environment where ablaut occurs is when a sequence containing an ablaut vowel is reduplicated. Reduplication in Mandan copies the onset and the first mora of the syllable nucleus and prefixes this reduplicated formative onto the root of the word. In these constructions, the ablaut vowel in the reduplicated formative becomes [a] and the ablaut vowel in the root remains unchanged. We can see examples of reduplication-induced ablaut in the data below.

3.5 Word boundary-independent morpho-phonology

(43) Reduplication-induced ablaut in Hollow (1970)

- a. *kxakxé'sh*
kxE~kxE=o'sh
DIST~be.spotted=IND.M
'it is spotted [in color]' (Hollow 1970: 126)
- b. *Masáse*
wq-sE~sE
UNSP-DIST~be.red
'Red Butte' (Hollow 1970: 29)
- c. *wíikxakxeka*
waa-i-kxE~kxE=ka
NOM-PV.INS-DIST~be.spotted=HAB
'magpie' (Hollow 1970: 289)
- d. *rashkáshke*
ra-shkE~shkE
INS.FOOT-DIST~jump
'to tiptoe' (Hollow 1970: 231)
- e. *xkaxkqho'sh*
xkqh~xkqh=o'sh
AUG~move=IND.M
'he is ambitious' (Hollow 1970: 316)
- f. *rarúksiksijro'sha?*
ra-ru-ksij~ksij=o'sha
2A-INS.HAND-DIST~tickle=INT.M
'did you tickle her?' (Hollow 1970: 476)

In (43a) through (43d), we see the expected behavior for the ablaut vowel when reduplicated. The reduplicated (i.e., prefixed) version of the verb undergoes ablaut, turning /E/ to [a], while the vowel in the original verbal root remains [e]. This prefixal reduplication indicates some kind of intensity or distributed quality of a state or action, and is quite productive. However, we can see a possible additional variety of ablaut occurring in (43e) and (43f) whenever a formative with an underlying nasal is reduplicated. When prefixal reduplication takes place, only the onset and a single mora are reduplicated. No nasal quality is reduplicated onto the new prefix, so an underlying nasal vowel becomes an oral vowel. Similarly, a long vowel will become a short vowel. We can see this demonstrated in (43e) where the stem /xkqh/ 'move' is reduplicated as [xka], with the vowel

3 Phonetics and phonology

lacking its original nasal feature. In the case of (43f), we see a long nasal vowel become a short oral vowel in addition to the underlying nasality of the vowel not being copied over to the reduplicated morph.²³

3.5.3.2 Syntactically conditioned ablaut

Enclitics are not the sole cause of ablaut in Mandan, as several auxiliary verbs can likewise serve as triggers. As is the case with enclitic-conditioned ablaut, the ablaut occurs in the environment where the auxiliary verb that immediately follows an underlying /E E:/ is nasalized. These auxiliary verbs are all positional or existential in nature and convey a progressive reading to the subordinate verb. The these auxiliary verbs trigger ablaut and are listed below.

(44) Ablaut-triggering auxiliary verbs

/hąqkE/	<i>hąqke</i>	'standing' positional auxiliary verb
/rąqkE/	<i>náake</i>	'sitting' positional auxiliary verb
/rąqkah/	<i>náakah</i>	'sitting' habitual auxiliary verb
/ruurịh/	<i>núunih</i>	plural durational auxiliary verb
/wąqkE/	<i>máake</i>	'lying' positional auxiliary verb
/wąqkah/	<i>máakah</i>	'lying' habitual auxiliary verb

Two of the these positionals have a variant that expresses a habitual progressive action, one for sitting and one for lying. Examples of these auxiliaries co-occurring with other verbs that have progressive readings appear below.

(45) Auxiliary-induced ablaut

- a. *waki'karaara* *hąqkeroomako'sh*
 wa-ki'kraa=E hąqkE=oowąk=o'sh
 UNSP-look.for=sv stand.POS.AUX=NARR=IND.M
 'he was looking around' (Hollow 1973a: 139)
- b. *píira* *náakaani*
 pii=E rąqkE=rị
 devour=sv sit.POS.AUX=ss
 'he was sitting there eating it up and...' (Hollow 1973b: 122)

²³I assume throughout this book that nasality is underlying present on vowels, rather than arguing for some kind of underlying floating [+nasal] or underspecified /N/ that triggers regressive nasal harmony: i.e., */ksiiN/ instead of /ksịj/ 'tickle.' I take this behavior for reduplication to mean that only certain articulatory gestures and their durations are truly copied to become reduplicated prefixally and not that some additional underlying feature is needed to allow such a pattern.

3.5 Word boundary-independent morpho-phonology

- c. *karátaxa* *náakahoomako'sh*
 ka-ra-tax=E rąqkah=oowąk=o'sh
 INS.FRCE-INS.MTH-make.loud.noise=SV sit.POS.AUX.HAB=NARR=IND.M
 'he was sitting there crying' (Hollow 1973b: 222)

d. *íra'reshhara* *máakahqq*
 i-ra'-resh#hrE waqkE=∅
 PV.INS-INS.HEAT-be.hot#CAUS lie.POS.AUX=SIM
 'while making him hot' (Hollow 1973b: 204)

e. *íkiha* *má'kahaa*
 i-kihE=E wą'kE=haa
 PV.INS-wait=SV lie.POS.AUX=SIM
 'while they waited there' (Hollow 1973b: 298)

f. *ú'shkaharaa* *má'kahini*
 ú'sh=ka#hrE=E wą'kah=rị
 be.thus=HAB#CAUS=SV lie.POS.AUX.HAB=SS
 'he did it that way and...' (Hollow 1973b: 224)

g. *íkiha* *núunihoomako'sh*
 i-kihE=E ruuriḥ=oowąk=o'sh
 PV.INS-wait=SV be.there.PL.DUR.AUX=NARR=IND.M
 'they were there waiting' (Hollow 1973b: 258)

These auxiliaries are sometimes combined with a verb that bears the simultaneous aspectual /=haa/, and in fast speech, it is sometimes difficult to perceive [h] as part of a consonant cluster. As such, it is often not clear in Hollow's (1970) transcriptions whether he intends to mark a stem vowel /=E/ at the end of a verb or he cannot hear the juncture between the consonant and the [h] in /=haa/. Kennard's (1936) transcriptions fare better in this respect. As such, the majority of the examples above in (45) contain morphology such that we can distinguish between /=E/ and /=haa/.

The benefactive auxiliary *kú* ‘give’ can also trigger ablaut, but it does not do so consistently. All speakers in the corpus have multiple instances of *kú* triggering and not triggering ablaut within the same narrative. However, the lack of ablaut before *kú* in Kennard’s (1934, 1936) transcribed narratives is much rarer than it is in Hollow’s (1970, 1973a, 1973b). Both of the examples in (46) come from Mrs. Annie Eagle, Hollow’s (1970) primary consultant and the source for the plurality of the extant recorded sources of Mandan.

(46) Variability in benefactive-triggered ablaut for *Annie Eagle*

3 Phonetics and phonology

- a. *karúxu'he* *makú're* *mikák*
 ka-ru-xu'h=E wä-ku'=E wïk=ak
 INS.FRCE-INS.HAND-plow=SV 1s-give=SV be.none=DS
 'there was no one to plow for me' (Hollow 1973a: 54)
- b. *qqwe rusháa* *makú'ta*
 aqwE ru-shE wä-ku'=ta
 all INS.HAND-take 1s-give=IMP.M
 'take all of it for me' (Hollow 1973a: 78)

Her own variability in ablauting before *kú'* underscores the instability of its productivity, especially since she ablauts before certain enclitics more consistently than other speakers who contributed data. This pattern suggests that *kú'* had begun being reanalyzed as an auxiliary that did not trigger ablaut, or at least optionally so, for speakers born around the turn of the twentieth century.²⁴

The final syntactic environment that triggers ablaut is when the stem vowel is added clause-finally to indicate that the ablauted verb is the first in a sequence, with the following verb taking place afterwards. We can see this clause-final ablaut in data below.

(47) Sequence marking with ablaut

- a. *Náaka* *inák* *waherés* *waká'roomako'sh.*
 räqkE=Ø iräk wa-hrE=s wa-ka'=oowäk=o'sh
 sit.POS.AUX=CONT again UNSP-CAUS=DEF UNSP-possess=NARR=IND.M
 'He was sitting and then he asked for his food again' (Hollow 1973b: 94)
- b. *Kxíhini* *máapsitaara* *inák* *ráahqmi*
 kxuh=rj wäapsi=taa=E=Ø iräk rEEh=awj
 lie.down=ss morning=LOC=SV=CONT again go.there=CONT
 'She lay down and once it was morning she went along again' (Hollow 1973a: 103)

This ablaut is reminiscent of the process by which certain conjunctions in Lakota trigger *e*-grade ablaut (Ullrich 2011: 754). This ablaut serves to temporally connect one clause with the following clause, albeit with a phonetically null coordinator. Only the ablaut itself overtly conveys that there is a relationship between the two clauses.

²⁴There are few instances of other auxiliaries not triggering ablaut in the corpus, but these examples can likely be attributed to a break in the prosody: i.e., these counterexamples are likely fragments or left dislocated elements.

3.6 Word boundary-dependent morpho-phonology

Similar to initial sonorant fortition, ablaut is a process that does have a kind of boundary sensitivity, but its sensitivity has to do with certain enclitics triggering ablaut and certain syntactic constructions triggering ablaut. Ablaut is not sensitive to word-internal boundaries as described in §3.6 below.

3.6 Word boundary-dependent morpho-phonology

In previous published descriptions of the phonology of Mandan, there has been minimal attention paid to fine details of the interaction between its phonology and morphology. Specifically, there are various phonological processes that are described as being regular, but several systematic exceptions appear throughout the corpus. Hollow (1970: 35) and Mixco (1997a: 12) likewise state that there are phenomena that they do not address and leave these questions open for future research.

This section serves to address these open questions and underdescribed phenomena and to demonstrate that they are not actually exceptions, but instances of regular phonological processes being blocked by word boundaries that are word-internal. As such, this section is based on theoretical approaches put forth in Kasak (2019), which attributes these irregularities to word boundary-sensitive phenomena. The processes that are sensitive to word-internal boundaries are hiatus resolution (see §3.6.1), metathesis (see §3.6.2), nasal harmony (see §3.6.3), and primary stress assignment (see §3.6.4).

3.6.1 Hiatus resolution processes

Mandan does not permit [V.V] or [VV] sequences.²⁵ This conspiracy to prevent hiatus or diphthongs results in several different strategies for resolving /VV/ sequences. In Hollow (1970) and Mixco (1997a), discussion of consonantal epenthesis is brief and restricted to showing a single example of a proposed phonological rule to insert glottal stops between two vowels. I elaborate upon the conditions under which this epenthesis occurs, as well as define a second kind of epenthesis that was first suggested by Carter (1991a): that the root-final /r/ that Hollow posits for a large amount of words is not really part of that root, but is in fact an epenthetic segment that separates a long vowel from an element in the postverbal field.

²⁵The sole exception to this statement is the diphthong in the greeting *háu*, as detailed previously in §3.2.2.

3 Phonetics and phonology

In this subsection, I delve into the ways in which Mandan resolves hiatus, concluding that there are three ways hiatus is resolved in Mandan, with the data in (48) showing an example that contains two epenthetic processes in Mandan. Epenthesis within a morphological word (i.e., a word that involves a stem plus affixation) resolves hiatus by inserting [?], while hiatus between an enclitic and a stem where a long vowel is involved is resolved by inserting [r]. In the example below, brackets represent the boundaries of the morphological word. Enclitics exist outside the bounds of this morphological word.

- (48) Two kinds of epenthesis to resolve hiatus

<i>wapákanakini'eshkakereroomako'sh</i>
[wa-pa-krąkṛi-eshka]=krE=oowąk=o'sh
UNSP-INS.PUSH-butcher-SIM=3PL=NARR=IND.M

'they were kind of butchering them' (Hollow 1973b: 86)

This topic of epenthesis receives a considerable amount of attention here, because the differing strategies for resolving hiatus in Mandan differ by the level on which the domain occurs: the morphological word (i.e., the stem and affixes) or the word in the phrase structure (i.e., the stem and enclitics). The argument that follows in §3.6.1.1 is that the [?]-insertion described in Hollow (1970) is restricted to word-internal hiatus. In §3.6.1.2 and §3.6.1.3, I argue that virtually all postverbal morphology in Mandan is actually enclitic in nature, and that this linking [r] only occurs across enclitic boundaries from a lexical item onto a functional item that is an enclitic.

When hiatus occurs across an enclitic boundary involving two short vowels, the final short vowel is deleted, while the linking [r] occurs in the environment of a long vowel at an enclitic boundary. Carter (1991a) is the first to posit that the root-final rhotic that Hollow (1970) describes is not part of the underlying representation, but the work herein is the first to take that assumption and extend the analysis to show that [r] is not simply epenthetic for post-verbal elements, but specifically for enclitics in the environment of a heavy syllable. The fact that [r]-insertion is predictable in Mandan provides phonological evidence for sensitivity to the morphological domains proposed in this book: i.e., internal word boundaries within a morphological word. The argumentation for this interpretation of the structure of postverbal elements in Mandan can be seen in §4.4 in the following chapter.

3.6 Word boundary-dependent morpho-phonology

3.6.1.1 Epenthetic [?]

Hollow (1970: 47) states that [V.V] sequences are illicit on the surface. To avoid hiatus, Mandan has an epenthetic [?] that acts as the onset of the following syllable. One issue with Hollow's description of this process is that he does not distinguish between long and short vowels. As such, it is not clear whether this kind of epenthesis is exclusive to environments involving vowels of one particular length or must occur with both.

Several examples of this epenthesis at work appear below.

(49) Instances of [?] epenthesis

- a. *psi'éshka*
psi-eshka
be.black-SMLT
'just black' (Hollow 1973a: 74)
- b. *warú'uuxo'sh*
wa-ru-uux=o'sh
1A-INS.HAND-be.broken=IND.M
'I broke it with my hands' (Hollow 1970: 47)
- c. *wa'ípteh*
wa-i-ptEh
UNSP-PV.INS-run
'automobile' (Hollow 1970: 338)
- d. *wáa'oshi*
waa-o-shi
NOM-PV.IRR-be.good
'good things' Hollow (1973a: 132)
- e. *wa'áahuuroomako'sh*
wa-aa-huu=oowqk=o'sh
UNSP-PR.TR-come.here=NARR=IND.M
'he brought them some' (Hollow 1973a: 177)
- f. *wáa'aahuuki*
waa-aa-huu=ki
NEG-PV.TR-come.here=COND
'if he brings it' (Hollow 1973a: 120)

Each instance of [?] insertion in (49) occurs regardless of whether the surrounding vowels are long or short. Furthermore, this kind of epenthesis can occur

3 Phonetics and phonology

pre- or post-tonically. As such, [?] insertion is purely conditioned by underlying /VV/ sequences within the boundaries of a morphological word: i.e., within the scope of the stem plus affixes but excluding enclitics.

When observing the distribution of where this epenthesis is most likely to occur, it is most commonly associated with the prefix field. Very rarely will a postverbal element participate in [?] insertion. In fact, the only morphological item following a verbal root that triggers [?] insertion is the similitive suffix *-eshka* and its alternative form *-esh*. This restriction is caused by the fact that the similitive suffix is the only productive suffix that is vowel-initial (see §4.2 for additional description of suffixes in Mandan).²⁶

Examples of [?] insertion in the suffix field appear below. In the first two examples, we see the expected behavior of glottal stop insertion when hiatus occurs in the prefix field, and the last two examples show glottal stops resolving hiatus involving suffixes. We can surmise from this distribution that [?] epenthesis is not restricted to the prefix field alone, as the few genuine suffixes that exist in Mandan resolve hiatus-creating conditions in an identical manner.

(50) Examples of [?] insertion with affixes

- a. *wáa'ishqhemik*
waa-ishqhe#wɪk
NOM-price#be.none
'credit, debt' (Hollow 1970: 288)
- b. *ra'uux*
ra-uux
INS.MTH-be.broken
'to break something between one's teeth' (Hollow 1970: 264)
- c. *psi'éshkas'o'sh*
psi-eshka=s=o'sh
be.black-SIM=DEF=IND.M
'it was definitely kind of black' (Hollow 1970: 434)
- d. *tashká'eshka?*
tashka-eshka
how-SIM
'how come?' (Hollow 1973a: 42)

²⁶There is another vowel-initial suffix, the collective *-aaki*, but it appears restricted to compounds involving the word *numá'k* 'person'. As such, there are no examples in the corpus showing what happens when *-aaki* comes into contact with a vowel-final stem, though the behavior of the similitive suggests that it would trigger [?] epenthesis.

3.6 Word boundary-dependent morpho-phonology

There has been some debate among Siouanists regarding whether we can demonstrate that modern Siouan languages have true underlying onset glottal stops (Larson p.c., Mirzayan p.c., Ullrich p.c.), since there is clear evidence for certain Proto-Siouan roots being reconstructed with word-initial *ʔ (Rankin et al. 2015). In some other Siouan languages, like Lakota, there are a small set of roots that are assumed to be [ʔ]-initial. A number prefixes have allomorphs that are specific to vowel-initial stems and as such, we can point to these instances of allomorphy as evidence that we do not have underlying /ʔ/ or epenthetic [ʔ] to satisfy a requirement to have an onset.

The examples below demonstrate that there are special allomorphs in Mandan for consonant-initial stems versus vowel-initial stems. In (51a), the vowel first person active plural prefix /rV-/ copies the following vowel, creating a single long vowel, while the integrity of the underlying vowel in /rɁ-/ is maintained when the stem is consonant-initial in (51b). Similarly, the alienable possession prefix /ta-/ is fully realized in (51c), but when prefixed onto a vowel-initial stem, the allomorph /tV-/ harmonizes with the initial vowel of the stem to produce a long vowel like in (51d). There are other allomorphic alternations that behave similar to the prefixes above, which are explained more thoroughly in the following chapter. The point still stands, however, that we cannot make a case for these intervocalic glottal stops being present in the underlying representation. As such, these /ʔ/ must be epenthetic.

(51) Vowel-initial stems and allomorphy

- a. *ríisehka'sh*
rV-i-sek=ka=o'sh
1A.PL-PV.INS-make=HAB=IND.M
'we [always] made it' (Lowie 1913: 356)
- b. *nuhé'sh*
rɁ-hE=o'sh
1A.PL-see=IND.M
'we see it' (Hollow 1970: 71)
- c. *tami'ti*
∅-ta-wi'ti
3POSS-AL-village
'his village' (Hollow 1970: 482)
- d. *tóominike*
∅-tV-owrik=E
3POSS-AL-beans=sv

3 Phonetics and phonology

‘her beans’ (Hollow 1970: 482)

We can deduce from the data above that Mandan does not have word-initial /ʔ/, given the presence of allomorphy for prefixes that select for consonant-initial and vowel-initial stems. As such, these [ʔ] segments are not underlying and are being added epenthetically when hiatus occurs within the domain of a morphological word. We can codify this rule as follows:

(52) [ʔ]-Epenthesis Rule

$\emptyset \rightarrow [ʔ] / V(:)_-V(:)$ (word-bounded)

Insert a [ʔ] between two vowels of any length within the domain of a morphological word: i.e., between a stem and an affix.

This [ʔ]-insertion is not the only kind of epenthesis in Mandan, as [r] also appears in certain conditions to prevent hiatus. This process is described below.

3.6.1.2 Epenthetic [r]

Carter (1991a) is the first to propose that all instances of what Hollow (1970) interprets as underlying root-final /r/ in Mandan are really just due to the fact that those roots contain long vowels, though Mixco (1997a) includes Hollow’s stem-final /r/ in his grammar. Carter argues that [r] is epenthetic by analyzing data collected by Prince Maximilian (1839) on dialectal differences between Mandan villages. In looking at the forms below, Carter points out that both dialects differ in how they handle hiatus resolution after a verb stem: Nuu’etaare will delete the second of two short vowels, while [r] appears after a stem with a long vowel or one that ends in [ʔ]. Ruptaare, however, appears to insert [r] between short vowels and harmonizes the following short vowel to the preceding long vowel.

(53) Differing hiatus strategies in the Nuu’etaa and Ruptaa dialects

Underlying	Nuu’etaare	Ruptaare	Gloss
/wa-he=o’sh/	wahé’sh	wahé’osh	‘I saw’
/kri=o’sh/	kiri’sh	kiri’osh	‘he arrived there’
/tee=o’sh/	téero’sh	tée’e’sh(?)	‘he died’
/huu=o’sh/	húuro’sh	húu’u’sh(?)	‘he came here’
/kihkra’=o’sh/	kihkárá’ro’sh	kihkárá’á’sh(?)	‘he looked for it’
/wa-hr̥a’=o’sh/	wahaná’ro’sh	wahaná’á’sh(?)	‘I sleep’

Carter (1991a: 487) merely posits that [r] is epenthetic in Mandan, not commenting on the conditions under which it occurs, aside from postverbally when

3.6 Word boundary-dependent morpho-phonology

hiatus involves stem that ends with a long vowel or a glottal stop.²⁷ One reason why [Carter](#) reached this conclusion may stem from the fact that he consistently recorded the difference between long and short vowels. [Hollow](#) does not record long vowels, and as such he proposes that there exist minimal pairs between lexical items where some forms seem to have an [r] that appears in certain conditions, while others do not. When word-final, [Hollow](#) states that these flaps undergo apocope, but can otherwise be realized with the addition of post-verbal morphological material.

- (54) Examples of what [Hollow \(1970\)](#) proposes are root-final [r]

Hollow's proposed form	Actual form	Gloss
⟨sí⟩	[sí]	‘to hire someone’
⟨sír⟩	[sí:]	‘to be yellow’
⟨pé⟩	[pé]	‘head louse’
⟨pér⟩	[pé:]	‘to break something off’

Subsequent fieldwork yields an explanation for why certain lexical items seemingly feature this root-final sonorant: all words that [Hollow](#) analyzes as having an underlying root-final ⟨r⟩ actually contain long vowels, which corroborates [Carter](#)'s account of Mandan vowels over that of [Hollow](#). These long vowels, when followed by vowel-initial enclitic morphology, trigger an epenthetic [r] to prevent hiatus between a long vowel and another vowel post-verbally. As I have mentioned in §3.1.2.2, all phonemic glottal stops appear in coda positions in their underlying form, and the stems ending in /?/ in the data in (53) show that these stems pattern with those ending in long vowels.

The distinction between this kind of epenthesis and the one described above in §3.6.1.1 is the domain in which each epenthesis is active. For [?]-epenthesis, the relevant domain is that of the morphological word; any prefix or derivational suffix will result in [?]-insertion to prevent hiatus. For [r]-epenthesis, the overall prosodic word is its designated domain. Namely, [r]-insertion only occurs to prevent hiatus between a long vowel and another vowel at the boundary of a lexical item and a functional item. Similar to r-intrusion in certain English varieties ([Gick 1999](#)), this [r]-epenthesis in Mandan occurs at the right boundary of a lexical item to prevent hiatus. However, it is not the case that [r]-insertion appears merely between two words.

²⁷The Ruptaare forms in (53) have been slightly altered here. [Carter \(1991a\)](#) suggests that the male-addressee indicative enclitic /=o'sh/ becomes /=sh/, but I suggest that the vowel in the enclitic merely harmonizes with the preceding vowel. More work on [Maximilian's \(1839\)](#) data is needed, but such work is ultimately outside the scope of this book.

3 Phonetics and phonology

All three of the examples in (55) below highlight the fact that [f]-epenthesis is not simply triggered to prevent hiatus across a word boundary. In (55a) and (55b), each word has a vowel-vowel contact with an adjacent word, and yet no [r]-insertion takes place. In particular, we see no [r]-epenthesis in (55b), even though the word *Núu’etaa* ‘Mandan’ ends in a long vowel. Similarly, even within a postpositional phrase, we do not see intrusive [r] appear between the final vowel of a noun and the first vowel of a postposition, which can be seen in (55c). As such, it is not enough to state that [f]-epenthesis occurs at the right edge of a word boundary, but that its presence is motivated by the underlying syntagmatic structure of a phrase. We can see examples of this below, where we see examples of word that are vowel-final followed by vowel-initial words, yet no epenthetic elements are introduced to avoid a vowel abutting another vowel across a word boundary.

- (55) Lack of [r]-epenthesis with word-boundary hiatus

 - a. *Matéwe íresekini* *érereho'sha?*
 watewe i-ra-sek=r̥i e-ra-rEh=o'sha
 what PV.INS-2A-make=ss PV-2A-want=INT.M
 ‘What do you want to do?’ (Hollow 1973b: 3)
 - b. *Núu'etaa j̥ksahe* *íwarooni* *éwereho'sh.*
 r̥q̥u'etaa j̥'-ksah=E i-wa-roo=r̥i e-wa-rEh=o'sh
 Mandan PV.RFLX-ways=SV PV.INS-1A-speak=ss PV-1A-want=IND.M
 ‘I want to talk about the Mandan ways.’ (Hollow 1973a: 47)
 - c. *mini iku'shtaa*
 wri i-ku'sh=taa
 water DIR-be.inside=LOC
 ‘under water’ (Hollow 1973b: 10)

This notion of postverbal material as enclitics is expanded upon throughout Chapter 4, but we can see that the epenthetic [r] is only spelled out to prevent hiatus between a long vowel and some postverbal element with a vowel on its margin where said element is prosodically dependent on the verb. More specifically, [r] appears to prevent hiatus between a long vowel and another vowel at an enclitic boundary. The ordering of these enclitics reflects the underlying syntactic structure, making these enclitics simple clitics per Anderson's (2005) definition, where each clitic is an element that is prosodically dependent upon an adjacent word to be realized.

3.6 Word boundary-dependent morpho-phonology

In the example in (56), we see an utterance with several enclitics.²⁸ Hiatus occurs due to the accretion of enclitic materials onto the stem, /=krE/ 3PL and /=oowąk/ NARR.²⁹ As such, this [r]-intrusion takes place at the enclitic boundary to repair this illicit construction. Hollow (1970) argues that this [r] is an underlying element of the coda of specific roots, but if that were so, the flap should not be expected in the example above, because the third person plural marker is underlyingly /=krE/, morphologically speaking. Hollow does not posit that this formative has an underlying root-final flap, but instead argues that the narrative evidential =oomak has an allomorph =roomak when added to a vowel-final stem. Rather than adhering to Hollow's multiple stipulations regarding the appearance of [r], we can take a more parsimonious approach and conclude that all instances of [r] appearing intervocally are due to the same motivating factor: to prevent hiatus at the right edge of a stem across an enclitic boundary that involves a long vowel.

- (56) *inák óti ikisehkereroomako'sh*
 irąk o-ti i-ki-sek=krE=oowąk=o'sh
 again PV.LOC-live PV.INS-ITR-make=3PL=NARR=IND.M
 'they fixed the house again' (Hollow 1973a: 157)

Further evidence that this flap is truly epenthesis rather than some underlying morphological element that is realized in particular conditions comes from Maximilian (1839). His notes explicitly state that there is a variety of differences

²⁸I also argue in Kasak (2019) that enclitics in Mandan are what Anderson (2005) dubs phonological clitics, and remain in-situ within the structure, so these enclitics are not simple targeting a particular location within the structure; they are already present in the structural position in which they appear and are simply relying on an adjacent word to be prosodically realized. The implication of this analysis is that enclitic boundaries in Mandan always coincide with a phrasal boundary.

²⁹I argue in Kasak (2019), from a theoretical perspective, that the enclitic associated with the number of the subject appears in T, which is plural in this case. Plural marking for objects appear in v, though the singular object in the example above causes no such marker to be realized. The narrative evidential appears after subject marking, and the allocutive agreement marker appears in C, where it is in complementary distribution with other complementizers. This syntactic structure assumes a Minimalist framework as proposed by Chomsky (1993, 1995). I attempt to spend as little time involving this framework into the present book so as to not detract from the descriptive goal of this grammar. The framework accounting for the phrasal relationships here is less important than the overall notion that there is a structural relation that enclitics have to the words to which they adjoin that is different from the one that affixes have to their stems. For this reason, this work continues to use a hyphen to indicate the boundary between stems and affixes and an equal sign to indicate the boundary between stems and enclitics. An enclitic boundary is synonymous here with a phrasal boundary.

3 Phonetics and phonology

between the grammar of the Ruptaare village and Like-A-Fishhook, the village where he has taken up residence and whose population consists of Nuu'etaare speakers.

Carter (1991a) is the first to sift through Maximilian's data and attempt to reconstruct what the modern Mandan forms might look like for both dialects. In doing so, there is a clear pattern that emerges: in instances where Nuu'etaare involves an intrusive [r], this sound does not appear in Ruptaare. All instances of underlying /V:V/ sequences are realized with the shot vowel being deleted. Furthermore, in cases where Nuu'etaare would avoid hiatus by deleting a vowel from an enclitic in the case of /VV/ sequences, Ruptaare simply inserts a glottal stop. These differences can be seen in (57) below.

- (57) Dialect differences in Maximilian's (1839) grammar via Carter (1991a: 486)

Nuu'etaare	Ruptaare	Morphology	Gloss
wahé'sh	wahé'o'sh	/wa-hE=o'sh/	'I saw'
ṣi̥ho'sh	ṣi̥ho'sh	/ṣi̥h=o'sh/	'he begged'
téero'sh	tee'sh	/tee=o'sh/	'he died'

As shown above, the Ruptaare dialect treats the male-addressee indicative marker =o'sh differently than the Nuu'etaare dialect. Specifically, when a stem ends in a short vowel or a consonant, both forms end in =o'sh, with the short stem getting an epenthetic glottal stop. A stem ending in a long vowel will delete the initial /o/ in =o'sh, creating a [VV?] sequence. In Nuu'etaare, when a stem ends in a short vowel, the /o/ in =o'sh is deleted to avoid hiatus across an enclitic boundary, but remains when the stem ends in a consonant. However, when the stem ends in a long vowel, the epenthetic [r] appears to prevent hiatus. It seems that Ruptaare did not permit /V:V/ sequences and preferred to have [VV?] sequences instead. For Nuu'etaare, the variety of Mandan addressed throughout this work, instead of a [VV?] or [VV?V] sequence, a [VVrV] sequence is preferred instead.

The overall takeaway here is that this [r] is not just the case of an underlying coda surfacing when in an intervocalic environment. It is conditioned by two factors. Firstly, a stem must undergo the addition of some postverbal element. Secondly, either the stem or the postverbal element must involve a long vowel that would otherwise cause hiatus.

The two competing systems for resolving hiatus that we see in Maximilian (1839) have collapsed in present-day Mandan, where modern Ruptaare speakers make exclusive use of the epenthetic [r] like in Nuu'etaare: e.g., Little Owl & Rhod (1992: 10) realizes /si:=oʃ/ 'it is yellow' as siiro'sh rather than the †si'i'sh we would expect in the Ruptaare found in Maximilian's notes. Given this work's

3.6 Word boundary-dependent morpho-phonology

focus on modern Mandan and the apparent dialect coalescence that took place following the last smallpox epidemic, we can appeal to a single system for dealing with enclitic-boundary epenthesis versus the dueling systems of older Ruptaare and Nuu'etaare.

We have already seen instances of glottal stop epenthesis occurring word-internally in the environment of a long vowel, so we cannot simply say that [?] epenthesis involves short vowels and [r] epenthesis merely involves long vowels. The glottal stop epenthesis described in §3.6.1.1 and the flap epenthesis described herein take place in different environments: i.e., the intrusive [?] occurs to prevent hiatus within a morphological word, while the intrusive [r] takes place to prevent hiatus involving a long vowel at the right margin of a phrase. Furthermore, [r]-epenthesis is not just found in contexts where two underlying vowels come into contact, but when an underlying glottal stop abuts an onsetless enclitic. This behavior can be seen below, where both feature stems that end in a heavy syllable: i.e., a syllable that contains a long vowel or a coda glottal stop followed by an enclitic that begins with a vowel.

(58) Instances of [r]-epenthesis in Kennard (1936: 17)

- a. *kixée* ‘to quit’ → *kixéero’sh* ‘he quit’
- b. *kiná* ‘to tell’ → *kiná’ro’sh* ‘he told it’

In the examples above, we have the same structure, where a verbal stem like [X] involves the morphological adjunction of an enclitic =Y, giving the structure [[X] =Y]. If we were to apply [?] epenthesis to resolve hiatus above, we would wind up with **kixée’o’sh* for (58a), and technically we should not need epenthesis for (58b), since the stem ends in a glottal stop, so any enclitic added onto such a stem should be satisfy the requirement to avoid hiatus with **kiná’o’sh*. A likely reason why **kiná’o’sh* is unacceptable in that the glottal stop at the right edge of *kina* ‘tell’ would be syllabified as an onset. As discussed in §3.1.2.2, underlying glottal stops in Mandan only occur in coda positions and are never resyllabified as an onset.

A likely reason why **kiná’o’sh* is unacceptable is that syllabifying that word would result in the underlying glottal stop shifting from a coda to an onset: i.e., the [?] is aligned to the left edge of the right edge of a phrase. This change would affect the syllable structure of the final syllable in /kirā?/, as the glottal stop is moraic and part of the nucleus. Given that every phonemic /?/ adds to syllable weight and whose syllables pattern with long vowels, I assume that resyllabifying what should be a coda /?/ to an onset would also violate the identity

3 Phonetics and phonology

of an underlying bimoraic sequence, which is being changed in the output. Parsing an underlying /?/ from a coda into an onset may also violate the restriction against hiatus for similar reasons, due to the fact that /V?/ patterns with /V:/, rendering any /V?=V:/ sequences equal to /V:=V:/ ones. This analysis explains why stems ending in glottal stops and those ending in long vowels undergo [r]-epenthesis.

In addition to glottal stops not being syllabified as onsets with the addition of enclitics, we likewise do not see [?] epenthesis with /V:=V:/ sequences. While /?/ cannot re-syllabify to an onset due to its status as part of a syllable nucleus (i.e., it is treated as equivalent to a long vowel by the phonology), there should be nothing preventing [?] epenthesis from occurring at enclitic boundaries. Featureally, there is no impediment to inserting a glottal stop to prevent hiatus, as we have seen above, but there must also be some factor preventing [?] as a viable option to prevent hiatus. I propose that Mandan also has a restriction against glottal stops appearing between enclitic boundaries. This restriction accounts for the fact that /?/ is unable to become an onset, as well as the fact that epenthetic [?] cannot occur at an enclitic boundary.

According to this restriction, having a glottal stop after a enclitic boundary edge is marked. This restriction motivates the need for another kind of epenthesis. Not permitting [?] at the right edge of a phrase prevents underlying glottal stops from being assigned to an onset position, since the addition of a vowel-initial enclitic means that the glottal stop would have to cross an enclitic boundary. By keeping underlying glottal stops in coda positions and preventing epenthetic glottal stops from generating at the point of hiatus, [r]-epenthesis is the only viable solution. The motivation for having competing epentheses could come from the fact that [r] is only found word-internally, never intially or finally. The flap could serve as a cue to the listener that the speaker has not finished a word and moved on to another word.³⁰ This cue might be useful for listeners, given the large amount of homophony in Mandan that has been caused by the historical merger of all Proto-Siouan obstruents to the plain series, as well as the merger of Proto-Siouan *y and *r to Mandan /r/.³¹

³⁰We see similar processes crosslinguistically, as Uffmann (2007) argues that rhotic epenthesis is typologically found in peak positions to break hiatus, versus glottal stop epenthesis, which is found in marginal positions within a prosodic structure.

³¹There is the possibility that the similitive suffix *-esh/-eshka* could be added to a /?/-final stem, but there are no instances of such a construction in the corpus, and there are no longer any L1 speakers to give judgments about wheather a /V?-eʃka/ sequence would yield [V.?eʃka], [V?eʃka], [V?reʃka], or something else. I conjecture that speakers might use [r]-epenthesis as a last resort, but there is no conclusive evidence for this in the corpus.

3.6 Word boundary-dependent morpho-phonology

One caveat to the above claim is that Mandan has a single word seems to optionally take the glide [w] instead of [r]: ‘mother,’ which is shown in (59) below. The variant with [r] is the only lexical item found in the corpus that behaves in this manner, and modern speakers will only use this form in spontaneous speech. Likewise, [Maximilian \(1839\)](#) only gives *kohíyre* for ‘his mother,’ so it is unclear if employing [w] instead of [r] represents a holdover from a non-Nuu’etaare variety of Mandan, if it is a fossilized lexical alternative to *kohíyre*, or if it is a innovation in Mandan where epenthetic elements across enclitic boundaries are assimilating features of the preceding vowel. The morpho-phonological breakdown of this doublet with both the [r] and [w] forms is shown below.

- (59) Variable realization enclitic boundary epenthesis

kohíyre ~ *kohíywe*
 ko-hüy=E
 3POSS.PERS-mother=sv
 ‘his mother’ ([Hollow 1970](#): 83)

Other Siouan languages, such as Lakota, employ glides intervocally to avoid hiatus. Thus, it is possible that what began as an excrescent process of glide insertion evolved to where that glide depended on the previous vowel to determine its quality: i.e., back vowels are followed by [w] and front vowels followed by [j]. All other instances of hiatus are resolved by a glottal stop ([Mirzayan](#) p.c.).

- (60) Hiatus resolution in Lakota

- a. *iyáphä* [i.'ja.p^xa]
 i-a-phä
 PV.INS-PV.SUPE-strike
 ‘to strike someone unintentionally’ ([Ullrich 2011](#): 249)
- b. *owóškate* [o.'wo.ʃka.te]
 o-o-škatA
 PV.LOC-PV.ILL-play
 ‘playground, park, recreation area’ ([Ullrich 2011](#): 442)
- c. *waáiye* [wa.'?a.?i.je]
 wa-a-iyA
 UNSP-PV.SUPE-speak
 ‘to gossip about people’ ([Ullrich 2011](#): 579)

However, this system appears to be in flux in many varieties of Lakota and Dakota. There are words that seem to categorically resist glide insertion like in

3 Phonetics and phonology

(61a) below. To whit, there are also words that allow for either the expected glide or glottal stop to avoid hiatus, such as (61b). Quizzically, there are also words that permit any epenthetic segment and are considered valid for all speakers as in (61c) below. These pronunciations come from *Mirzayan* (p.c.).

(61) Unexpected epenthesis in Lakota

- a. *iúŋšila* [i.'?üŋšila, *i.'jüŋšila]

i-uŋšila

PV.INS-take.pity.on

‘to take pity on someone by means of something’ (Ullrich 2011: 241)

- b. *oíháŋke* [o.'wi.há.ke ~ o.'?i.há.ke]

o-i-háŋke

PV.LOC-PV.DIR-portion

‘to come to an end’ (Ullrich 2011: 413)

- c. *huókaȟmi* ~ *huyókaȟmi* [hu.'?o.ka.x³mi ~ hu.'wo.ka.x³mi ~ hu.'jo.ka.x³mi]

hu-o-ka-ȟmi

bone-PV.LOC-INS.FRCE-be.crooked

‘popliteal fossa’ (Ullrich 2011: 177)

The variability in the epenthetic consonant utilized in Lakota appears to be a more extreme than the one-word variation in epenthesis we see in Mandan with /hū:/ ‘mother.’ The system of hiatus resolution in Lakota is more strongly informed by the quality of the vowel preceding the hiatus, and as such, more closely aligned with its phonetic characteristics. Mandan, on the other hand, seems to have a system of hiatus resolution that is independent of the features of its surrounding vowels (i.e., phonetically unmotivated) and reliant on a system of a single, specific consonant being inserted to avoid hiatus at enclitic boundaries (i.e., phonologically motivated). The existence of *kohíŋwe* raises the question of whether this doublet is evidence of an older system more similar to that in Lakota, where hiatus is resolved by inserting a glide that is shares features with non-low vowels, or whether it is part of an innovation by way of an incomplete phonological change where different kinds of epenthetic segments were possible, but the collapse in the population of Mandan speakers and the leveling of dialects reversed this change. This work argues in favor of the latter scenario. This particular topic is addressed further in §4.3.5.4, and does not detract from the overall point of the argumentation above: modern Mandan has a productive and predictable process of inserting [f] to break hiatus involving long vowels at

3.6 Word boundary-dependent morpho-phonology

boundaries involving enclitics.³²

Given what [Maximilian \(1839\)](#) writes about the Ruptaare variety of Mandan, which only has [?] epenthesis and no [r] epenthesis, the most likely scenario is that Ruptaare completely lost any kind of sonorant epenthesis that was part of a Pre-Mandan language by the time the Mandan had settled into two villages in the early 1800s, while Nuu'etaare had a robustly established epenthetic [r] by that same time period. Aside from 'mother' there could have been more doublets that survived into modern Mandan, but current speakers have been unable to recall any others.

The data presented thus far regarding the status of epenthetic [r] refutes [Hollow \(1970\)](#) and [Carter's \(1983\)](#) hypothesis that there are stems in Mandan that end in the coronal flap. This [r] is a predictable epenthetic element that occurs due to the hiatus caused by certain enclitics: e.g., the narrative evidential *-oomak*, which [Hollow \(1970\)](#) analyzes as having an allomorph *-roomak*. Instead of attributing the numerous instances of stems and postverbal elements that appear with [r] in some environments and lack it in others to phonology and allomorphy, we can accurately pin this elusive flap solely on phonology.

We have two distinct epenthetic processes in Mandan that act on two different domains: [?] insertion prevents hiatus within the domain of a morphological word, while [r]-insertion prevents hiatus between the domain of a morphological word and an enclitic. We can formalize these observations in the phonological rule depicted below:

(62) [r]-Epenthesis Rule

$\emptyset \rightarrow [r] / V(:/?) = _V(:/?)$

Insert a [r] between two vowels when an enclitic is added to a stem that either ends in a heavy open syllable (i.e., one that is long with no coda or one that is short with a coda [?]) abutting an onsetless syllable or a stem ending in a light open syllable abutting an onsetless heavy syllable.

This [r]-epenthesis is triggered by the presence of long vowels; a different process resolves hiatus between two short vowels between the domain of a morphological word and an enclitic, which is described below.

³²Another possibility is that *kohiq̣we* has a different morphology altogether, and the element *-we* is actually historically related to the indefinite *-we* that appears on pronominals and quantifiers: e.g., *kotéwe* /ko-ta-we/ REL-WH-INDF 'who.'

3 Phonetics and phonology

3.6.1.3 Short vowel elision

While the preferred method of resolving hiatus in Mandan is to produce an epenthetic consonant, there are instances where hiatus is resolved by vowel deletion, as exemplified below, where each of the examples in (63) features clause-final morphology that begins with an onsetless formative. Furthermore, the short vowel in these formatives is elided when following a stem with an open syllable that also contains a short vowel. This environment differs from the one previously described in §3.6.1.2 in that epenthetic [r] occurs to prevent hiatus at an enclitic boundary involving a long vowel or a stem ending in a glottal stop, whereas the deletions above all involve hiatus featuring only short vowels both stem-finally and enclitic-initially. We can see examples of vowels being deleted at enclitic boundaries in the data below.

(63) Examples of hiatus resolution via vowel deletion

- a. *q'skere* *tú'sh*
 $q's=krE$ $tu=o'sh$
horn=3PL *be.some=IND.M*
‘there were some horns’ (Trechter 2012b: 20)
- b. *Réma'k* *watéwe'na?*
 $re=wq'k$ $watewe=o'rə$
DEM.PROX=PSNL.LIE *what=INT.F*
‘What is this?’ (Kasak 2014a: 7)
- c. *kixéekerek*
 $ki-xee=krE=ak$
MID-be.quiet=3PL=DS
‘them having quit’ (Hollow 1970: 430)

If we apply the processes utilized thus far to resolve hiatus between two short vowels, we can see that they cannot account for short vowel elision. In the Ruptaare variety of Mandan during Maximilian’s (1839) time, this type of hiatus was resolved by inserting a glottal stop: e.g., *shi'osh* /*shi=o'sh/* ‘it is good’ in Ruptaare versus *shi'sh* in the Nuu’etaare of that time and in modern Mandan. As such, nineteenth century Ruptaare would select the glottal stop was the sole epenthetic segment.

This historical evidence, along with the data presented above in (63), demonstrates that modern Mandan morpho-phonology prioritizes retaining long vowels over deleting them more than it does for short vowels. This pattern of hiatus

3.6 Word boundary-dependent morpho-phonology

resolution protects long vowels over short vowels. As I have argued throughout this chapter, underlying glottal stops are moraic and pattern with long vowels. Therefore, the phonological rules of Mandan require that any contiguous sequence of moraic elements (i.e., /V:/ and /V?/) present in the input must be reflected in the output. All short vowels that are not followed by a coda glottal stop are monomoraic and are candidates for elision to avoid hiatus.

Bearing in mind that long and short vowels are treated differently with respect to hiatus resolution in Mandan, we must conclude that preserving the status of a heavy syllable has higher priority than preserving the status of a light syllable. These priorities will result in elision for short vowel-initial enclitics when following a stem ending in a short vowel. When adjoining to stems ending in long vowels or a short vowel and a [?] coda, such environments will always trigger [r]-epenthesis between the stem and the enclitic.

Ellision of short vowels who have a coda glottal stop is likewise prohibited for two reasons. Firstly, coda glottal stops are moraic and Mandan prioritizes maintaining the integrity of heavy syllables over light syllables. Secondly, deleting a short vowel that shares a syllable with a coda [?] can result in a heavy syllable abutting a moraic element, producing a trimoraic sequence.

For example, the word *síi* ‘be yellow’ when combined with the male-addressee indicative marker *=o’sh* results in *síiro’sh* ‘it is yellow,’ with [r]-epenthesis preventing hiatus between the final long vowel of the stem and the initial short vowel of the enclitic. We cannot simply delete the initial /o/ in *=o’sh* to produce **síi’sh*. A word like **síi’sh* is wholly ungrammatical in Mandan. Coda glottal stops are only permitted after short vowels. This restriction is due to the fact that coda glottal stops add to syllable weight, which is explained further in §3.6.4. As such, a [V?] syllable is already heavy, so a long vowel plus a [?] results in a superheavy syllable. Mandan clearly does not permit trimoraic syllables, so a superheavy syllable must be avoided, thus triggering [r]-epenthesis.

It is clear that Mandan robustly elides short vowels in short vowel-initial enclitics that follow short vowel-final stems, as the example below shows.

- (64) Elision of multiple short vowels to avoid hiatus

Tewé ^t	<i>tú’xere’sha?</i>
t-we=t	<i>tu=o’xrE=o’sha</i>
WH-INDF=LOC	be.some=DUB=INT.M

‘Where would there possibly be any?’ (Mixco 1997a: 34)

The root *tú* ‘to be some’ ends in a short vowel, and the epistemic modal *=o’xere* begins in a short vowel. The short vowel in *=o’xere* is deleted, yielding a stem of

3 Phonetics and phonology

tú’xere. This new stem likewise ends in a short vowel, so the male-directed allocutive interrogative enclitic *=o’sha* must in turn lose its initial /o/, yielding the proper output: *tú’xere’sha*. This process can be visualized below. Stem 1 represents the root *tú*, while Stem 2 is the result of concatenating *tú* plus *=o’xere*, onto which *=o’sha* must cliticize. The combination of Stem 1 with the enclitic *=o’xere* results in the deletion of the second short vowel in a /V₁V₂/ sequence, yielding a new stem, *tu’xere*. Likewise, this Stem 2 *tu’xere* concatenates with the enclitic *=o’sha*, which must undergo another deletion of the second short vowel in a /V₁V₂/ sequence. The end result of this process is the surface form *tú’xere’sha*.

- (65) Structural composition of *tú’xere’sha*

[[[*tu*]_{Stem 1} *=o’xere*]_{Stem 2} *=o’sha*]

As each postverbal element cliticizes onto its stem, the enclitic maximizes the segments already present in the stem and elides its initial vowel to avoid hiatus. As such, there is a conspiracy to maximize the segments in the stem, not necessarily a specific lexical item: e.g., a root or formative. Once an enclitic is properly realized with its accompanying stem, it forms a new stem, and any ensuing enclitics must be realized with that new stem in mind. This rule for short vowel deletion as a strategy for hiatus avoidance appears formalized below:

- (66) **Short Vowel Deletion Rule**

/V₂/ → Ø / V₁ =

Delete an initial short vowel in an enclitic where that enclitic abuts a stem ending in a short vowel.

This short vowel deletion rule specifically targets environments where two short vowels come into contact across an enclitic boundary. Word-internal hiatus is resolved through [?] epenthesis, as described in §3.6.1.1 above.

3.6.1.4 Summary of hiatus resolution processes

The productiveness of these observations is evident in their ability to handle the full range of situations in which hiatus occurs: word-internally and at enclitic boundaries. The three different tactics for hiatus resolution are predictable and dependent on the precise cause of the hiatus. Word-internal morphological concatenation involves [?] epenthesis, as it is the least-marked segment according to Prince & Smolensky (1993) and Lombardi’s (2001) markedness hierarchy. Hiatus caused by enclitics becoming prosodically linked to stems ending in vowels or glottal stops have two different strategies: short vowels outside of the stem are

3.6 Word boundary-dependent morpho-phonology

elided, while an epenthetic [r] breaks up hiatus between long vowels or stems ending in glottal stops and the following enclitics to avoid creating constructions where a [?] appears at the edge of an enclitic boundary, rendering epenthetic [?] at enclitic boundaries impossible, disqualifying any other possible wordforms that delete material from a stem in favor of preserving material by generating the alternative epenthetic [r] before an enclitic.

3.6.2 Metathetical processes

In addition to having two different forms of epenthesis, Mandan also features two different kind of metathesis. Both processes are repair mechanisms to avoid illicit clusters, and both of them are predictable synchronic processes. One metathetical process prevents glottal stops from being the final element of a consonant cluster (see 3.6.2.1), while the other process prevents surface realizations of [kp] sequences (see 3.6.2.2). Both processes are noteworthy in that they are restricted to preventing illicit clusters within a single morphological word. Metathesis does not occur across a word boundary because metathesis is sensitive to word boundaries.

3.6.2.1 Glottal stop metathesis

In §3.1.2.2, I have explained that glottal stops do not occur word-initially or root-initially. This restriction against word-initial glottal stops is rooted in a historical change where Proto-Siouan words that began with *? metathesized with a vowel, moving the glottal stop from the onset to the coda.

3 Phonetics and phonology

(67) Historical glottal stop metathesis

Proto-Siouan	Mandan
*?a + *-t(a)	q't~á't
DEM + LOC	‘that one (far away)’
*wa-?ij-he	mí'he
INAN.CLF-wear.around.shoulders-NOM	‘shawl, blanket’
*ki-?uy-te	kú'te
DAT-throw-AUG	‘to throw somthing’
*?oo	ó'
‘be.PL’	‘to be’
*x?ehe	xé'he
‘drip’	‘rain’

Mandan not only does not permit glottal stops in word-initial positions, it does not permit /ʔ/ to be part of an onset cluster. In each of the Proto-Siouan forms above, we can see a word- or root-initial glottal stop manifest as a coda glottal stop in Mandan. The distal demonstrative *?a combines with the locative *-ta to become q't in modern Mandan. Similarly, the *? in PSi *wa-?ij-he metathesizes with the vowel in its syllable nucleus. The plural copula *?oo transparently metathesizes with the vowel, producing ó’ ‘to be’ in Mandan. Metathesizing the /ʔ/ to a coda position in a syllable containing a long vowel also truncates the long vowel to avoid creating trimoraic syllables.

Mandan productively inserts glottal stops to prevent hiatus within a stem, as described in §3.6.1.1. This is a common source source of surface glottal stops. Another major source of surface glottals are from the allophones of certain prefixes. These prefixes, such as the first person stative marker *ma-* /wá-/ or the second person possessive *ni-* /rj-/ , are alternatively realized as underlying /Cʔ-/ clusters instead of /CV-/ sequences: i.e., /wá-/ has the allomorph /w'-/ and /rj-/ has the allomorph /r'-/ before vowel-initial stems. These /Cʔ-/ clusters are not permitted in surface representations in Mandan due to the constraint against consonant clusters having a [ʔ] as their second element, so metathesis takes place as a repair mechanism. We can see examples of this process in contemporary Mandan in the examples below.

(68) Synchronic [?] metathesis

- a. *wá'ts*
w'-at=s
1POSS=father=DEF
‘my father’

3.6 Word boundary-dependent morpho-phonology

- b. *rá're*
r'-aa=E
2POSS-arm=sv
'your arm'
- c. *wá'kana'ko'sh*
w'-aaki-rq'k=o'sh
1s-be.above-PSNL.SIT=IND.M
'I ride [on horseback]'
- d. *kú'he*
k'-uh=E
3POSS.PERS-wife=sv
'his wife'
- e. *ko'áakis*
ko-aaki=s
REL-be.above=DEF
'the one on top'

In (68a) through (68d), the prefixes involved have allomorphs that consist of a consonant and a glottal stop: e.g., the third person personal possessive *ko-* /*ko-*/ has the allomorph /k'-/ when before a nasal vowel. The phonetically identical relativizer *ko-* does not have any allomorphs, and as such does not trigger glottal stop metathesis. A similar argument can be made that this allomorphy occurs even when the prefix is added to a stem beginning with a long vowel, such as in (68c), where /wá-/ becomes /w'-/ before the stem *áakana'ko'sh*, yielding *wá'kana'ko'sh* 'I ride on horseback.' The long vowel contracts when followed by a coda glottal stop to avoid creating a trimoraic syllable. This process of long vowel truncation is likewise seen in (67) above, such as in *mi'he* 'shawl', where the long vowel in *?*ii* 'to wear about the shoulders' becomes short when the glottal stop metathesizes to a coda position. While the data in (67) demonstrate that glottal metathesis is a diachronic sound change that occurred at a stage in development prior to modern Mandan, (68) shows that glottal stop metathesis is still a productive part of modern Mandan grammar.

As argued above, we can classify these differences in surface forms involving certain prefixes as allomorphic, and not some phonological process whereby the vowel in the prefix is syncopated. While syncope may have been part of a regular phonological rule at some point in the diachrony, this syncope became less regular over time and certain formatives came to be reanalyzed as having different forms when added to vowel-initial stems.

3 Phonetics and phonology

A slightly more complicated situation arises when these underlying /C?/- allomorphs prefix onto stems that begin with long vowels. The noun *áare* ‘arm’ is one such stem, where the first person possessive marker *mi-* /w̥i-/ appears as its allomorph /w̥-/ due to its prefixing onto a vowel-initial environment. Metathesis must occur to avoid violating the phonotactic constraint against having a glottal stop as the second element of a consonant cluster, but the metathesis sets up the condition for the syllable to contain a long vowel and a glottal stop coda. Such sequences are illicit in Mandan, due to the fact that [V:?] syllables would be trimoraic and would thus violate the phonotactic constraint against having a long vowel belong to a syllable containing a moraic glottal stop in the coda.

The actual output of *áare* with first person possession marking is *wá're* ‘my arm.’ Any possible word form with a surface [C?] is not viable, so the [?] must metathesize with the long vowel. When /?/ enters the coda, the long vowel truncates to avoid violating the restriction against trimoraic syllables. Normally, Mandan prioritizes the preservation of heavy syllables, as we have seen in how hiatus involving heavy syllables is treated in this chapter, but it appears that a super-heavy syllable is ungrammatical and must be repaired by eliminating one of the morae.

The primary driver of glottal stop metathesis is a restriction against surface [C?] clusters. It is thus preferable to metathesize the /?/ with its following vowel than it is to preserve the underlying linearity. All glottal stop metathesis is word-internal, and does not happen across word boundaries. No synchronic Mandan words begin with word-initial glottal stops due to the diachronic metathesis described in (67), so we are unable to test whether or not this metathetical process would take place across word boundaries, such as with compounds. Given the behavior of the other metathetical process in Mandan, it is likely that a word boundary would be a blocking mechanism for metathesis, as this is precisely the same condition that blocks velar-bilabial metathesis.

3.6.2.2 Velar-bilabial stop metathesis

The other instance of metathesis found in Mandan is likewise conditioned by the conspiracy in Mandan phonotactics to avoid a marked cluster. Instances of tautosyllabic [kp] clusters on the surface are illicit, and when /k/ and /p/ come into contact through some morphological operations, the [p] must precede the [k] on the surface, as demonstrated by (69a) through (69c) below. This restriction against velar-labial clusters is limited to velar and bilabial stops, not all segments that are velar or bilabial in general. Velar fricatives are permissible before bilabial

3.6 Word boundary-dependent morpho-phonology

stops, which (69d) shows. As such, this metathesis is specific to the combination of /k/ and /p/, rather than all velars followed by /p/.³³

(69) Examples of /kp/ metathesis

- a. *úpka*
ük-pa
hand-head
'thumb' (Hollow 1970: 35)
- b. *pka'úux*
k-pa-uux
SUUS-INS.PUSH-be.broken
'to break something of one's own' (Hollow 1970: 263)
- c. *órapkakishinite*
o-ra-k-pa-kish=rít=E
PV.IRR-2A-MID-INS.PUSH-wipe=2PL=SV
'that you (pl.) wipe them out' (Trechter 2012b: 210)
- d. *maxpé*
waxpe
nine
'nine' (Hollow et al. 1976: 21)

The ban on [kp] clusters can be motivated by a phonotactic restriction in Mandan, where such clusters are highly marked. For that, the following rule applies:

(70) /kp/ Metathesis Rule

/kp/ Ø → [pk]

Whenever an underlying /kp/ cluster occurs, the /k/ becomes the second element in the cluster, resulting in a surface [pk] cluster.

One exception to this generalization is that [kp] is possible in compounds when each segment is at a word boundary.

³³Clusters involving the velar stop plus the labiovelar glide, /kw/, are also possible, but a Dorsey's Law vowel will inevitably cause an excrecent vowel to interrupt the /k/ and the /w/: /i-kwa=taa/ to [i.k^awa.taa] 'against' (Hollow 1970: 125). See §3.2.3 for further discussion of Dorsey's Law vowels and the behavior of sonorants in clusters.

3 Phonetics and phonology

(71) Surface [kp] in compounds

- a. *manúuxikpa*
warúuxik#pa
ghost#head
'skull' (Hollow 1973b: 7)
- b. *Weróokpa*
wrook#pa
buffalo.bull#head
'Buffalo Bull Head' (Densmore 1923: xviii)

The fact that [kp] is permissible in (71a) but not in (69) indicates that the phono-tactic restriction against [kp] pertains to [kp] clusters within a single stem. For example, *pka'úx* 'to break one's own' cannot be **kpa'úux* because its morphological structure is simplex: i.e., [k-pa-uux]. The word *manúuxikpa* 'skull' allows for [kp] due to the fact that it has a compound structure, which is [[*warúuxik*][*pa*]]. As such, we cannot say that this constraint in Mandan rules out [kp] clusters across the board, but rather that it specifically considers stem-internal [kp] clusters to be illicit.

3.6.2.3 Summary of metathetical processes

Throughout §3.6.2, I have demonstrated that there is not just one but two different metathetical processes in Mandan. Both these processes serve to avoid illicit surface clusters: clusters whose last element is the glottal stop, [C?], and sequences of [kp]. Both of these metathetical processes take place as operations of last resort. Instead of appealing to yet another kind of epenthesis or simplifying these clusters by deleting one segment, Mandan transposes one of consonants in these clusters. For clusters ending in [?], the [?] metathesizes with the following vowel. Clusters involving /kp/ involve the order of these consonants reversing to [pk]. The only exception for this is when /kp/ clusters occur in compounds.

3.6.3 Nasal harmony

The nasal sonorants [m] and [n] are some of the most common surface segments in Mandan. In Kennard (1936), these two nasal consonants are listed as being phonemic: i.e., /m/ and /n/. However, Hollow (1970) demonstrates that all surface nasal consonants arise due to contact with an underlying nasal vowel. This

3.6 Word boundary-dependent morpho-phonology

lack of phonemic nasal consonants in Mandan is typologically rare, with perhaps fewer than two percent of languages sharing this gap in their phonemic inventories (Sampson 1999, Maddieson 2013a).

As previously discussed, Hollow (1970) and Mixco (1997a) state that [m] and [n] are allophones of /w/ and /r/, respectively, and are only realized as nasals when before a nasal vowel through regressive nasal assimilation, as seen below with the nasal spread underlined.

(72) Regressive nasal assimilation

- a. [nã:.m̩n̩i]
/ra:wri/
three
'three'
- b. [mã.nã:.te?ʃ]
/wa-rãätE=o?ʃ/
1A-stand.up=IND.M
'I stand up' (Hollow 1970: 173)
- c. [mã:.mã.nã:.nã.x̩n̩.sto?ʃ]
/wa:-wa-ra-rũ:=řix=řít=t=o?ʃ/
NEG-UNSP-2A-abduct=NEG=2PL=POT=IND.M
'thou shalt not commit adultery' (Hollow 1970: 22)

In (72a), the nasality from the underlying /i/ in *náamini* spreads leftward, adding [+nasal] to voiced segments. Since the only underlyingly voiced consonants in Mandan are sonorants, /w/ and /r/ are able to take on this nasal feature. Nasality is able to spread from a stem to a prefix, which (72b) demonstrates. In (72b), not only does nasality spread leftward from /ã:/ onto the /r/ to make it [n], but this harmony continues past the boundary of the stem and onto the /a/ in the first person active prefix /wa/, which then causes the /w/ to nasalize to [m]. The last example in (72c) illustrates that this nasal harmony can cause distant segments that are not in contact with a syllable bearing an underlying nasal vowel to pick up nasal features.

Hollow (1970: 21) describes regressive nasal assimilation in Mandan as being optional across morpheme boundaries, but obligatory within a morpheme, which he codifies below:

3 Phonetics and phonology

(73) Hollow's (1970: 21) Regressive Nasal Assimilation Rule

$$\left\{ \begin{array}{l} \text{Resonant consonants} \\ \text{Apex vowels} \end{array} \right\} \rightarrow [+nasal] / \underline{[+nasal]}$$

The apex vowels consist of non-mid vowels: i.e., /a i u/. Hollow (1970) classifies /w/ and /l/ as resonants, and also places /h/ in that category. Hollow (1970) does not elaborate on why he classifies /h/ as a resonant with the two sonorant consonants. One possibility is that /h/ can optionally become voiced intervocally, and nasality only spreads along voiced segments: e.g., /paahí/ 'porcupine' can be realized as either [pa:.hí?] or [pā:.fí?].³⁴

The rule given in (73) stipulates that leftward nasal harmony in Mandan spreads along voiced segments that are not mid-vowels. As such, any voiceless segment or mid-vowel will act as a blocking mechanism for nasal harmony. This behavior is demonstrated below, again with the nasal spread highlighted with an underline.

(74) Blocking environments for regressive nasal harmony

- a. [nū.mā?k]
/ruwā?k/
man
'man'
- b. [i.stā.mī?]
/istawī?/
eye
'eye'
- c. [i.ta.hī?nū]
/i:tahru?/
neck
'neck'
- d. [nā.nī.ho?ʃ]
/ra-fih=o?ʃ/
2A-breathe=IND.M
'you breathe' (Hollow 1970: 181)

³⁴The fully nasalized version of 'porcupine' is much more common in the corpus: i.e., [pā:.fí?].

3.6 Word boundary-dependent morpho-phonology

- e. [m̩i?.ti.k^ere.se:.n̩ā]
 /w̩i?ti=k̩E=s=e:=r̩ā/
 village=3PL=DEF=DEM.DIST=TOP
 'the villagers [there]' (Hollow 1973b: 313)
- f. [o:.xa.re:.n̩ā]
 /o:xa=e:=r̩ā/
 fox=DEM.DIST=TOP
 'the fox [there]' (Hollow 1973b: 63)
- g. [m̩ā:.m̩i.n̩i.ha:.xi?.re]
 /wa:-w-r̩i-hE=xi=o?re/
 NEG-1A-2s-see=NEG=IND.F
 'I did not see you' (Hollow 1973a: 72)
- h. [i.ʃka n̩ā:.m̩i.k^ere]
 /iʃka r̩a:w̩i=k̩E/
 only three=3PL
 'only three of them' (Trechter 2012b: 168)

In (74a), (74d), and (74g), we see nasal harmony spread leftward from an underlying nasal vowel to the left edge of the word no differently than we saw in (72). However, we see in (74b) and (74c) that a voiceless segment is preventing the spread of the [+nasal] feature. The mid-vowels in (74e) and (74f) likewise prevent the leftward spread of nasality. Word boundaries also prevent the spread of nasal harmony, even if there are segments that are viable targets for this process, as we see in (74h).

The data above in (74) show that nasal harmony is a process that occurs not just within a single root or formative. This process is not strictly a local process. Rather, nasality can spread leftwards along possible segments until reaching some featurally motivated blocking environment. The data above demonstrate that there are three blocking environments:

(75) Blocking environments for nasal harmony

- a. Mid vowels: Mandan does not permit nasal mid vowels, so nasal harmony cannot manifest on /e e: o o:/.
- b. Voiceless consonants: Nasal harmony can only manifest on voiced segments, and the only voiced segments in Mandan are vowels and /w/ and /r/, so anything that is [-voice] blocks the spread of nasal harmony.

3 Phonetics and phonology

- c. Word boundaries: Nasal harmony is a word-level process and it cannot spread from one word to another.

These constraints have so far been able to accurately predict the actual output with respect to nasal harmony, even when several of the examples have shown that nasal harmony is able to spread across long distances, provided that the right featural environment exists: i.e., non-nasal voiced segments that are not mid-vowels. These constraints notwithstanding, there are a large number of words where nasal harmony does not occur where expected. Nasal spread is highlighted by an underline.

(76) Unexpected lack of nasal harmony

- a. [i.mã.ʃut], *[i.mã.ʃut]
/i-wãʃut/
 PV.INS-clothe
 'clothes, shirt, dress, coat'
- b. [i.mĩ.ka.wa.tke], *[i.mĩ.ka.wa.tke]
/i-wĩ-ka-watke/
 PV.INS-1POSS-INS.FRCE-put
 'my driftwood doctor' (Hollow 1970: 87)
- c. [a:m̩in̩i.re:hto?ʃ], *[ã:m̩in̩i.re:hto?ʃ]
/a-w-ři-rE:h=kt=o?ʃ/
 PV.TR-1A-2S-go.there=IND.M
 'I will take you' (Hollow 1973b: 3)
- d. [ⁿdi:m̩ixo?ʃ], *[n̩i:m̩ixo?ʃ]
/rV-i-wřix=o?ʃ/
 1A.PL-PV.INS-play=IND.M
 'we played' (Hollow 1970: 305)
- e. [ⁿda:.ha:mĩ], *[ⁿda:.hã:mĩ]
/rE:h=ha:=awĩ:/
 go.there=SIM=CONT
 'while he was going along' (Hollow 1973b: 269)
- f. [hu:n̩i], *[hu:n̩i]
/hu:=ři/
 come.here=ss
 'he came and...' (Hollow 1973b: 230)

3.6 Word boundary-dependent morpho-phonology

- g. [pxi.nā.teʔʃ], *[pxi.nā.teʔʃ]
 $/pxi=rā:tE=oʔʃ/$
 sneeze=PRSP=IND.M
 'he almost sneezed' (Hollow 1970: 468)
- h. [ⁿda:h^ara:nī], *[ⁿda:hānā:nī]
 $/rE:h#hrE=rī/$
 go.there#CAUS=ss
 'he put it there and...' (Hollow 1973a: 26)
- i. [nū:?e.ta:mī:hs], *[nū:?e.tā:mī:hs]
 $/rū:?eta:#wī:h=s/$
 Mandan#woman=DEF
 'the Mandan woman' (Hollow 1973b: 87)
- j. [ⁿde:hka mā.he.ki], *[ⁿde:hkā mā.he.ki]
 $/rE:h=ka wā-hE=ki/$
 go.there=HAB 1s-see=COND
 'if she saw me now' (Hollow 1973a: 21)

In all of the words in (76), the featural conditions are met such that nasal harmony should occur. All feature an apex vowel that precedes a syllable containing an underlying nasal vowel, such as /hu:=rī/ 'he came and...', and nasal harmony resolves as predicted within the syllable containing /i/, yielding [nī]. However, nasal harmony does not spread onto the /u:/, despite the fact that /u u:/ can participate in nasal harmony under normal circumstances: e.g., /ruwā?k/ → [nū.mā?k] 'man.'

There are three observations in (76) above for what blocks the spread of nasal harmony: preverbs, enclitic boundaries, and word boundaries. In (76a) through (76c), nasality spreads leftward from a morphological element towards the left edge of the word, but does not trigger nasal harmony onto a preverb, even when that preverb is an apex vowel. Similarly, in (76d) through (76h), nasality spreads leftward from an enclitic and moves to the edge of the enclitic, but does not move onto its stem, regardless of whether that stem is a lexical root or another enclitic. The final observation is that nasal harmony is blocked from spreading past a word boundary. We see this blocking effect in compound nouns like the one in (76i) as well as in independent prosodic words like in (76j).

In all the examples in (76) above, there must be some morphologically motivated reason for why nasal harmony does not occur. As such, we cannot attribute these non-featural blocking environments to the phonology alone.³⁵ En-

³⁵The position taken in Kasak (2019) is that words in Mandan can have more articulated internal

3 Phonetics and phonology

clitic boundaries, word boundaries, and preverbs are also blocking environments for nasal harmony in Mandan. Given the data we have seen in (76) above, combined with those we saw previously in (74), we can revise the blocking environments:

- (77) Blocking environments for nasal harmony (revised)
- a. Mid vowels: Mandan does not permit nasal mid vowels, so nasal harmony cannot manifest on /e e: o o:/.
 - b. Voiceless consonants: Nasal harmony can only manifest on voiced segments, and the only voiced segments in Mandan are vowels and /w/ and /r/, so anything that is [-voice] blocks the spread of nasal harmony.
 - c. Word boundaries: Nasal harmony is a word-level process and it cannot spread from one word to another.
 - d. Enclitic boundaries: Nasal harmony cannot spread leftward over an enclitic boundary.
 - e. Preverbs: Mandan does not permit nasality to spread onto a preverb.

The principal issue with previous researchers describing nasal harmony in Mandan is that their generalizations did not capture the full range of blocking environments for this phonological process. Phonology alone is unable to account for why nasality cannot continue spreading leftward across certain environments. As such, it is only through examination of Mandan's morphology and morphological junctures within words that the pattern becomes clear. Mandan is not the only Siouan language to exhibit nasal harmony, but it the only Siouan language that has been documented to have purely regressive nasal harmony. Hoocâk and Lakota have both been described as having systems of nasal harmony, but more research is needed to investigate how Mandan's system of nasal harmony fits within the typology of nasal spreading in Siouan (Kasak & Lundquist 2019, Panick 2021).

3.6.4 Stress

Mandan has a robustly predictable system of primary stress assignment. Primary stress is iambic and weight-sensitive, so primary stress typically appears on the

structure: i.e., composite words, where there is a morphological head and then other material within the domain of the overall word that is not a word itself. This structure resembles a compound in that there is some word that is the head of the overall word (i.e., the word that determines its semantic category), resulting in a structure like [X [Y]_{Head}]. This analysis is not vital for understanding the “unexpected” blocking environments described above.

3.6 Word boundary-dependent morpho-phonology

second syllable, unless the first syllable is heavy, in which case the word has first-syllable stress. There is no primary stress on the third syllable or beyond. Words containing a single light syllable can still bear primary stress, so we can tell that footing for primary stress does not cross word boundaries: i.e., a poorly formed iamb is preferable to a well-formed iamb that is footed across a word boundary.

This behavior for stress is not remarkable by itself. What is noteworthy, however, is that preverbs typically appear with primary stress, even though most preverbs are light syllables. Even if forming an iamb is possible, a word with a preverb with no preceding morphological material will always feature first-syllable stress, despite the fact that a well-formed iamb is possible. This stress assignment behavior seems unexpected at first, but if we analyze words with preverbs as having internal word boundaries, then this generalization about stress not being footed across word boundaries handily explains the presence of a light first syllable bearing stress over even a heavy second syllable.

3.6.4.1 Previous descriptions of Mandan stress

One aspect of the sound system of Mandan that has been treated with the highest degree of inconsistency is that of word-level prominence marking. The aristocrat and adventurer Prince [Maximilian \(1839\)](#) uses German orthographic convention to transcribe Mandan, and typically marks where he hears primary stress with an acute accent mark.

(78) Accentuation in [Maximilian \(1839\)](#)

⟨tapsá⟩	[(ta.'psa)]	tapsá	‘ash tree’
⟨máhnu⟩	[(‘mā:).nū]	máanu	‘turkey’
⟨uihkchák-chäkä⟩	[(‘wi:).kxa:.kxe.ka]	wíikxaakxeka	‘magpie’
⟨scháh-hä⟩	[(‘fa?).he]	shá'he	‘hoof’

[Maximilian \(1839\)](#) is often able to discern vowel length, which he typically marks in the German orthographic custom by following a vowel with an ⟨h⟩. However, he does sometimes conflate vowel length and stress, as we see in *wíikxaakxeka* ‘magpie’ in (78) above.

The second-oldest Mandan word list by the trader [Kipp \(1852\)](#), whose wife was Mandan, sparingly uses diacritics. When [Kipp](#) does include diacritic marks, an acute accent typically appears on a word-final ⟨e⟩, and it is unclear whether this acute accent mark is meant to indicate that the sound is not silent as in English, if it is to emulate the sound of the ⟨e⟩ with *accent aigu* as in French (i.e., [e] instead of [ɛ]), or if the acute accent mark indicates stress.

3 Phonetics and phonology

(79) Accentuation in Kipp (1852)

⟨warade⟩	[('w ^a ra?).re]	<i>wará're</i>	‘fire’
⟨wahe⟩	[('wa?).he]	<i>wá'he</i>	‘snow’
⟨xaxe⟩	[('xā).he]	<i>xáhe</i>	‘grass’
⟨xooré⟩	[('xo:).re]	<i>xóore</i>	‘ice’
⟨ääpé⟩	[('a:).pe]	<i>ääpe</i>	‘leaf’
⟨manisérute⟩	[('m ^í n̄s).e:.ru.te]	<i>miníseerute</i>	‘dog’

In the case of the last two words above, ‘leaf’ and ‘ice,’ both words contain a heavy syllable followed by an unstressed final syllable. Kipp (1852) includes an ⟨é⟩ word-finally, even though that syllable should not bear any kind of stress, while he neglects to put any diacritic on the final vowel in ‘fire.’ Given this inconsistency throughout his wordlist, and given the lack of accentuation on any other vowel, we cannot surmise precisely what Kipp’s intentions are. This wordlist was created at the behest of Schoolcraft (1853), who was charged with creating a comprehensive survey of the indigenous peoples of the United States and their languages through the Bureau of Indian Affairs.

Following his fieldwork on the Fort Berthold Reservation, Kennard (1936) publishes a brief grammatical sketch of Mandan wherein he states that stress is not predictable and can shift along a stem when affixes are added. Kennard gives the following examples of how affixation affects stress placement.

(80) Accentuation in Kennard (1936)

⟨núm ^a k⟩	[(nū.'mā?k)]	<i>numá'k</i>	‘man’
⟨numákci⟩	[(nū.'mā?k).fi]	<i>numá'kshi</i>	‘chief’
⟨kínumákci⟩	[(ki.'nū).mā?k.fi]	<i>Kinúma'kshi</i>	‘Royal Chief’
⟨núm ^a káki⟩	[(nū.'mā?).ka:.ki]	<i>numá'kaaki</i>	‘people, human’
⟨ákinumákaki⟩	[(a).ki.nū.mā?.ka:.ki]	<i>Áakinuma'kaaki</i>	‘Native American’

Though Kennard’s (1936) original orthography attempts to make note of primary and secondary stress, he is very inconsistent in where he marks stress. There are numerous instances where the same word has stress on differing syllables within the same sentence. This wide discrepancy in stress marking largely comes from Kennard conflating stress and phrasal pitch accent.

The most divergent approach to dealing with Mandan stress is found in Hollow (1970), who states that Mandan does not have vowel length, contra Kennard (1936) and Maximilian (1839). Hollow proposes that stems in Mandan either have or lack underlying stress. Furthermore, Hollow (1970: 50) proposes the following system for stress:

3.6 Word boundary-dependent morpho-phonology

In two syllable roots with stress on the second syllable, and with stressed monosyllabic verb roots preceded by instrumental prefixes, stress may be moved to the first root syllable or to the instrumental prefix if the stress movement would result in the stress being placed on the second syllable of the derived form. Details of stress placement under these conditions have not be worked out.

Hollow's (1970) generalization is codified with two rules: one to place primary stress, and another to remove the underlying stress from the remaining elements in a word.

(81) Stress assignment rules in Hollow (1970)

a. **Primary Stress Assignment Rule**

$V \rightarrow [+stress] / \#C_0 _ C_0 V[-stress]$

Assign stress to the first syllable preceding an unstressed syllable.

b. **Underlyinig Stress Deletion Rule**

$V \rightarrow [-stress] / V^{[+stress]} \Sigma_0 _ \#$

Delete the [+stress] feature from any syllable that appears after a stressed syllable.

We can see the application of these stress rules at work below in an example that Hollow (1970: 50) gives. The data here use Hollow underlying representation and phonetic interpretation of the words *wáaratookaxih* 'old man.'

(82) Stress assignment and deletion in Hollow (1970)

/wá- + ratór + -ka + xíh/

wá- + ratór + -ka + xí final resonant deletion

wá- + rató + -ka + xí preconsonantal /r/ deletion

wá- + rato + -ka + xi stress

<wáratokaxi>

Hollow (1970) is generally correct in where he places primary stress in his transcribed narratives, but the application of these stress rules is inconsistent throughout his dictionary and grammar. Furthermore, he states that stress can fall on vowels he describes as epenthetic, which spectral analysis shows not to be the case. Mixco (1997a) largely follows Hollow's (1970) interpretation of some roots having underlying stress, but acknowledges that certain roots contain underlyingly long vowels.

Some contemporaries who have worked with Mandan have even described Mandan as having a pitch accent system rather than a stress accent system (Boyle

3 Phonetics and phonology

p.c., Park p.c.). Park (p.c.) has even gone so far as to posit that Mandan has a pitch accent system whereby high tone can be found on multiple adjacent morae, with some long vowels having pitch contour differences.

(83) Park's (p.c.) pitch marking

$\langle \text{taxáráxe} \rangle$	/ta-xrax=E/	[(ta.'x ^a ra).xe]	<i>taxaráxe</i>	'his chest'
$\langle \text{tóóp} \rangle$	/top ~ to:p/	[('top) ~ (to:p)]	<i>tóp</i>	'four'

The interaction between pitch and stress in Mandan is discussed in §3.6.4.4.1, wherein I explain that the perception of stress or high tone on Dorsey's Law vowels come from the physiological process of F0 undershoot on the way to the target vowel. The perception of a long rising vowel for *tóp* is an elicitation effect caused by one speaker emphasizing it when in isolation. More on the interaction of pitch and stress is dealt with in §3.6.4.4.1 below.

Overall, any researcher who has discussed stress in Mandan has stated that stress assignment is something that must be worked out in future. No author revisits the issue of stress in subsequent scholarships, and as such, it is left to this work to re-examine it. In this section, I discuss the overarching pattern for primary stress assignment in Mandan, as well as secondary stress, which a topic heretofore untouched by previous scholars. I argue that primary stress assignment is quite regular and generally predictable, with the exception of certain fossilized compounds where stress seems to be lexical synchronically but still adhere to regular stress placement rules if viewed diachronically.

3.6.4.2 Default primary stress assignment

In their analysis of the sound system of Proto-Siouan, Rankin et al. (1998) note that primary stress in Proto-Siouan is overwhelmingly on the second syllable, unless the first syllable bears a long vowel.³⁶ This pattern holds true even today

³⁶We can reconstruct stress in Proto-Siouan, in part, through Carter's Law, where a plain stop in Pre-Proto-Siouan becomes pre-aspirated in Proto-Siouan (Rankin et al. 1998).

(2.i) Carter's Law:

Pre-Proto-Siouan **C > Proto-Siouan *hC / _[́]V(V)

Preaspirated stops have different reflexes than plain stops in daughter languages, so this former allophony in Pre-Proto-Siouan had become reanalyzed as being a phonemic difference in Proto-Siouan (Rankin p.c.). The one Siouan language that flouts this stress pattern in Crow, which developed a Japanese-style pitch accent system where high pitch originates on a mora and spreads towards the leftmost biomoraic syllable bearing a long vowel: /maa-iíhulí#shoopé/ → [bááííhúlísóópé] 'table,' but /ana-maa-chimmí-uu=a/ → [ammááchímmúua] 'school' (cf. Graczyk 2007 and Wallace 1993).

3.6 Word boundary-dependent morpho-phonology

for many Siouan languages across all branches of the Siouan language family: e.g., Hidatsa (Boyle et al. 2016), Lakota (Boas & Deloria 1941), Tutelo (Oliverio 1997), and Ioway-Otoe (Whitman 1947). With this family-wide pattern in mind, I have proposed that Mandan features a similar system of primary stress assignment (Kasak 2014b). Stress in Mandan is robustly drawn to the second syllable when a word begins with two light syllables, but the first when the word begins with a heavy syllable. This pattern is demonstrated below.

The first four items in (84) involve two initial light syllables. In such cases, stress falls upon the second syllable. Similarly, in cases where the second syllable is heavy (i.e., it contains a long vowel or coda [?]), stress still falls on the second syllable. We can contrast this pattern with the one seen in (85), where an initial heavy syllable attracts stress, even if the word begins with two heavy syllables, as we see in *kóoxq’te* ‘corn.’ The vast majority of morphologically simple words in Mandan conform to this pattern.

(84) Second-syllable stress

/iʃak/	[(i.'ʃak)]	<i>ishák</i>	‘he, she, they’
/taʃka/	[(ta.'ʃka)]	<i>tashká</i>	‘how’
/restā/	[(ⁿ de.'stā)]	<i>restq̄</i>	‘bullsnake’
/pasāh/	[(pa.'sāh)]	<i>pasq̄h</i>	‘creek, stream’
/arikra/	[(a.'ri).k ^a ra]	<i>Aríkara</i>	‘Arikara’
			(< Ar. <i>árikaraaru</i> ‘stag’)
/ihātu/	[(i.'hā).tu]	<i>Ihátu</i>	‘Yankton’
			(< Dak. <i>Iháŋktȟuŋwany</i> ‘dwelling at the end’)
/iwā:=E/	[(i.'mā:).re]	<i>imáare</i>	‘a body’
/paxa:=E/	[(pa.'xa:).re]	<i>paxáare</i>	‘beloved’
/ta-wī?#ti/	[(ta.'mī?).ti]	<i>tamí'ti</i>	‘his/her/their village’
/ru-pī?x=E/	[(ⁿ du.'pī?).xe]	<i>rupi'xe</i>	‘to scatter (by hand)’

(85) First-syllable stress

/pā:pi/	[(pā:).pi]	<i>páqpi</i>	‘thin’
/wa:xtik/	[(wa:).xtik]	<i>wáaxtik</i>	‘jackrabbit’
/a:ki=ta:/	[(a).ki.ta:]	<i>áakitaa</i>	‘above’
/ko:xā?te/	[(ko:).xā?.te]	<i>kóoxq’te</i>	‘corn’
/wī?h=E/	[(mī?).he]	<i>mí'he</i>	‘robe’
/rā?=o?ʃ/	[(nā?).ro?ʃ]	<i>ná'ro'sh</i>	‘it aches’
/w?-a:kup/	[(wa?).kup]	<i>wá'kup</i>	‘war bonnet’
/se?=o?re/	[(se?).ro?re]	<i>sé'ro're</i>	‘it came apart’

3 Phonetics and phonology

One of the major phonetic cues for primary stress is a raised F0 value. We can see the increase in pitch for the third person pronoun *ishák* in Figure 3.20 and the interrogative *tashká* in Figure 3.21 on the spectrograms below. These two words are typical LL iambs, so we see a pitch curve start at a significantly lower level on the first syllable, then rise to a peak within the beginning of the vowel window and then dropping. This pitch curve is a regular process in Mandan in that the target for the F0 peak aligns to the left edge of the vowel in the syllable bearing primary stress.

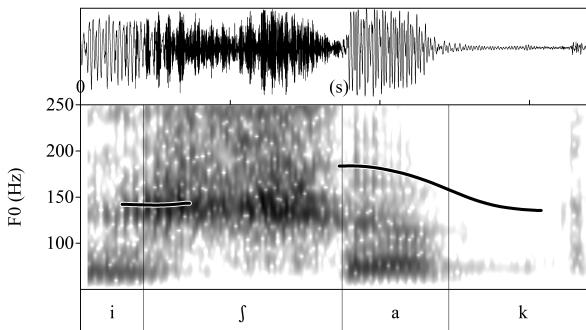


Figure 3.20: *ishák* 3.PRO

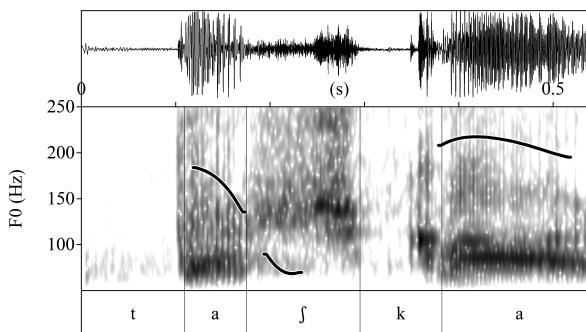


Figure 3.21: *tashká* 'how'

A similar behavior for F0 can be seen on the pitch contour for the \acute{H} iambs with *áakitaa* 'above' in Figure 3.22 and *ní'ni* 'he climbed and...' in Figure 3.23. The pitch quickly reaches its peak within the first half of the vowel window for *áakitaa*. Following this prominence peak, the pitch levels off for the rest of the word. For *ní'ni*, F0 peaks within the window for [í] before the transition to the

3.6 Word boundary-dependent morpho-phonology

[?], after which the pitch falls and then levels off for the rest of the word in a manner similar to what we see in *áakitaa*.

We likewise see a noticeable drop in F0 after the primary stress in these words, a pattern likewise observed in LH iambs, as seen in Figure 3.24 with *patáqta* ‘push!’ and in Figure 3.25 with *numá’k* ‘person.’ In *patáqta*, we once again see a sharp rise in pitch in the first syllable, and then F0 peaks within the first half of the window for [á:]. After the peak, the pitch for the following syllable drops significantly. We see a slightly different behavior for the pitch in *numá’k*. With the pitch curve in *numá’k*, we do not notice as drastic a rise and fall in pitch. This behavior will be discussed further in §3.6.4.4.

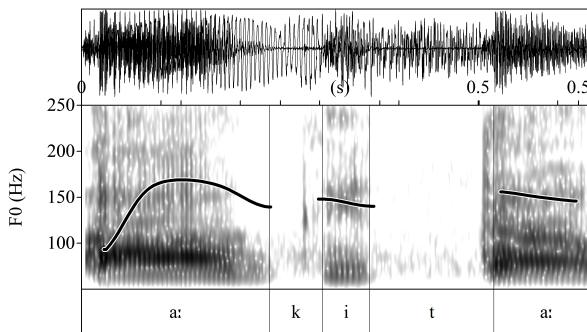


Figure 3.22: *áakitaa* ‘above’

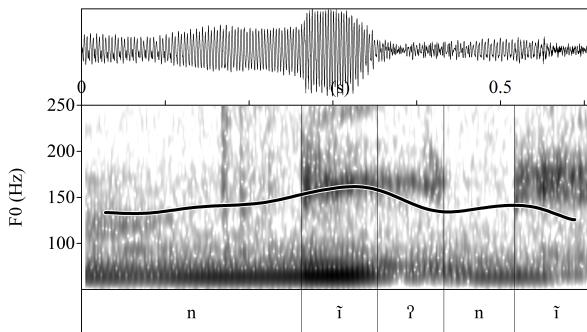


Figure 3.23: *ní'ni* ‘he climbed and...’

3 Phonetics and phonology

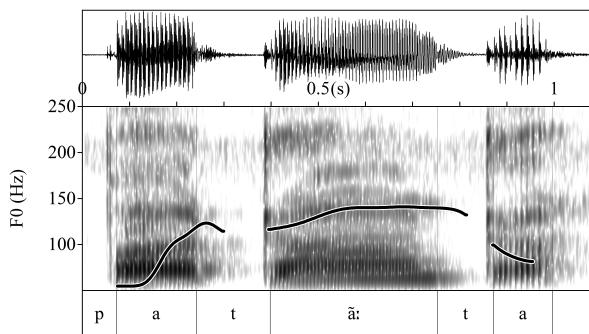


Figure 3.24: *patq̃qta* ‘push!’

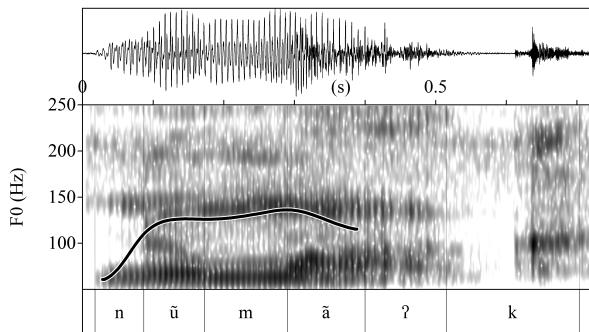


Figure 3.25: *numá'k* ‘man, person’

With this stress assignment behavior in mind, we can pose the following phonological rule:

(86) Primary Stress Assignment Rule

$$\sigma \rightarrow \begin{bmatrix} +\text{main} \\ +\text{stress} \end{bmatrix} / \#(\sigma_\mu)_-$$

Assign primary stress to the second syllable in a word, unless the first syllable is heavy.

The rule above in (86) accounts for the pattern seen thus far by ruling out stress that is not part of an iambic foot aligned to the left edge of a word. This rule accounts for the distribution of primary stress we saw previously in (84) and (85), where first-syllable stress is associated with heavy syllables, versus second syllable stress, where the first syllable is light. Furthermore, while Mandan primary stress assignment is weight sensitive, a heavy syllable will not drag stress rightward if preceded by two light syllables.

3.6 Word boundary-dependent morpho-phonology

While Mandan primary stress assignment is weight sensitive, a heavy syllable will not drag stress rightward if preceded by two light syllables. We can see this in the data below.

(87) Primary stress in LLH words

/wa-ki-xe:=kt=o?ʃ/	[(wa.'ki).xe:.kt̪o?ʃ]	wakíxeekto'sh	'I'll give up'
/ra-ru-xã:h=o?ʃ/	[("da.'ru).xã:.ho?ʃ]	rariúxqaho'sh	'you reach for it'
/ko-ta-wi:h=E/	[(ko.'ta).mĩ:.he]	kotámihe	'his sister'
/wa-ka-tã?x=o?ʃ/	[(wa.'ka).tã?xo?ʃ]	wakátq'xo'sh	'I hammer at it'
/rũ-pa-sũ?=o?ʃ/	[(nũ.'pa).sũ?ro?ʃ]	nupásu'ro'sh	'we swim'
/ki-ruwã?k#fi=s/	[(ki.'nũ).mã?k.fi:s]	Kinúma'kshis	'Royal Chief, First Creator' ³⁷

In each of the examples above in (87), the presence of a heavy third syllable does not affect the placement of stress. Prince's (1990) Weight-to-Stress Principle (WSP) holds that if a syllable is heavy, it tends to be stressed. In the data above, the generalization of the WSP does not hold. Therefore, we can maintain our established formulation of the rule for primary stress assignment from (86).

3.6.4.3 Secondary stress assignment

In addition to primary stress, the constraints discussed above also play into the assignment of secondary stress. The directionality of all stress in Mandan is left-aligned, so a foot bearing secondary stress will align its left edge to the right edge of a foot bearing primary stress. We can see this pattern below.³⁸

(88) Examples of secondary stress assignment

³⁷Several different translations appear throughout this work for Kinúma'kshi, a cultural hero that plays a major role in traditional Mandan narratives. Mrs. Mattie Grinnell typically translates his name as meaning 'Royal Chief,' while Mrs. Annie Eagle often translates his name as 'First Creator.' In Hollow's (1973a) transcribed narratives, he always translates this name as 'Old Man Coyote.' Many other Plains groups have a cultural figure, Coyote, that either plays a role in the creation of the world or acts as a trickster who goes on adventures that serve as a fable to bestow some lesson upon the listener. In the Mandan narratives collected by Kennard (1934) and Hollow (1973a,b), Kinúma'kshi plays both roles. See Erdoes & Ortiz (1998) for more information on Coyote figures in the cultures of different Plains groups.

³⁸Secondary stress is historically not marked in Mandan orthography, with the only researcher who attempts to do this being Kennard (1936). However, Kennard often conflates stress and vowel length, so his secondary stress marking is not reliable. In the orthography used by Mandan language learners on the Fort Berthold Indian Reservation, secondary stress is not recorded, and primary stress marking is often omitted as well.

3 Phonetics and phonology

/wã:reksuk/	[(mã:).(re,ksuk)]	máareksuk	'bird'
/xo:xixã:=ka/	[(xo:).(xi,xã:).ka]	xóoxixqqka	'crow'
/ru:xa:=E/	[(ⁿ du:).(ha:).re]	rúuhaare	'buzzard'
/wã:ʃka~ʃkap=ka/	[(mã:ʃka).(ʃka,pka)]	mashkáshkapka	'rosehips, tomatoes'

In each of the examples above, we see instances of varying combinations of syllables with differing weights. Regardless of whether a word consists of only light syllables (e.g., *mashkáshkapka*) or mostly heavy syllables (e.g., *rúuhaare*), the iambic foot with secondary stress is always adjacent to the iambic foot bearing primary stress, even if this juxtaposition creates instances where a stressed syllable abuts another stressed syllable.

The fact that heavy syllables can occur adjacent to one another means that stressed syllables can also be adjacent, as we see in the word *rúuhaare* 'buzzard', which has primary stress on the first syllable, but secondary stress on the second syllable. For these syllables to follow one after the other, Mandan must allow for stress clash, where two successive syllables can bear stress.

These observations lead us to the formulation of the following rule for secondary stress:

(89) Secondary Stress Assignment Rule

$$\sigma \rightarrow [+\text{stress}] / \left[\begin{array}{c} \sigma \\ +\text{main} \\ +\text{stress} \end{array} \right] (\sigma_{\mu})_-$$

Assign secondary stress to the second syllable after the syllable bearing primary stress, unless the syllable following the primary stress is heavy.

It is not obvious that Mandan has iterative secondary stress or any kind of tertiary stress, as there is a strong tendency for the overall intensity of a word to drop after three syllables (Kasak 2022). Secondary stress does appear to be optional, however. Secondary stress also is associated with an increase in F0, but not to the same degree as primary stress. As we saw in *áakitaa* in Figure 3.22, we would expect secondary stress on the final syllable. This word has an overall HLH structure, which should result in a (H)(LH) parsing. However, there is no statistically significant difference in the mean F0 for the second syllable [ki] and the third syllable [ta:], which is where we expect secondary stress to manifest.

3.6.4.4 Unexpected stress assignment

Hollow (1970: 35) notes that there are several phonological issues that remain to be dealt with in Mandan. Among those problems, understanding the motivation

3.6 Word boundary-dependent morpho-phonology

behind unexpected stress assignments is one of the most daunting. The material below tackles this issue of “unexpected” stress assignment, and explains the factors that yield the surface stress assignments that we see in Mandan and why the stress we see there is not unmotivated.

3.6.4.4.1 Stress assignment and Dorsey’s Law vowels As I have argued above, there is small set of rules that capture the pattern of stress assignment in Mandan. There are many words in the corpus that seem to flout this pattern in Hollow’s (1970) transcriptions, however, that seemingly call this argument into question. The data below appear the same as Hollow transcribes them.³⁹

(90) Exceptional first-syllable stress in Hollow (1970)

/wr̩/	⟨m̩ni⟩	‘water’
/wro:k/	⟨ẃ̩rok⟩	‘buffalo bull’
/wrap/	⟨ẃ̩rap⟩	‘beaver’
/pre=o?ʃ/	⟨ṕ̩re?ʃ⟩	‘he licks it’
/hr̩á?E/	⟨h̩ána?re⟩	‘to sleep’
/kra:sek=o?ʃ/	⟨k̩árašeko?ʃ⟩	‘it clears up [after a storm]’
/xw̩ah/	⟨x̩ámah⟩	‘small’

These CVRV sequences in Hollow’s (1970) transcriptions raise cause for concern over whether there is a single phonological process for stress assignment in Mandan. Further complicating matters is how common such sequences are, with RVRV making up an enormous portion of the corpus due to most of the prefix field consisting of prefixes with a basic /RV-/ shape. RVRV words often manifest in Hollow’s transcriptions as having stress on either syllable in different places in his narratives: e.g., both ⟨m̩ni⟩ and ⟨m̩ní⟩ for /wr̩/ ‘water’ appear, indicating he perceived stress after the first and second consonant in different instances. Furthermore, he often writes this word without any accentuation at all, suggesting that he either could not determine where the primary stress should fall or might have considered the word to have no underlying stress whatsoever. Kennard (1936: 5) likewise remarks that some words in Mandan seem to have an accent that is “evenly distributed.” These words are given below.

(91) Accentless words in Kennard (1936)

³⁹Hollow (1970) does not transcribe vowel length, instead postulating that certain syllables in Mandan bear underlying stress. This postulation is not borne out by the phonetic data; Mandan definitely has phonemic long and short vowels, and stress is predictable if one is familiar with the underlying morphology, as described in §3.6.4.2 and §3.6.4.3 above.

3 Phonetics and phonology

⟨manace⟩	/wraʃ=E/	[('mã:nã).ʃe]	<i>manáshe</i>	‘tobacco’
⟨natore⟩	/rato:=E/	[("da.'to:).re]	<i>ratóore</i>	‘male’s father’s older brother (voc.), elder (voc.)’

There may have been more words [Kennard \(1936\)](#) considered to be accentless, but he only provides two in his grammar. With respect to ‘tobacco,’ it is a citation form where boundary tones and a Dorsey’s Law vowel are interfering with the perception of stress. For *ratóore*, it is a vocative form, so the intonational contour of the word will involve high tone at the right edge of the word, which is confounding the perception of the primary stress on the second syllable, which likewise will have a higher F0 than the first syllable.

Taking the first example of an accentless word from [Kennard \(1936\)](#) and combining it with the data in (90) in [Hollow \(1970\)](#), these exceptions all share one thing in common: they have word-initial CR clusters in their underlying representations. Furthermore, the stress is being marked on a vowel that [Hollow \(1970\)](#) describes as epenthetic: i.e., the Dorsey’s Law vowel. As previously discussed in §3.2.3, my interpretation is that these sounds are not epenthetic at all. Rather, Dorsey’s Law vowels in Mandan are intrusive sounds that are extraphonological in nature following the analysis of intrusive vowel by [Hall \(2006\)](#). That is to say, phonological processes like stress assignment do not take these sounds into account when evaluating syllables and morae for stress assignment because these excrecent vowels are a phonetic, post-phonological phenomenon.

Dorsey’s Law vowels are not treated phonologically as syllables in their own right, but acoustically they are vowel sounds that spill over between an articulatory gap between a consonant cluster involving a sonorant. As such, the intrusive vowel sound is really just an extension of the vowel that follows. Any intrusive vowel is tautosyllabic with the vowel whose features it shares. This tautosyllabicity is the reason for the varying perception of where stress falls in words beginning with underlying /CRV/ sequences. Primary stress places an articulatory target on a particular syllable in regards to pitch. Voiced consonants are articulatorily more conducive to the production of pitch, and the only voiced sounds in Mandan are sonorants.

This conduciveness of pitch production allows for speakers to more easily undershoot the F0 target. This process is observed in Figure 3.25. Peak F0 is reached within the [m], right as the vocal cavity opens to produce the [ã] in *numá'k*, which is the true target of this high pitch by virtue of it being the head of the iambic foot in [(nū.'mā?k)].

In all the figures discussed so far, we see a clear pattern: peak F0 is highest on syllable bearing primary stress, along with a higher average F0 over the duration

3.6 Word boundary-dependent morpho-phonology

of the stressed vowel. The evidence presented herein points to F0 being a key component of primary stress marking in Mandan. With this pattern in mind, let us now compare these words with predictable stress manifesting on the expected syllable to those where stress seemingly appears sooner.

In the figures below, we can see a relatively small rise and fall in F0 from the start of the word that reaches its peak before the target vowel, such as in Figure 3.26, or a flat F0 that prematurely reaches its peak and maintains it until it reaches the target vowel, like in Figure 3.27.

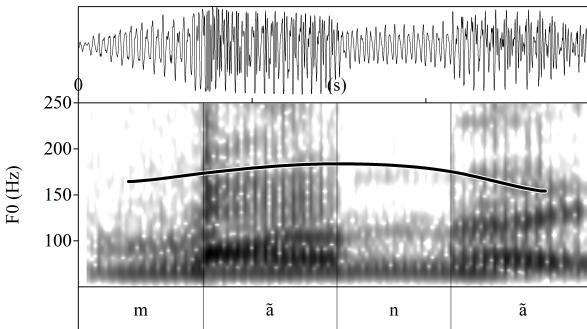


Figure 3.26: *maná* ‘wood, tree’

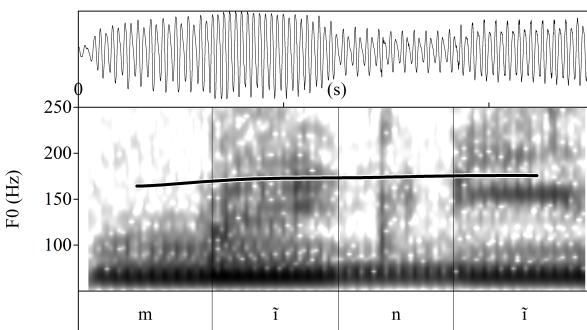


Figure 3.27: *miní* ‘water, liquid’

The data in the figures above represent typical behavior for F0 in words beginning with consonant clusters consisting of two sonorants. F0 behaves in a similar manner in words that begin with clusters that produce Dorsey’s Law vowels where the first element of the cluster is not a sonorant. In Figure 3.28, we see the word [('t^ere).k^erek] /t^ere=k^erek/ ‘them being big around’ with F0 starting high through the first vocal element until it peaks at the target vowel. The word

3 Phonetics and phonology

[(x̄mā).he] /xwāh=E/ ‘small’ likewise begins with an early F0 peak that plateaus until the target vowel, then drops sharply.

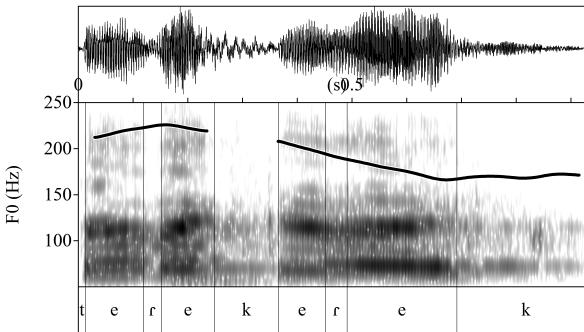


Figure 3.28: *terékerek* ‘them being big around’

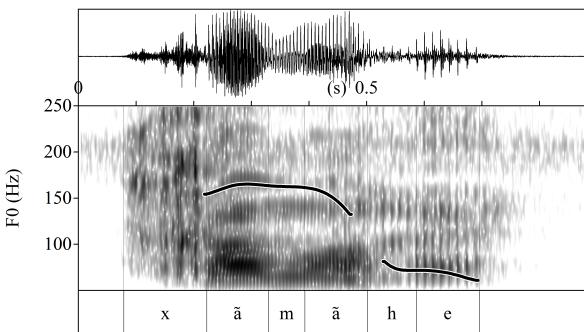


Figure 3.29: *xamáhe* ‘small’

Regardless of whether a word begins with a stop-sonorant, fricative-sonorant, or a sonorant-sonorant cluster, the behavior of F0 is identical: F0 approaches or achieves peak F0 during the first vocalic window and then begins to fall somewhere between the transition between the sonorant and the second vocalic window. Since Dorsey’s Law vowels are phonologically part of the same syllable as the following vowel, the phonetic correlates of stress apply to these excrescent vowels as well. As such, the heightened F0 associated with primary stress likewise affects Dorsey’s Law vowels. Past interpretations of first syllable stress come from this process; previous scholars write stress in words like *miní* ‘water’ and *maná* ‘tree, wood’ as having first syllable stress because they do have first syllable stress due to the fact that the excrescent vowels are not assigned syllables of their own.

3.6 Word boundary-dependent morpho-phonology

We can likewise tell that these intrusive vowels are not treated like syllables phonologically because there are instances of third- or even fourth-syllable stress in Hollow (1970).

(92) Third- and fourth-syllable stress in Hollow (1970)

$\langle \text{pax}^i\text{rúke} \rangle$	$/\text{paxru:k=E/}$	$[(\text{pa}.^i\text{ru:}).\text{ke}]$	<i>paxirúuke</i> 'corn silk'
$\langle \text{m}^i\text{n̥j̥kúktɔ?š} \rangle$	$/\text{w-ri-ku?=kt=o?ʃ/}$	$[(\text{m}^i\text{n̥i}.^i\text{ku?}).\text{kto?ʃ}]$	<i>minikú'kto'sh</i> 'I will give it to you'
$\langle \text{k}^i\text{n̥j̥k}^i\text{n̥ík} \rangle$	$/\text{kříkrík/}$	$[(\text{k}^i\text{n̥i}.^i\text{k}^i\text{n̥ík})]$	<i>kinikiník</i> 'kinnikinnick' (<i>< PAlg *kerek-en-</i> 'mix by hand')

All of these words that deviate from the expected first- or second-syllable stress in (92) above are actually typical iambs that happen to have one or more clusters that trigger a Dorsey's Law vowel. These excrecent vowels are tauto-syllabic with the underlying vowel, and as such are not treated as belonging to different syllables for the purposes of footing. These words alternatively appear with stress on the Dorsey's Law vowel in Hollow's (1970) transcriptions. The spectrogram in Figure 3.30 below illustrates why previous attempts to pin down Mandan stress placement have yielding varying results. The underlying cluster /xɾ/ in *paxirúuke* 'cornsilk' features a high F0 that peaks and levels out for the duration of both vocalic windows in the second syllable of $[(\text{pa}.^i\text{ru:}).\text{ke}]$ before falling steeply in the third syllable.

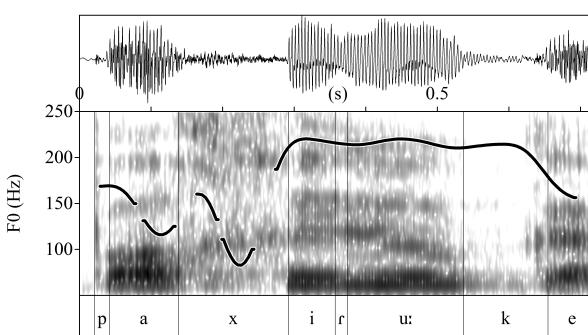


Figure 3.30: *paxirúuke* 'cornsilk'

3 Phonetics and phonology

This misperceived stress is caused by the same factors that result in stress being perceived on Dorsey's Law vowels as discussed above. There is a premature peak in F0 on the excrescent vowel, and this high pitch typically plateaus onto the target vowel. Since there is such a stark contrast between the high pitch on the excrescent vowel and the preceding vowel, listeners may interpret this change as the cue for primary stress and transcribe stress too early in the word (e.g., Kennard 1936 and Hollow 1970). Alternatively, this pitch plateau can be taken as a sign that there is some kind of pitch spreading along voiced segments for those scholars who have described Mandan as a language with a Tokyo Japanese-style pitch accent (e.g., Park p.c.).

As the data presented here demonstrate, stress in Mandan is predictable once one analyzes certain sequences as being underlying clusters that trigger excrescent vowel insertion due to Dorsey's Law. This same pattern holds for other Siouan languages that feature Dorsey's Law vowels such as Hoocák and Dakota.⁴⁰

(93) Iambic stress and Dorsey's Law vowels in other Siouan languages

- a. Hoocák (Hale & White Eagle 1980: 128)
(hikorohó) /hi-kro-ho/ [<hi>.(k^oro.ho)] 'he gets dressed'
- a. Dakota (Boas & Deloria 1941: 9)
(wab.lúga) /wa-w-yuya/ [(wa.'b^ulu).ya] 'I separate it from its outer covering'

In each of the examples in (93) above, we see left-aligned iambic footing for primary stress. Hoocák leaves the first mora of a word unparsed, but otherwise we see that the Dorsey's Law vowel in /kro/ is not taken into account for counting morae for footing purposes. The Dakota example demonstrates that typical primary stress assignment in Dakota functions in the same way as in Mandan, where excrescent vowels are not treated as syllables when stress is assigned.

The overall takeaway from the data presented herein is that the wide variety of transcriptions for words in Mandan can be accounted for once the underlying structure of a word is considered. Namely, when an underlying consonant cluster ends with a sonorant, an excrescent vowel that copies features of the syllable nucleus will be inserted between the sonorant and the other consonant. This vocalic intrusion is not phonological in nature, as we can tell from the fact that

⁴⁰The depiction of stress in Hoocák takes into account that the first mora in a word is typically unfooted, and that primary stress falls on the third mora of a word. Stress skips over Dorsey's Law vowels in this language. See Miner (1979, 1981) and Hale & White Eagle (1980) for further detail on iambic stress in Hoocák.

3.6 Word boundary-dependent morpho-phonology

the phonology of the language is blind to it. This excrescent Dorsey's Law vowel exhibits many of the same phonetic correlates of stress as the original syllable nucleus because for all intents and purposes it is actually the same vowel. Stress cannot be assigned to these vowels alone due to the fact that excrescent vowels are tautosyllabic with the vowels whose features they are copying.

3.6.4.4.2 Stress assignment and pre- and post-verbal elements While many of the inconsistent instances of stress marking in [Kennard \(1936\)](#) and [Hollow \(1970\)](#) are due to their perception of the interaction between F0 and Dorsey's Law vowels, there is one other source of unexpected stress assignment to be found in Mandan. These instances of unexpected stress stem from how stress interacts with preverbs and postverbal clitics. The observed pattern is twofold: firstly, that preverbs will always draw primary stress, even if they are short vowels, and secondly, that primary stress will never be placed onto an enclitic.

(94) Preverbs and primary stress

- a. /i-wa-tee=o'sh/ → *íwateero'sh* 'I like her'
- b. /o-wa-shraa=o'sh/ → *ómasharaaro'sh* 'I slid'
- c. /e-wa-he=o'sh/ → *épe'sh* 'I said it'
- d. /aa-wa-rEEh=o'sh/ → *áawareeho'sh* 'I brought it'

(95) Enclitics and primary stress

- a. /tu=ootE/ → *túroote* 'there must be some'
- b. /hE=oowąk=o'sh/ → *héroomako'sh* 'he saw it'
- c. /hi=rjítE=o'sh/ → *híniiteroomako'sh* 'he got there fast'
- d. /pxik=o'sh/ → *pxíko'sh* 'it worked loose and fell'
- e. /wrjís=E/ → *miníse* 'horse'

The preverbs in (94) all draw stress, even though most of them do not satisfy the requirement to form iambic feet: i.e., most preverbs are short vowels and should therefore be passed over for primary stress. The transitivizer preverb *aa-* in (94d) follows typical stress assignment, since it is a heavy syllable, but the other preverbs do not. This raises the question of whether [Hollow's \(1970\)](#) analysis that certain morphological items carry underlying stress is correct. Furthermore, these data raise the question of whether footing is always iambic.

An additional complication is the fact that the data in (95) show that primary stress cannot fall on an enclitic. In (95a) through (95d), the second syllable in each word is heavy and should attract stress to become a LÍH iamb. Similarly, the

3 Phonetics and phonology

data in (95e) are such that stress should fall on the second syllable to form a LÍ iamb. In none of the data in (95), however, do we see expected iambic footing.

Combining what we see in (94) and (95), we must account for how such stress assignment is possible. One explanation for the data in (95) is that stress does not fall on enclitics due to the fact they are prosodically deficient by virtue of the fact enclitics in Mandan are phonological clitics: i.e., they rely on prosodically adjoining to a prosodic word to be phonologically realized. As such, we may motivate the stress pattern with respect to (95). This same explanation does not hold for data involving preverbs in (94), as preverbs are not proclitics, and can be surrounded by other prefixes. We can see that preverbs can both follow and precede inflectional prefixes in the examples below.

(96) Preverbs in Mandan plus other prefixes

- a. *wáa'orakaraahinixiniite'sh*
waa-o-ra-ki-rEEh=r̥ix=r̥iitE=o'sh
NEG-PV.IRR-2A-VERT-go.back.there=NEG=CEL=IND.M
'you're not going to go just yet' (Hollow 1973b: 216)
- b. *karóoruxihka*
ka-ro-o-ru-xik=ka
AGT-1S-PV.IRR-INS.HAND-be.bad=HAB
'the ones bad to us' (Hollow 1973b: 45)
- c. *wáa'iwahekinixo'sh*
waa-i-wa-hek=r̥ix=o'sh
NEG-PV.INS-1A-know=NEG=IND.M
'I don't know' (Hollow 1973a: 47)

All of the data above features expected iambic footing, either by having H feet like in (96a) and (96c) or LH feet like in (96b). Each example above has an inflectional prefix flanking a preverb and, except for (96b), the preverb is not drawing primary stress. In (96b), we may say that stress is technically on the preverb, but that same syllable also contains the first person plural stative pronominal prefix *ro-*, which blends with the irrealis preverb *o-* to form a single syllable. Adding additional prefixes to the left of a preverb draws primary stress away from it if a heavy syllable occurs at the left edge of the word. Otherwise, in the case of a light syllable preceding the preverb, iambic footing takes place normally.

These data show us that preverbs by themselves are not underlyingly stressed. The data do point to the fact that there is something about preverbs that prevent

3.6 Word boundary-dependent morpho-phonology

normal iambic footing unless additional morphological material precedes a preverb. Once additional elements are prefixed onto a stem bearing a preverb, the expected iambic stress pattern resumes. It is not the case that preverbs suddenly cause footing to go from iambic to trochaic, but the question remains as to what preventing the expected footing to occur past a preverb and into the rest of the stem.

As noted in §3.6.3, preverbs also act as a barrier to nasal harmony spreading. This same barrier appears to block the left-to-right directionality of footing for primary stress, as well as right-to-left nasal harmony. I argue in Chapter 5 that this barrier is really a word boundary within the greater morphological word. Preverbs are not words themselves, but are morphologically part of a composite word. Footing and nasal harmony are unable to cross a word boundary, even an internal word boundary, and this internal word boundary in turn helps explain why Hollow (1970) may have posited that preverbs are underlyingly stressed. There really is only a single process for stress assignment in Mandan, but this internal word boundary obfuscates this regular stress pattern.

3.6.4.4.3 Stress assignment in fossilized compounds There are a few words in Mandan that do not involve preverbs or enclitics that still display unexpected stress. These irregularities can be explained if we analyze them as adhering the same rules as compounds in contemporary Mandan. In a compound word, primary stress is footed from the left edge of the word. Mandan does not allow footing across a word boundary, so if the first word contains a single light syllable, that syllable is marked with primary stress.

(97) Stress assignment in compounds

- a. /suk#ruwā?k/ → *súknuma'k* ‘young man’ (lit. ‘child + man’)
- b. /pax#fowok/ → *páxshowok* ‘bowl’ (lit. ‘pot + shallow’)
- c. /wrāʃ#o:t/ → *manáshoot* ‘red willow’ (lit. ‘tobacco + mix’)

Modern speakers recognize the words above as being composed of two other words. However, the words below are seen as being simplex words (Benson p.c.).

(98) Words with unexpected stress

- | | | |
|-------------|------------------|---------------------------------|
| /hūprīh=E/ | <i>húpinihe</i> | ‘soup’ |
| /krāhrī/ | <i>kanáhini</i> | ‘grain, seed’ |
| /hāxura:=E/ | <i>háxuraare</i> | ‘bat’ |
| /xopřī/ | <i>xópini</i> | ‘be holy, sacred’ |
| /wírā?k/ | <i>mína'k</i> | ‘sun, moon, orb, boat, vehicle’ |

3 Phonetics and phonology

The list above is not exhaustive, but does serve as a jumping point to show why these words have unexpected first syllable stress. Diachronically, each of these words is a compound. The word *xópini* ‘be holy, sacred’ is comprised of reflexes of PSi *xopE ‘holy’ and *r̥i ‘be, exist.’ Similarly, *kanáhini* ‘grain, seed’ has PSi *r̥i compounded at the end, with what appears to be a reflect of *kr̥a ‘put’ and the stem augment *-hE. The word for ‘soup’ likewise is a compound of PSi *hupV ‘juice, liquid’ plus the PSi verb *r̥i ‘be, exist.’ The root-final /h/ is likely another instance of the stem augment *-hE.

The word *háxuraare* ‘bat’ is an old compound that consists of PSi *há ‘night, darkness’ and *xuraa ‘eagle.’ Neither of these words exist separately in modern Mandan, and as [Rankin et al. \(2015\)](#) note, reflexes of these two Proto-Siouan roots only occur in compounds. In a similar manner, *mína’ki* ‘sun, moon, orb’ consists of PSi *wí ‘sun, moon, orb’ plus the ‘sitting’ positional *Raa-ke. The final vowel may be a fossilized remnant of the Proto-Siouan determiner *ki~*kj, though Mandan both *mína’k* an *mína’ki* appear in the corpus.

What these words with exceptional stress show is that they still maintain the expected pattern of stress assignment for compounds, even though the individual elements of those compounds are no longer analyzed as words. One can argue that stress in these words is now lexical, but we can also posit that these are still compounds, even if one or more elements are no longer available in the lexicon. Either way, the motivation for stress placement in words like those in (98) is not purely arbitrary. After all, even the few borrowings into Mandan ignore the stress of the original words and Mandanize them.

(99) Stress in borrowings

- a. Arikara to Mandan ([Parks & Demallie 2002](#))
 $\acute{a}rikaraaru'$ [('ə.ri).kə.(,ra:.rə?)] ‘stag’ →
Arikara [(a.'ri).k^ara] ‘Arikara’⁴¹
- b. Lakota to Mandan ([Ullrich 2011: 208](#))
 $Iháŋkthuŋwaŋ$ [(i.'há).(kt^xū.,wā)] ‘Yankton’ (lit. those who dwell on the edge’) →

⁴¹A traditional etymology behind this exonym for the Arikara is that a Mandan man first encountered an Arikara hunter who had shot and killed a stag near a Mandan village. When asked who he was and where he was from, the hunter just pointed to his kill and said the Arikara word *árikaraaru'* ‘stag,’ not knowing exactly what the Mandan were asking him. This word is also noteworthy in that it follows the tendency to borrow no more than three syllables of a loanword, even though all the sounds of the original Arikara word *árikaraaru'* are possible for Mandan speakers.

3.6 Word boundary-dependent morpho-phonology

- Ihátu* [(i.'hã).tu] 'Yankton'⁴²
- c. Omaha to Mandan (Larson 2005)
Umó'ho [(u.'mã).hã] 'upstream, Omaha' →
Ómahq [(o).(mã.,hã)] 'Omaha'⁴³
 - d. French to Mandan (Little Owl & Rhod 1992: 4)
espagnol [es.(pa.'nɔl)] 'Spanish' →
íspari'oori [(i).(spa.,ri).(,?o:).ri] 'Mexican'⁴⁴
 - e. Hidatsa to Mandan (Matthews 1877: 193)
miridáari [(mí.,ri).('ta:).ri] 'cross over water' →
Minítaari [(míñi).('ta:).ri] 'Hidatsa'⁴⁵

All of the words in (99) are consistent with Mandan primary stress assignment. In most of these words, we see primary stress on a different syllable than the

⁴²Like the Arikara borrowing, this word is shortened to three syllables. With the exception of the [wã] syllable, which would be realized as [mã], this word is largely pronounceable for Mandan speakers, so this simplification is unnecessary. The Mandanized version of this loanword also conforms to the pattern that Mandan only allows one underlying nasal per root, as the last syllable is an oral vowel, unlike the source word.

⁴³The *u*- in Omaha is a locative preverb that is a cognate with the locative preverb *o*- in Mandan. In Omaha, this preverb does not block iambic footing, which is why we see second syllable stress in Omaha. However, Mandan speakers analyzed it as a locative preverb, which caused the word to have first-syllable stress like other Mandan stems with preverbs. A reflex of the PSi word *wahq 'upstream, upwind' is not present in Mandan otherwise.

⁴⁴The initial /i/ in this word is taken to be the instrumental preverb *i*-, since the vast majority of Mandan words with word-initial /i/ involve that preverb. Analyzing the initial /i/ as a preverb causes first syllable stress instead of the expected second syllable iamb due to the internal word boundary found after preverbs in Mandan. There are at least three versions of this word in use. This version comes from Little Owl & Rhod (1992: 4), but Hollow (1970: 95) gives [ʃ] for the fricative: i.e., [(i).(ʃpa.,ri).(,?o:).ri]. Given the fact that French /s/ becomes Mandan /ʃ/ in this word, it is possible that this loan entered Mandan from French via Hidatsa, where there is no /s/, only /ʃ/. The word for 'Mexican' in contemporary Hidatsa is [(i.'ʃpa).(ri.,?o:).ri], which is often shortened to just [(i.'ʃpa).ri]. The truncated Hidatsa version is also found in Mandan. The version of this word in Mandan with the [ʃ] is likely contamination from Hidatsa, since virtually all L1 speakers of Mandan over the past century have also been speakers of Hidatsa, which has been used more widely than Mandan throughout the Fort Berthold Reservation since the construction of the Garrison Dam.

⁴⁵The original Hidatsa word is a compound of *mirí* 'water' and *daari* 'cross a river,' and has anapestic stress due to syllable weight outranking a left-aligned iamb in Hidatsa stress assignment (Boyle et al. 2016). The majority of Mandan speakers over the past century have also been Hidatsa speakers and have therefore recognized this word as a compound. This word is treated as a compound in Mandan, which prevents normal iambic footing because of a word boundary after *miní* 'water.' If this word were not analyzed as a compound, we would otherwise expect stress on the second syllable [ta:].

3 Phonetics and phonology

original word, so we can assume that stress is not lexical. Furthermore, several of these words are reanalyzed as having complex internal morphology, which causes a shift in primary stress. We see this behavior in ‘Omaha’ and ‘Mexican,’ where the initial vowel is treated like a preverb. Similarly, the compound in ‘Hidatsa’ is borrowed as a compound rather than a simplex word.

3.6.4.5 Summary of stress assignment

The overall pattern we see as we go through the corpus is that primary stress is predictable if the underlying morphology is known. Mandan utilizes a very regular stress accent as a system of word-level prominence rather than a pitch accent system.⁴⁶ Stress in Mandan involves left-aligned, weight-sensitive iambs. Primary stress falls on the leftmost iamb, and secondary accent falls on each subsequent iamb.

Heavy syllables attract stress, with all syllables containing a long vowel or a coda /?/ being treated as heavy. All other syllable types are light. A word that begins with two light syllables will have the primary stress fall on the second syllable in keeping with the iambic stress pattern of Mandan. Initial heavy syllables attract primary stress due to the fact that they are bimoraic and therefore satisfy the requirement for an iambic foot for primary stress. Dorsey’s Law vowels are excrecent and do not factor into syllabification due to the fact that they are not visible to the phonology. This extraphonological status is why such vowels are represented as superscript vowels throughout this book.

Exceptions to this pattern are found in words with complex internal structures: i.e., compounds and composites. Footing does not cross word boundaries. A compound like *súknuma’k* ‘young man’ has primary stress on the first syllable instead of the expected second syllable because there is a word boundary after *súk* ‘child, young.’ Iambic footing cannot cross a word boundary, so it is preferable to have a deficient iamb than to cross a boundary, resulting in primary stress on the first syllable.

A composite word with a light first syllable (e.g., one with a preverb like *i-* or *o-*) likewise can have that first syllable bear primary stress in spite of the presence of a second syllable that would otherwise attract primary stress. A word like

⁴⁶The only Siouan language that demonstrably has a pitch accent system is Crow, where there is a single mora per root that bears an underlying high tone that spreads leftward to create a high pitch plateau (Graczyk 2007, Wallace 1993). Boyle (2007) and Park (2012) argue that Hidatsa also has a pitch accent system similar to that in Crow, but Boyle et al. (2016) finds that Hidatsa has a very predictable stress system using phonetic instrumentation that is not dissimilar from the one in Mandan.

3.7 Sound symbolism

íseko'sh 'he did it' contains the instrumental preverb *i*- and the root *sek* 'do, make,' plus the male-addressee indicative enclitic *=o'sh*. Preverbs act as internal word boundaries for the purpose of stress assignment, so we again must have first-syllable stress despite the fact that there are two light syllables at the left edge of the word. See [Kasak \(2019\)](#) for further argumentation about the theoretical underpinnings of this analysis.

3.7 Sound symbolism

Mandan is like most other Siouan languages in that it features sound symbolism ([Parks & Rankin 2001: 107](#)). Sound symbolism involves changing the supralaryngeal fricatives in a word to express less or greater intensity of an action or of the quality of some state. This iconicity is lexically determined and is not a productive part of synchronic Mandan. Sound symbolism was a feature of Proto-Siouan, where many lexical and morphological items can be reconstructed with doublets or triplets, differing in which of the three Proto-Siouan supralaryngeal fricatives **s* **š* **x*.

These same three fricatives in Mandan can be found with the *s*-grade being associated with small objects or limited, precise actions, bright or intense colors, and quiet or high-pitched noises. On the opposite end of the spectrum is the *x*-grade, which is typically associated with large objects or extreme, imprecise actions, dark or dull colors, and loud noises. The *sh*-grade is considered to be a middle quality in cases where forms for all three fricative exist. However, most cases of sound symbolism involve doublets rather than full triplets. We can see some examples of sound symbolism below in Table 3.15.

Sound symbolism is typically seen on verbs. In particular, these verbs tend to be stative, since they are used to describe something that has a gradable quality. There are active verbs that display sound symbolism, but they are a minority of cases. The examples below are not all-inclusive of all instances of sound symbolism in Mandan, as there are numerous doublets and triplets in the language. Where a gap in the paradigm exists, one cannot simply offer a hypothetical form, as speakers consider those to be ill-formed. This consistent judgment against proposing a missing form in the case of a doublet reinforces the fact that sound symbolism is not an active feature of Mandan.

3 Phonetics and phonology

Table 3.15: Examples of sound symbolism in Mandan

<i>s</i>	<i>sh</i>	<i>x</i>
<i>pú̑s</i> 'striped'	<i>pú̑sh</i> 'spotted'	<i>pú̑x</i> 'dapled'
<i>síi</i> 'yellow'	<i>shíi</i> 'tawny'	<i>xíi</i> 'brown'
<i>ské</i> 'tie, twist, braid'	<i>shké</i> 'weave, twine'	<i>xké</i> 'pluck'
<i>ksíp</i> 'go under water'	<i>kshíp</i> 'drown, go under water'	—
<i>sé</i> 'red'	<i>shé</i> 'pink'	—
<i>síh</i> 'keen'	<i>shíh</i> 'sharp'	—
—	<i>ná'resh</i> 'hot'	<i>ná'rex</i> 'lukewarm'
—	<i>púushak</i> 'coarse sand'	<i>púuxak</i> 'fine sand'
—	<i>shóot</i> 'white'	<i>xóot</i> 'gray'
<i>hqs</i> 'bullberry'	<i>hqsh</i> 'grape'	
<i>rusáp</i> 'pull, tug on'	—	<i>ruxáp</i> 'tear off'
<i>sé'h</i> 'leak, drip'	—	<i>xé'h</i> 'be raining'
<i>seróo</i> 'jingle'	—	<i>xeróo</i> 'rattle'

Most Mandan roots are monosyllabic, and there are numerous homophones. This homophony may be obscuring more cases of sound symbolism. Another factor in preventing more cases of sound symbolism from being identified is the fact that there may be semantic change involved where there is some metaphorical connection between one form and a possible doublet or triplet: e.g., the root *siip* or *rusíip* 'blink' and *xíip* 'wrinkled.'

Almost all instances of sound symbolism in Mandan involve a single fricative changing to reflect some iconic relationship between the size, intensity, or degree of a quality or action. A small number of words in Mandan that feature disyllabic

3.7 Sound symbolism

roots with the same fricative display sound symbolism. *Sáqsi* ‘smooth [like ice]’ and *sháqshi* ‘smooth [like skin]’ both involve the same fricative, where a change in its quality indicates a change in the degree of smoothness. The antonyms *sasáp* ‘rough [like a file]’ and *xaxáp* ‘rough [like sandpaper]’ likewise involve a complete change of all fricatives to indicate a change the degree of roughness. It is not clear if these instances of double sound symbolism arose through some diachronic process of compounding or accretion of other morphology or if these etyma are inherited from Proto-Siouan.

4 Verbal morphology

This chapter addresses the issue of Mandan verbal morphology. Specifically, this chapter delves into the distribution of inflectional affixes and other agreement morphology, as well as the preponderance of postverbal enclitics possible in Mandan. Derivational affixes are also discussed here, as is cursory overview of the syntax of Mandan and the structure of the Mandan clause.

Much of the extant literature on Mandan deals with topics presented herein, as most previous scholars have been primarily concerned with glossing narratives (Kennard 1936, Hollow 1970, Coberly 1979, Mixco 1997a). Very little has been done to investigate issues in the behavior of verbs intra- and inter-clausally, though Mixco (1997b) argues that many of the participial markers described by Kennard (1936) and Hollow (1970) are really switch-reference markers. Previous explanations of Mandan have also described varying amounts of tense morphology, which herein is interpreted as being evidentials. I argue that Mandan, like most Siouan languages, lacks dedicated tense morphology, and that such formatives are truly aspectuals or evidentials.

This chapter attempts to document all morphology present in the corpus, explain its usage, and provide examples that might be used in the future study of Mandan or in certain phenomena present in Mandan. This chapter breaks down the distribution and behavior of the affixes observed in Mandan into three divisions: the prefix field in §4.1, the suffix field in §4.2, and phrasal morphology (i.e., enclitics) in §4.3. I argue that much of the post-verbal morphology in Mandan is actually implemented by enclitics and not true suffixes. I conclude this chapter by noting that the ordering of enclitics can be changed in certain contexts that reflect the scopal relationships intended by the speaker. This limited degree of flexibility in morphological order is restricted to enclitics and is not reflected in the ordering of the prefix field.

4.1 Prefix field

Mandan has a rigid ordering for its prefixes. This kind of morphology is often referred to as templatic morphology, since morphological items appear in specific

4 Verbal morphology

ordering with respect to one another. The table below represents the order in which we see prefixes ordered in Mandan (Kasak 2019: 8).

Table 4.1: Prefix field in Mandan

11	10	9	8	7	6	5	4	3	2	1	0
REL	NEG	UNSP	1PL	PV.IRR	PV.LOC	1SG	2SG	SUUS	ITER	INS	STEM
					PV.INS		2PL	MID	INCP		
					PV.TR			RECP			

The prefix field in Mandan alternates between inflectional and derivational morphology: i.e., we see affix orderings like DERIVATION-INFLECTION-STEM. Slots 1 (see §4.1.1.1), 2 (see §4.1.1.2), and 3 (see §4.1.1.3) are all voice or aspectual markers, with slots 6 (see §4.1.1.4.1) and 7 (see §4.1.1.4.2) being mood or applicative preverbs. Person marking takes place in slots 4 (see §4.1.2.1), 5 (see §4.1.2.2), and 8 (see §4.1.2.3), while an unspecified argument marker appears in slot 9 (see §4.1.2.4). Negation is marked in slot 10 (see §4.1.2.5), and relativization appears in slot 11 (see §4.1.2.6).

In this section, I outline the prefix inventory of Mandan, starting with those prefixes that appear closest to the verbal stem, addressing each prefix by which templatic slot it is associated.

4.1.1 Derivational prefixes

The bulk of prefixal slots is occupied by derivational material.¹ The majority of these derivational affixes affect the valency of the verb: e.g., the prefix *ru*-INS.HAND indicates that an action is being done using the agent's hand, where the instrument is only covertly present in the sentence, not overtly.

4.1.1.1 Instrumental prefixes (Slot 1)

Mandan, like every other Siouan language, has a number of instrumental prefixes. These prefixes indicate the manner by which an action occurs when added to a transitive verb. When an instrumental occurs with an intransitive verb, that verb becomes transitive. The tendency to transitivize intransitive verbs, however, is not universal. There are numerous instances of an intransitive verb bearing instrumental morphology and still preserving their status as intransitive verbs.

¹My assumptions regarding why these prefixes are derivational have been elaborated upon more fully in Kasak (2019: 5ff).

4.1 Prefix field

Instrumental prefixes are lexically determined, and are not productive in modern Mandan.

(1) Mandan instrumental prefixes

<i>ka-</i>	'by force'
<i>pa-</i>	'by pushing'
<i>ra₁</i>	'by foot'
<i>ra₂</i>	'by mouth'
<i>ra'</i>	'by heat'
<i>ru-</i>	'by hand'
<i>wa'</i>	'by piercing'

All seven of these instrumentals are inherited from Proto-Siouan, as cognates of these instrumentals can also be found in most other Siouan languages. Examples and semantic peculiarities of each instrumental follow below.

4.1.1.1.1 'By force' instrumental: *ka-*

This instrumental prefix often accompanies verbs that deal with cutting or striking actions. Actions bearing *ka-* often involve some kind of sudden movement. This prefix is a reflex of Proto-Siouan *raka- INS.FRCE, and typically manifests as *ka-*. However, when combined with a reflexive marker, the reflexive or *suus* marker *ki-* plus *ka-* become *kara-* /k-ra/, where *ka-* has an allomorph *ra-*. This relic trace of the fuller *raka- formative is likewise found in Dakotan and Dhegihan languages, and these languages likewise form a portmanteau of the reflexive plus force instrumental like Mandan (Rankin et al. 2015).

(2) Examples of *ka-*

- a. *kaháaro'sh*
ka-haa=o'sh
INS.FRCE-be.separated=IND.M
 'he cuts meat from the bone' (Hollow 1970: 68)
- b. *íkahító'sh*
i-ka-hít=o'sh
PV.INS-INS.FRCE-soften.hide=IND.M
 'she softens a hide by beating it' (Hollow 1970: 77)
- c. *kahóora* *ráahini*
ka-hoo=E *rEEh=rí*
INS.FRCE-fall.over go.there=ss
 'it was falling down and...' (Hollow 1973a: 1)

4 Verbal morphology

- d. *karókahashka*
ka-ro-ka-hash=ka
AGT-1S.PL-INS.FRCE-be.distintegrated=HAB
'the one who slaughters us' (Hollow 1973a: 146)
- e. *rakáshihe*
ra-ka-shih=E
2A-INS.FRCE-be.sharp=sv
'you sharpen it' (Hollow 1973a: 189)
- f. *ówakaptihki*
o-wa-ka-ptik=ki
PV.IRR-1A-INS.FRCE-fall.down=COND
'if I knock it down' (Hollow 1973a: 65)
- g. *karáxkqho'sh*
k-ra-xkqh=o'sh
SUUS-INS.FRCE-move=IND.M
'he shook something of his own' (Hollow 1970: 448)

4.1.1.1.2 'By pushing' instrumental: *pa-*

This instrumental typically implies a pushing-type action, frequently involving the movement of a cutting instrument. The use of *pa-* versus *ka-* when used for cutting motions indicates the difference in intensity of the cutting motion: i.e., butchering a carcass versus mincing food. Hollow (1970: 461) notes that this instrumental is often associated with motions away from the body. It is a reflex of Proto-Siouan **pa-* INS.PUSH.

(3) Examples of *pa-*

- a. *ówapaweshto'sh*
o-wa-pa-wesh=kt=o'sh
PV.IRR-1A-INS.PUSH-cut=POT=IND.M
'I might be going to cut it' (Hollow 1970: 454)
- b. *nupáminishinito'sh*
ru-pa-wr̥ish=rjt=o'sh
1A.PL-INS.PUSH-be.folded=2PL=IND.M
'we (pl.) rolled it up' (Hollow 1970: 462)

4.1 Prefix field

- c. *ópaxiruukini*
o-pa-xruuk=r̥
PV.LOC-INS.PUSH-take.off=ss
'she took it off [the wall]' (Hollow 1973a: 91)
- d. *ópaptiktiki*
o-pa-ptik=kti=ki
PV.LOC-INS.PUSH-have.fallen.down=POT=COND
'whenever he pushes them' (Hollow 1973a: 105)
- e. *miní wapáshu'ro'sh*
wr̥í wa-pa-shu'=o'sh
water 1A-INS.PUSH-thresh=IND.M
'I swim' (Hollow 1970: 241)
- f. *Máatah* *Ópatarak*
w̥aqtah o-pa-trak
Missouri.River PV.LOC-INS.PUSH-block
'Garrison Dam' (Hollow 1970: 256)
- g. *pasáqsi'sh*
pa-saqsi=o'sh
INS.PUSH-be.smooth=IND.M
'he polishes it' (Hollow 1970: 461)

4.1.1.1.3 'By foot' instrumental: *ra*-₁

The instrumental *ra*- is homophonous with the 'by mouth' instrumental. The 'by foot' instrumental is a reflex of the Proto-Siouan instrumental *r̥aq INS.FOOT. The *ra*- almost always indicates that an action is done using one or both feet, though there are some verbs where the understanding is that the action happened using the legs instead. The semantics of whether the feet are involved or the legs must be learned for each word, but the default reading is that of an action done by the use of one's foot or feet.

This instrumental is nasalized in Core Siouan (i.e., Mississippi Valley and Ohio Valley Siouan), but not nasalized in Peripheral Siouan (i.e., Missouri Valley, Mandan, and Catawban). Catawba uses a prosodically reduced form of the verb *daa* 'go by foot' (Rankin et al. 2015). The length of the vowel and its orality could be influence from the Hidatsa and Crow analogs, *ara*- and *ala*-, respectively. There could also have been some contamination with the oral vowel in 'go' *réeh-/ráah-*

4 Verbal morphology

that caused the vowel in the instrumental to oralize. Nonetheless, this instrumental is distinct from its homophonous counterpart *ra-* INS.MTH, as it is lexically selected for by certain verbs.

(4) Examples of *ra-* 'by foot'

- a. *rakéxo'sh*
 ra-kEx=o'sh
 INS.FOOT-scrape=IND.M
 'he scrapes it [with his feet]' (Hollow 1970: 107)
- b. *óraraxih* *írakuy'kto'sh*
 o-ra-ra-xih i-ra-kuy'kt=o'sh
 PV.IRR-2A-INS.FOOT-kick PV.INS-2A-give=POT=IND.M
 'you'll pretend to kick' (Hollow 1973b: 62)
- c. *rapí'xo'sh*
 ra-pí'x=o'sh
 INS.FOOT-be.scattered=IND.M
 'he scatters it [with his foot]' (Hollow 1970: 146)
- d. *rashú'ro'sh*
 ra-pa-shú'=o'sh
 INS.FOOT-thresh=IND.M
 'he threshes corn with his feet' (Hollow 1970: 221)
- e. *warápijto'sh*
 wa-ra-píjt=o'sh
 1A-INS.FOOT-scatter=IND.M
 'I scatter it with my foot' (Hollow 1970: 464)
- f. *kirásiruutoomako'sh*
 ki-ra-sruut=oowąk=o'sh
 ITR-INS.FOOT-be.slippery=NARR=IND.M
 'he slipped again' (Kennard 1936: 11)
- g. *rashóho'sh*
 ra-shoh=o'sh
 INS.FOOT-be.pointed=IND.M
 'he stretches his legs' (Hollow 1970: 232)

4.1.1.4 'By mouth' instrumental: *ra-*₂

The 'by mouth' instrumental *ra-* is a reflex of Proto-Siouan *ra- INS.MTH. Actions involving an agent's lips, mouth, teeth, or tongue will often display this instru-

4.1 Prefix field

mental. Certain stems may involve either *ra- INS.FOOT* or *ra- INS.MTH*, making these verbs homophonous: e.g., the verb *rashkápo'sh* can mean either 'he pinches it between his toes' or 'he nibbles on it.' Context is clearly the tiebreaker in such instances, and in isolation, it is impossible to conclusively tell which *ra-* the speaker intends. The only possible clue might be frequency, as the *ra-* 'by foot' instrumental appears more often in the corpus than the *ra-* 'by mouth.' Examples of *ra- INS.MTH* appear below.

- (5) Examples of *ra-* 'by mouth'

4 Verbal morphology

4.1.1.1.5 ‘By heat’ instrumental: *ra’*

This instrumental has at times been confused for one of the *ra-* instrumentals due to the fact that many scholars did not hear the coda glottal stop, as well as the fact that many speakers tend not to realize the glottal stop with a full glottal occlusion. The use of creaky voice is often the only clue that this is the ‘by heat’ instrumental in many tokens in the corpus. This instrumental is a reflex of Proto-Siouan *aRaa INS.TEMP, which denotes an action taken using either extreme heat and extreme cold. In some Siouan languages, this instrumental is still used with extreme cold, but this is not the case in Mandan. The *ra’*- prefix can only be used with actions or states involving heat.

(6) Examples of *ra’*-

- a. *kará’ptewaherekto’sh*
ka-*ra’*-ptE#wa-hrE=kt=o’sh
INCP-INS.HEAT-be.burning#1A-CAUS=POT=IND.M
'I will cause it to start to burn' (Hollow 1973b: 47)
- b. *rá’sako’sh*
ra'-sak=o’sh
INS.HEAT-be.dry=IND.M
'it dried up in the fire' (Hollow 1970: 198)
- c. *mará’resho’sh*
wq-*ra’*-resh=o’sh
1s-INS.HEAT-be.hot=IND.M
'I am hot' (Hollow 1970: 463)
- d. *rá’xuunuhere’sh*
ra'-xuu#r̥-hrE=o’sh
INS.HEAT-be.charred#1A.PL-CAUS=IND.M
'we charred it and made it brittle' (Hollow 1970: 330)
- e. *rá’xerephere*
ra'-xrep#hrE
INS.HEAT-scab#CAUS
'boil off the bone' (Kennard 1936: 12)
- f. *mi’s* *rá’seso’nik*
w̥i’=s ra'-sE=so’r̥ik
stone=DEF INS.HEAT-be.red=COMP.CAUS
'since the rock was red hot' (Hollow 1973a: 97)

4.1 Prefix field

- g. *rúut rá'sitwahara* *minikú'nito'sh*
 ruut ra'-sit#wa-hrE w-ri-ku'=ri=t=o'sh
 rib INS.HEAT-roast#1A-CAUS 1A-2s-give=2PL=IND.M
 'I roasted the ribs for you (pl.)' (Hollow 1973a: 177)

4.1.1.1.6 'By hand' instrumental: *ru-*

One of the most commonly encountered instrumentals is *ru-*, indicating that an action is taking place using the agent's hands. It is a reflex of Proto-Siouan *ru-INS.HAND, which has cognates in every Siouan language.

(7) Examples of *ru-*

- a. *íruxqko'sh*
i-ru-xaqk=o'sh
 PV.INS-INS.HAND-be.torn=IND.M
 'he tears it open [with his hands]' (Hollow 1970: 309)
- b. *nurúsiko'sh*
ru-ru-sjlk=o'sh
 1A.PL-INS.HAND-be.squeezed=IND.M
 'we squeezed/choked something' (Hollow 1970: 206)
- c. *ruhijito'sh*
ru-hijt=o'sh
 INS.HAND-tan.hide=IND.M
 'she tans a hide' (Hollow 1970: 75)
- d. *wáa'owarushaaxi're*
waa-o-wa-ru-shE=xi=o're
 NEG-PV.IRR-1A-INS.HAND-take=NEG=IND.F
 'I won't take it' (Hollow 1973a: 131)
- e. *rusé'rak*
ru-se'=ak
 INS.HAND-open=DS
 'having opened it' (Hollow 1973a: 137)
- f. *waa'iruptini*
waa-i-ru-pti=ri
 NOM-PV.INS-INS.HAND-carry=ss
 'a pot holder and...' (Hollow 1973a: 149)

4 Verbal morphology

- g. *qqwe óshiriihaa*
 qawé o-shriih=haa
 all PV.LOC-be.scattered=SIM
íkiruxkekerekaroomako'sh
 i-ki-ru-xke=krE=ka=oowák=o'sh
 PV.INS-VERT-INS.HAND-pluck=3PL=HAB=NARR=IND.M
 'they would all pull [their heads] back while scattering' (Hollow 1973a: 45)

In the overwhelming majority of cases, words bearing *ru-* transparently involve the semantics of an action that takes place by way of an agent's hand. However, there are numerous cases where there is no obvious connection to an action or state taking place by way of an agent's hand, sometimes not even having any kind of an agent. Some instrumentals have similar opaque connections between the meaning of the resulting lexical item and the manner of action they denote, but *ru-* has a much higher number of these semantically non-transparent roots than any other instrumental.

(8) Non-transparent semantics for *ru-*

- a. *rusiríxo'sh*
ru-srix=o'sh
 INS.HAND-splash=IND.M
 'it splashes' (Hollow 1970: 218)
- b. *rukóho'sh*
ru-koh=o'sh
 INS.HAND-be.vacant=IND.M
 'he moves sideways, makes a space' (Hollow 1970: 114)
- c. *hásh írumini*
hásh i-ru-wrì
 grape PV.INS-INS.HAND-be.twisted
 'grape vine' (Trechter 2012b: 196)
- d. *ruminísho'sh*
ru-wrìsh=o'sh
 INS.HAND-be.rolled.up=IND.M
 'he goes around in circles' (Hollow 1970: 305)

4.1 Prefix field

- e. *ómaruxke'sh*
o-wä-**ru**-xke=o'sh
PV.LOC-1s-**INS.HAND**-sink=IND.M
'I am sinking' (Hollow 1970: 317)
- f. *ruxóko'sh*
ru-xok=o'sh
INS.HAND-be.idle=IND.M
'he forbids someone from working' (Hollow 1970: 319)
- g. *kiruxq'ro'sh*
k-ru-xq'=o'sh
MID-INS.HAND-plow=IND.M
'he frowns' (Hollow 1970: 331)

It is possible that several of these items originate from some metaphorical usage (e.g., *ruxók* involving someone holding up their hand to prohibit someone else from doing something), whereas for others it is less clear (e.g., *rusiríx* describes something that a liquid does, not what someone is doing to the liquid, so there should be no agent involved).

4.1.1.7 'By piercing' instrumental: *wa'*-

This instrumental is the least common of all seven instrumentals in Mandan. It is a reflex of Proto-Siouan *Wa- INS.CUT, which is not restricted to just cutting actions in Mandan. Actions involving *wa'*- all make use of some sharp and pointed object.

(9) Examples of *wa'*-

- a. *wá'hopo'sh*
wa'-hop=o'sh
INS.PRCE-be.hollow=IND.M
'he makes a hole with an awl' (Hollow 1970: 490)
- b. *wá'skjh*
wa'-skjh
INS.PRCE-cut.open
'cut open' (Kennard 1936: 12)
- c. *wá'tke'sh*
wa'-tkE=o'sh
INS.PRCE-poke=IND.M
'he scrapes hair from hide with pointed object' (Hollow 1970: 253)

4 Verbal morphology

- d. *wa'úux*
wa'-uux
INS.PRCE-be.broken
‘he breaks something with a pointed object’ (Hollow 1970: 263)
- e. *wá'pshako'sh*
wa'-pshak=o'sh
INS.PRCE-be.ripped=IND.M
‘he cut through it, opened it with a point’ (Hollow 1970: 153)
- f. *írawa'terekó'sh*
i-ra-wa'-trek=o'sh
PV.INS-2A-INS.PRCE-sew=IND.M
‘you sew it’ (Hollow 1970: 97)
- g. *wáa'iwa'shkap*
waa-i-wa'-shkap
NOM-PV.INS-INS.PRCE-pinch
‘a pin’ (Hollow 1970: 230)

4.1.1.2 Aspectual prefixes (Slot 2)

Aspect marking appears in the second prefocal slot in Mandan. Both iterativity and inceptivity can be expressed with the prefix *ki*-. Furthermore, the prefix *ki*- is homophonous with the middle voice marking prefix *ki*-, which is described in §4.1.1.3. The iterative interpretation of *ki*- is very productive in Mandan, and Kennard (1936: 11) notes that this formative is used in a way similar to the prefix ‘re-’ in English. The same cannot be definitively said about the inceptive interpretation, which does not appear to be productive, and is only sparsely attested in the corpus.

4.1.1.2.1 Iterative aspectual: *ki*-₁

The iterative prefix has an allophone of *k*- before stems beginning with oral sonorants as well as the instrumental *pa*-. The iterative can convey the meaning of ‘once more’ as well as ‘over and over again.’ The most common interpretation of the iterative observed in the corpus is ‘once more.’ Mixco (1997a: 29) notes that iterative marking can co-occur with the free adverb *inák* ‘again.’ Throughout the corpus, though, the most frequent manifestation of iterativity is expressed with the adverb *inák* instead of derivationally on the verb itself. We can see both allomorphs of iterative *ki*- in the examples in (10) below.

4.1 Prefix field

(10) Examples of iterative *ki*-

- a. óti *ikisehkereroomako'sh*
 o-ti i-ki-sEk=krE=oowąk=o'sh
 PV.LOC-reside PV.INS-ITR-make=3PL=NARR=IND.M
 'they fixed the house' [lit. 'they re-made the house'] (Hollow 1973a: 157)
- b. wáa'okinaataaxi
 waa-o-ki-rąqE=xi
 NEG-PV.IRR-ITR-stand.AUX=NEG
 'he won't be getting up again' (Hollow 1973a: 2)
- c. wakíkuuho'sh
 wa-ki-kuuh=o'sh
 1A-ITR-come.back.here=IND.M
 'I came back again' (Hollow 1970: 450)
- d. kerépo'sh
 k-rep=o'sh
 ITR-be.fat=IND.M
 'he is fat again' (Hollow 1970: 450)
- e. wakirú'uuxo'sh
 wa-k-ru-uux=o'sh
 1A-ITR-INS.HAND-be.broken=IND.M
 'I break it again' (Hollow 1970: 489)
- f. keróoro'sh
 k-roo=o'sh
 ITR-talk=IND.M
 'he is talking again' (Hollow 1970: 449)

Kennard (1936: 11) points out that there are certain verbs for which *ka-* is the iterative prefix, but only when prefixing onto a stem beginning with [n̩d]. After going over Hollow's recordings, the *ka-* in these instances turns out to not be [ka]. In reality, this is a situation where he is perceiving an intrusive vowel as [a~ə] due to the more centralized realization of Dorsey's Law vowels.² In the examples below, Kennard's transcription appears in angled brackets with the current Mandan orthography and morphological breakdown appearing beneath it.

²Refer back to §3.2.3 for further explanation of the tautosyllabic status of excrecent vowels in Mandan.

4 Verbal morphology

(11) Iterative *ka-* in Kennard (1936)

- a. ⟨*karo'pxani*⟩
keropxáani
 k-ropxE=r̥
 ITR-enter=ss
 'he went in again'
- b. ⟨*ta'menis karo'tkika'ehē*⟩
taminís keróotkika'ehe
 ta-wr̥is k-rootki=ka'ehe
 AL-horse ITR-strike=QUOT
 'he struck his horse again'
- c. ⟨*karo'ktike'reka'ehē*⟩
keróotkikereka'ehe
 k-rookti=krE=ka'ehe
 ITR-make.camp=3PL=QUOT
 'they camped again'
- d. ⟨*kara'cikoc*⟩
karashíko'sh
 k-ra-shik=o'sh
 ITR-INS.FOOT-knock.over=IND.M
 'he kicked it again'

Each of the examples in (11) is really an underlying /k-/ that triggers a Dorsey's Law vowel before the sonorant-initial root: e.g., *karashíko'sh* 'he kicked it again' is [k^ara.'ʃi.koʃ], not *[ka.ra.'ʃi.koʃ]. This allomorphy does not seem to be phonologically conditioned, given that it is triggered before stems beginning with /r w/ and the instrumental *pa-* but not other stems beginning with /p/: e.g., *kipáxo'sh* 'it is broken again' and not **kapáxo'sh*, but *wapká'uuxo'sh* 'I broke it again' and not **wakípa'uuxo'sh*.

4.1.1.2.2 Inceptive aspectual: *ka-* and *ki-2*

Inceptive aspect is marked very sparingly in the corpus. Virtually every instance of inceptivity involves a verb of motion, with most of the non-motion verbs being from Hollow's (1973b) re-elicitation of Kennard's (1934) narratives. It is possible that this prefix is less productive in the speech of Mandan speakers who were born around the turn of the twentieth century, but the lack of additional data relegates this explanation to the realm of conjecture. However, the fact remains

4.1 Prefix field

that inceptive marking is more widely attested in narratives from speakers born in the middle of the nineteenth century than it is for speakers born at the turn of the twentieth century and onward.

While Hollow (1973a) documents numerous examples of inceptive *ka-* in his transcribed narratives, it is not included in his list of morphology in the back of his dictionary (Hollow 1970). The inceptive aspect marker falls in the same slot as the iterative aspect marker, and as such, they cannot co-occur. It would be formally possible for multiple manifestations of iterativity to be present on a single verb (i.e., with the prefix *ki-* and the enclitic *=ske*), but no such redundant marking of inceptivity is documented in the corpus.

The narratives in Hollow (1973a) show that *ka-* is the most frequent shape for the inceptive marker, but a few verbs take *ki-* instead. This difference appears to be lexical, as there are no other transparent conditioning factors that might suggest a phonological motivation. We can see examples of both inceptive *ka-* and *ki-* below.

(12) Examples of inceptive *ka-*

- a. *kasúkini*
ka-suk=r̩
INCP-come.out=ss
'he appeared and...' (Hollow 1973a: 45)
- b. *kasíi* *ráahini*
ka-sii rEEh=r̩
INCP-travel go.there=ss
'he went traveling and...' (Hollow 1973a: 1)
- c. *karópxekereroomako'sh*
ka-ropxE=krE=oowąk=o'sh
INCP-go.in=3PL=NARR=IND.M
'they began to go in' (Hollow 1973b: 174)
- d. *q̩we karóokereroomako'sh*
q̩we ka-roo=krE=oowąk=o'sh
all INCP-talk=3PL=NARR=IND.M
'everyone started talking' (Hollow 1973b: 149)
- e. *kani'roomako'sh*
ka-r̩=oowąk=o'sh
INCP-climb=NARR=IND.M
'he started to climb ashore' (Hollow 1973b: 270)

4 Verbal morphology

- f. *karáhaa*
ka-rEEh=haa
INCP-go.there=SIM
'she started to go' (Hollow 1973b: 275)

g. *kará'ptewaherekto'sh*
ka-ra'-ptE#wa-hrE=kt=o'sh
INCP-INS.HEAT-burn#1A-CAUS=POT=IND.M
'I will cause it to start to burn' (Hollow 1973b: 47)

(13) Examples of inceptive *ki-*

- a. *rakarátaxa* *raháarootiki*
 ra-k-ra-tax=E ra-haa=ooti=ki
 2A-INCP-INS.MTH-make.loud.noise=sv 2s-start=EVID=COND
 'when you start crying' (Hollow 1973a: 185)

b. *kixkáharaani*
 ki-xkáh#hrE=rí
 INCP-move#CAUS=SS
 'she began chasing him and...' (Hollow 1973a: 222)

c. *kikanáani* *kikínapaa* *máakaahaa*
 ki-kraq=rí ki~ki-rap=E wáqkE=haa
 INCP-sing=ss AUG~INCP-dance=sv lying.AUX=SIM
 'they would start to sing and just start to dance' (Trechter 2012b: 165)

Very few examples of inceptive *ki-* appear in the corpus, so it is not evident how many other verbs fall into the class of *ki-* inceptives versus *ka-* inceptives. We can see above in (13a) that inceptive *ki-* behaves like iterative *ki-* with respect to allophonic realization as /k/ when before sonorant-initial stems. We can be certain that this example is truly *ki-* and not *ka-* by observing that stress appears on the third vocalic element, indicating that the ⟨ka⟩ in (13a) is a Dorsey's Law vowel and therefore extrametrical. It is possible that we may see additional variation in Bowers's (1971) recordings of Mrs. Annie Eagle and Mrs. Otter Sage, but the transcription and glossing of the 100-plus hours of recordings remains a task for the future.

The overall pattern we see with respect to aspectual prefixes is that *ki-* is the sole iterative prefix, while *ka-* is the primary inceptive prefix with certain tokens bearing *ki-* instead. The lack of L1 speakers means that we may not know if there is any difference in meaning between inceptive *ka-* and *ki-*, or if the distinction lies more in a difference in registers or varieties of Mandan: i.e., Núu'etaa versus

4.1 Prefix field

Rúptaa varieties. However, it is worth noting that there is no overlap in the words that bear *ka*- as the inceptive marker versus those that bear *ki*-, so this variation may ultimately be ascribed to the lexicon.

An additional unknown is whether stacking these aspectuals is permissible. English allows for constructions like ‘she began writing again’ or ‘we restarted an annual tradition.’ If these aspectuals are stackable, is there any asymmetry in how they can be concatenated? We do not know if Mandan permits constructions like *?*kikásii* ‘re-begin traveling’ or *?*kakísii* ‘start traveling again,’ though their absences from corpus suggest that these forms may be marked at the very best or illicit at the very worst.

4.1.1.3 Voice prefixes (Slot 3)

This group of derivational prefixes is especially prolific, being found frequently throughout the corpus. The prefix *ki*- has been described as reflexive, reciprocal, middle voice, vertative, and *suus* in Mandan by various authors (Kennard 1936, Hollow 1970, Coberly 1979, *inter alios*). One issue that we must deal with is how to properly describe what Mixco (1997a: 22) describes as “polysemous *ki*-.”

A portion of this polysemous *ki*- has been addressed in §4.1.1.2.2, where *ki*- can be an inceptive marker. Herein I present the different manifestations of *ki*- and its numerous uses.

4.1.1.3.1 Middle voice marker: *ki*-₁

This prefix is found whenever there is some dynamic change to a state or an action. It frequently carries an anticausative meaning: i.e., the subject of the verb undergoes some change in state without necessarily having an agent enacting that change: e.g., *kishí* ‘become good’ or ‘get better.’

(14) Examples of middle voice *ki*-

- a. *wakikiiraso'sh*
wa-ki-kiiras=o'sh
1A-MID-be.stingy.with=IND.M
'I love him, I am stingy with it' (Hollow 1970: 111)
- b. *pkakíisho'sh*
k-pa-kiish=o'sh
MID-INS.PUSH-wipe=IND.M
'he pays off a debt' (Hollow 1970: 111)

4 Verbal morphology

- c. *rakíkiishke'sh*
ra-ki-kiishkE=o'sh
1A-MID-consider=IND.M
'you think about it, taste it' (Hollow 1970: 112)
- d. *kirúxu'ro'sh*
ki-ru-xu'=o'sh
MID-INS.HAND-plow=IND.M
'he frowns' (Hollow 1970: 331)
- e. *kimíkhére*
ki-wík#hrE
MID-be.none#CAUS
'remove' (Hollow 1970: 113)
- f. *kixéero'sh*
ki-xee=o'sh
MID-be.quiet=IND.M
'he quits, surrenders' (Hollow 1970: 312)
- g. *kixíko'sh*
ki-xik=o'sh
MID-be.bad=IND.M
'it soured (of cream), spoiled' (Hollow 1970: 314)
- h. *kixté'sh*
ki-xtE=o'sh
MID-be.big=IND.M
'it gets bigger' (Hollow 1970: 326)

Some of the examples above are more idiomatic or metaphorical in nature: e.g., *kirúxu'* 'frown' literally means 'becomes plowed,' likely referring the motion of the mouth. The word *pkakiish* 'pay off a debt' literally means to 'have something get pushed clear,' likely referencing the clearing of a ledger. Most instances of middle voice throughout the corpus are transparent, however, and will carry these semantics.

A small number of instances of middle voice exist that suggest that the middle voice can also be used to express accidental actions, as seen below.

(15) Middle voice to denote accidental actions

4.1 Prefix field

- a. *pkashúho'sh*
k-pa-shuh=o'sh
MID-INS.PUSH-spill=IND.M
'he spills something accidentally' (Hollow 1970: 288)
- b. *pkaxkiho'sh*
k-pa-xkih=o'sh
MID-INS.PUSH-be.split=IND.M
'he split it accidentally' (Hollow 1970: 318)

This middle voice marking is more akin to an impersonal construction rather than truly being accident-denoting morphology. As such, a more literal interpretation of the sentences above would be 'something got spilled' and 'something got split, respectively. Rather than ascribing grammatical subjecthood to the actual agent who affected this change, these constructions shift the grammatical role of the agent from the person who did the action to the action happening on its own. It is thus possible for speakers of Mandan to downgrade their own agency for an action and simply make use of the middle voice to express that something has happened, but without morphologically attaching a cause to this event.

4.1.1.3.2 *Suus* marker: *ki*-₂

Like all other Siouan languages (Mixco 1997a: 22), Mandan is able to use the polysemous *ki*- to indicate that the direct object is possessed by the subject. Certain authors refer to this as a reflexive, of which is certainly is one species, but calling it a reflexive does not fully explain what it does. After all, this *suus* marker shows that the direct object of an action is not the agent, but something of the agent's very own.

(16) Examples of *suus*-marking *ki*-

- a. *wapáminishs* *kirúxotki*
wa-pa-wrjsh=s k-ru-xot=ki
UNSP-INS.PUSH-be.folded=DEF SUUS-INS.HANDuntie=COND
'when she untied her bundle' (Kennard 1936: 11)
- b. *tamáahj* *kirúsheka'ehe*
ta-waqhj k-ru-shE=ka'ehe
AL-knife SUUS-INS.HAND-grasp=QUOT
'he took his knife, it is said' (Kennard 1936: 11)

4 Verbal morphology

- c. *ówakipka'uxo'sh*
o-wa-ki-k-pa-ux=o'sh
PV.IRR-1A-SUUS-ITR-INS.PUSH-be.broken=IND.M
'I am going to break something of my own again' (Hollow 1970: 450)
- d. *istámis* *kirusá'roomako'sh*
istawí=s k-ru-sa'=oowłak=o'sh
eye=DEF SUUS-INS.HAND-Wash=NARR=IND.M
'he washed his eyes' (Hollow 1973a: 37)
- e. *kiká'ro'sh*
ki-ka'=o'sh
SUUS-have=IND.M
'he keeps it' (Hollow 1970: 102)

This *suus* marker often accompanies verbs where the subject affects some kind of change upon their own possession: e.g., picking it up or hitting it. It is not used in the corpus with verbs where the direct object is not physically affected by the action. This lack of *suus* with perception verbs does not indicate that such constructions are impossible, but the pattern of verbs that can take *suus* marking suggests that there is a restriction on the kinds of actions that can have a *suus* direct object.

4.1.1.3.3 Reflexive and reciprocal marker: *ki*-3

(17) Examples of reflexive *ki*-

- a. *mikíhe'sh*
wí-ki-hE=o'sh
1s-RFLX-see=IND.M
'I see myself' (Mixco 1997a: 23)
- b. *mí'shak ímikisehki*
w~-ishak i-wí-ki-sEk=ki
1s-PRO PV.INS-1s-RFLX-make=COND
'when I fix myself' (Hollow 1970: 127)
- c. *nikípaweshoote'sh*
rí-ki-pa-wesh-ootE=o'sh
2s-RFLX-INS.PUSH-cut=EVID=IND.M
'you must have cut yourself' (Kennard 1936: 11)

4.1 Prefix field

- d. *nukírushkápo'sh*
r̥-ki-ru-shkap=o'sh
1S.PL-**RFLX**-INS.HAND-pinch=IND.M
'we pinch ourselves (each other)' (Hollow 1970: 440)
- e. *íkihe'sh*
i-ki-hE=o'sh
PV.DIR-**RFLX**-see=IND.M
'he sees himself' (Hollow 1970: 440)
- f. *íkirookereroomako'sh*
i-ki-roo=krE=oowąk=o'sh
PV.INS-**RFLX**-talk=3PL=NARR=IND.M
'they argued about it' (Hollow 1973a: 24)

Kennard (1936: 31) lists *ki-* as the reflexive marker, while Hollow (1970: 440) argues that *íki-* is really the reflexive marker. It is unlikely that Hollow is correct, since the one verb form he uses to justify the base shape of the reflexive in Mandan actually has an instrumental preverb on it that is not attached to the reflexive. The word *íkihe'sh* does mean 'he sees himself,' but the addition of the instrumental preverb indicates the presence of a covert instrument, such as a mirror or a pool of water in which he sees his reflection. In the corpus, each instance of ⟨íki⟩ in Hollow's (1970) transcription actually contains an instrumental preverb.

The pronominals used in reflexive marking are all stative prefixes. The first person singular marker before a reflexive is *mi-*, which is not a typical first person singular stative prefix, and is explained further in §4.1.2.2.3). The second person *ni-* is likewise the second person stative. The first person plural active *nu-* is homophonous with the first person plural stative in reflexive constructions.

Kennard (1936: 11) gives *kiki-* as the form for the reciprocal. Hollow (1970: 440) notes that reciprocal and reflexive acts are ambiguous. The presence of *kiki-* is attested in Mixco (1997a: 23), though he suggests that it is merely *ki-* concatenated with itself. I likewise take this view, hypothesizing that this reciprocal meaning is accomplished through reduplication. Prefixal reduplication in Mandan add an augmentative meaning to the item being reduplicated. This process typically targets verbs and nouns, but other prefixes can be reduplicated as well for emphasis. This pattern of reduplicating prefixes is observed throughout the corpus, typically on pronominal morphology to emphasize who is doing an action.

There is no dedicated reciprocal marking in Mandan, though a reciprocal interpretation can be achieved by reduplicating the reflexive. We can see this behavior

4 Verbal morphology

below, where each of the utterances carries a reciprocal reading that has been confirmed by the consultant who provided the data from each of the respective narratives that have been cited, but most do not bear double *ki*- markers.

(18) Examples of reciprocal marking

- a. *numá'k kikihekere'sh*
ruwá'k ki~ki-hE=o'sh
 man RECP~RFLX-see=IND.M
 'the men see each other' (Mixco 1997a: 23)
- b. *kikíraksqakereroomako'sh*
ki-kiraksq=krE=oowák=o'sh
 RFLX-make.war=3PL=NARR=IND.M
 'they fought each other' (Hollow 1973b: 40)
- c. *kikíxkqharaani*
ki~ki-xkqh#hrE=rj
 RECP~RFLX-move#CAUS=SS
 'they were chasing each other and...' (Trechter 2012b: 107)
- d. *kikáani*
ki-kE=rj
 RFLX-pluck=ss
 'they shot [arrows] at each other and...' (Trechter 2012b: 116)

The reflexive can situationally carry reciprocal meaning, though it seems likely that reduplicating the reflexive to ensure a reciprocal reading is done for emphasis. In cases like (18d), the single use of the reflexive could yield two readings: 'they shot [arrows] at each other' or 'they shot themselves [with their own arrows]'. The more likely reading of this example is that the actors involved were firing arrows at others, rather than at their own persons. As such, the reduplicated reciprocal construction is unnecessary.

Another possible reason for why double *ki*- marking is observed so rarely is because of the augmentative reading that prefixal reduplication bestows upon an item. As such, in (18c), the use of *kiki*- could serve to indicate that the actors involved were not involved in a single chase action, but were chasing each other all over. Nevertheless, Hollow's (1970) observation holds that *kiki*- is quite rare, and Mixco's (1997a) position that a reciprocal reading can be conveyed through reduplicating the reflexive *ki*- appears to bear out in the data.

4.1 Prefix field

4.1.1.3.4 Vertitive marker: *ki*-₄

The use of the term vertitive is ascribed to Terrance Kaufman, who coined it for describing cislocative motion in Mayan languages, and this term was passed on to his student Hollow and onto Siouanists at large (Rankin p.c.). The Siouanist definition of this term deals with motion back to a source. Taylor (1976) reconstructs core motion verbs in Proto-Siouan as having vertitive and non-vertitive forms, though his interpretation of vertitivity is restricted to meaning ‘back’.

Quintero (2004: 238) defines the vertitive as a kind of *suus* marker, where an agent returns to their home. In practice, the vertitive is often used to indicate motion homeward in Mandan, but it is also found in narratives where an agent has no clear home, as in the case of the cultural figure *Kinúma’kshi* ‘Royal Chief, Old Man Coyote,’ who is constantly traveling the land. As such, this *suus* interpretation does not hold in Mandan.

Cumberland (2005) is really the first Siouanist to contextualize the complex use of the vertitive within a narrative structure. While driving around with a consultant, Cumberland (p.c.) noticed that her consultant had started using vertitive motion verbs as soon as they reached the mid-point of their journey around the reservation and began the process of returning to the place whence they had originally departed. This vertitive marking did not indicate that they were returning home, but rather returning to a particular origin point that has been established.

The vertitive does not mark a return home, but a return to some deictic center. The type of motion verb used depends on the relationship between a deictic center (DC) and a base. The DC is the geospatial point of perspective from where motion verbs are interpreted. Furthermore, the location designated as the deictic center can shift during discourse, causing a shift in the base to which the agent is returning. The base is the location associated with the traveler, and can be permanent or temporary: e.g., permanent like a home or temporary like a social gathering the traveler has just attended. All verbs of motion deal with movement towards or away from one or both of these two variables. This pattern in Assiniboine is summarized in Table 4.2 below.

Taylor (1976) argues this tripartite Departure-Progress-Arrival paradigm is an innovation of Dakotan languages, but I argue that this tripartite distinction is truly a Proto-Siouan feature in, as cognates of most the above forms exist in other Siouan languages and Catawban (Kasak 2013). Furthermore, Mandan has cognates of all the motion verbs found in Dakotan languages like Assiniboine, as can be seen in Table 4.3. Kennard (1936) and Hollow (1970) only list the Progress and Arrival series as motion verbs, but the corpus and judgments from speakers reveal that the Departure series exists in Mandan as well. The semantics

4 Verbal morphology

Table 4.2: Verbs of motion in Assiniboine (Cumberland 2005: 287)

		Departure	Progress	Arrival
←DC	←base	<i>iyáyA</i> ‘leave here go there’	<i>yÁ</i> ‘to go there’	<i>í</i> ‘arrive there’
	→base	<i>k^hiknÁ</i> ‘leave here to go back there’	<i>knÁ</i> ‘go back there’	<i>k^hi</i> ‘arrive back there’
	→DC	<i>hiyú</i> ‘leave there to go here’	<i>ú</i> ‘come here’	<i>hí</i> ‘arrive here’
	→base		<i>kú</i> ‘come back here’	<i>kní</i> ‘arrive back here’
		‘to go back here’		

of the Departure series convey motions that are underway, as we can see in the examples below.

(19) Departure-series verbs in Mandan

- a. *tíhuuro'sh*
ti#huu=o'sh
arrive.here#come.here=IND.M
‘he is arriving’ (Kennard 1936: 37)
- b. *hírehki* “mmmm” *éeheni*
hi#rEEh=ki ee-he=rí
arrive.there#go.there=COND PV-say=ss
‘When he was coming, he said “mmmm”’ (Hollow 1973b: 73)

Kasak’s (2012) summary of motion verbs in Mandan appears in Table 4.3 below, along with an adaption of Cumberland’s (2005:297) visual interpretation of vertitivity for Mandan in Figure 4.1. On this visual interpretation of vertitivity in Mandan, a solid line indicates motion away from a base; a dotted line indicates motion towards a base.

4.1 Prefix field

Table 4.3: Verbs of motion in Mandan

		Departure	Progress	Arrival
←DC	←base	<i>híreeh</i> 'leave here to go there'	<i>réeh</i> 'go there'	<i>hí</i> 'arrive there'
	→base	<i>kíkereeh</i> 'leave here to go back there'	<i>keréeh</i> 'go back there'	<i>kí</i> 'arrive back there'
→DC	←base	<i>tíhuu</i> 'leave there to go here'	<i>húu</i> 'come here'	<i>tí</i> 'arrive here'
	→base	<i>kiríkuh</i> 'leave there to go back here'	<i>kúh</i> 'come back here'	<i>kíri</i> 'arrive back here'

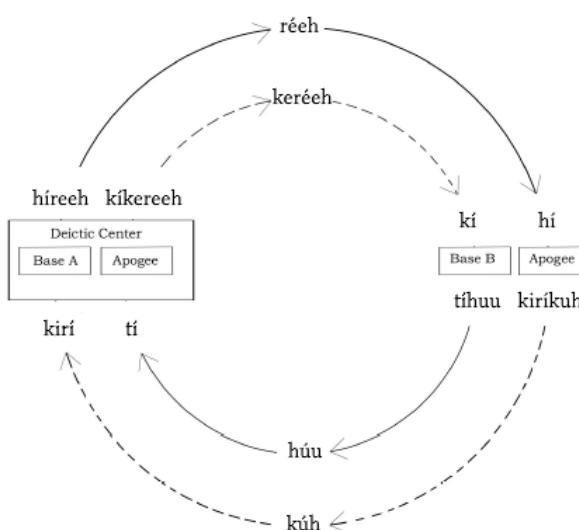


Figure 4.1: Visual representation of Mandan motion verbs

The vertitive *ki-* is more than just some kind of reflexive marker that marks going back to 'one's own' place. This prefix indicates motion towards some base that is contextualized within the narrative. The presence of *ki-* VERT often indicates that a speaker is indicating homeward motion, but this use is not exclusive,

4 Verbal morphology

and does not fully capture the range of possibilities for vertitive marking. Vertitive marking appears not only on the classic verbs of motion shown above, but can also appear on other motion verbs in Mandan.

- (20) Vertitive usage on non-tripartite motion verbs

Most of the examples above involve *ki-* prefixing onto a verb of motion, but we can see that the vertitive marker can also appear on verbs that indirectly deal with motion, like *kikú* ‘give back’ or *kirúshe* ‘take back.’ Because of the polysemy of *ki-*, the vertitive is often grouped with the other voice markers. It is not fully clear if this affix truly belongs in slot 2 or 3. While this prefix does deal with properties of the subject of the verb rather than the act itself (i.e., going back to a base associated with the subject), it also has an iterative association, given

4.1 Prefix field

that an agent is once again in motion towards a base. The fact that the iterative and vertitive *ki*- prefixes are homophonous means it is not obvious which one is which, creating situations where speakers disagree which *ki*- is vertitive and which is iterative. We can see both *ki*- prefixes co-occur in constructions like the one below:

(21) Multiple *ki*- marking

kikiku'ro'sh
 ki-ki-ku'=o'sh
 VERT-ITR-give=IND.M
 'he gave it back again'

When presented with examples like the one above, speakers recognize it and its intended meaning, but are unable to specify which *ki*- is indicating that the subject is giving the object back and which one indicates that this action is happening again. The vertitive in the tripartite motion verbs (e.g., *keréeh* 'go back there') seems to be a fossilized formative, as we can have constructions like those below, where the iterative seemingly precedes a vertitive form.

(22) Iterative marking with vertitive verbs

- a. *wakikuho'sh*
 wa-ki-kuh=o'sh
 1A-ITR-come.back.here=IND.M
 'I came back again' (Mixco 1997a: 12)
- b. *kikirikerek*
 ki-kri=krE=ak
 ITER-arrive.back.here=3PL=DS
 'when they got back' (Kennard 1936: 39)

In each of the examples in (22) above, iterative marking precedes a vertitive verb. In Hollow (1970) and Mixco (1997a), such cases are glossed as if the vertitive verbs are morphologically deconstructable, synchronically. There is no set of rules in contemporary Mandan that turns an input like /ki-huu/ 'VERT-come.here' into [kuh]. Historically, there was likely a process in Pre-Mandan where the vertitive *ki*- became /k-/ before an /h/, yielding *k-huu, which then triggered metathesis of the /h/ to avoid aspiration, yielding the modern *kúh* 'come back here.' This process, however, is not something modern speakers are able to access, so these verbs are treated as atomic lexical items herein.

4 Verbal morphology

There are no examples of clearly concatenated iterative and vertitive prefixes in the corpus, with iterativity being expressed on vertitive-marked actions with the adverb *inák* ‘again.’ Though there is no definitive evidence from speakers or from the corpus, the vertitive marker is considered here to be in slot 3 of the template due to its close semantic alignment with the agent argument, which the other voice markers here likewise share.

4.1.1.4 Preverbal prefixes (Slots 6 and 7)

Preverbs are frequent elements of words in Mandan. I refer to these prefixes as preverbs because they are elements that must appear before a verb and are not verbs themselves, yet they are integral parts of any verb that lexically selects for them. [Rankin et al. \(2003\)](#) and [Helmbrecht \(2008\)](#) agree that these elements likely originate from Proto-Siouan or Pre-Proto-Siouan postpostpositions. These postpositions became reanalyzed over time as integral elements of a verb instead of being associated with a noun. There are still traces of these preverbs as true postpositions in a few Siouan languages. Crow, for example, makes use of the the instrumental postposition *ii* productively.

- (23) Example of postpositional instrumental *ii*

<i>hinne shikákee-sh baap-tatchée</i>	[<i>iseé</i>	<i>ii</i>]	PP
this boy-DET	day-every	his.arrow	INS
<i>ihchilasshihk-a-lahkú-k</i>			
practice-CONT-continue-DECL			
‘every day this boy kept practicing with his arrows’ (Graczyk 2007 : 377)			

In Mandan, there are nine preverbs, shown below.

- (24) Preverbs in Mandan

<i>aa-</i>	transitivizer	<i>i-4</i>	possessive
<i>ee-</i>	generic preverb	<i>j'-</i>	reflexive
<i>i-1</i>	directional	<i>o-1</i>	irrealis
<i>i-2</i>	instrumental	<i>o-2</i>	locative
<i>i-3</i>	ordenalizer		

The instrumental postposition *ii* in Crow is cognate with the instrumental preverb *i-* in Mandan, though most preverbs in Mandan involve short vowels. Five of these preverbs have cognates across the Siouan language family, while three appear to be specific to Mandan. One phonological factor that all preverbs share is they have a tendency to draw stress, as described in §[3.6.4.4.2](#). Preverbs likewise

4.1 Prefix field

act as a boundary for the leftward spread of nasal harmony. This section gives examples involving preverbs and their interaction with inflectional morphology.

4.1.1.4.1 Applicative preverbs (Slot 6)

The majority of preverbs in Mandan can be considered applicatives. Siouanist literature typically calls all preverbs applicatives, due to the fact that these elements indicate that the number of arguments that the root verb takes is increased by one. These applicative preverbs are as follows:

4.1.1.4.1.1 Transitivizer preverb: *aa-*

The transitivizer *aa-* is used to turn a subset of intransitive verbs into transitive ones. It predominantly occurs with verbs of motion to give the verb a comitative (i.e., an action done while carrying something or bringing someone along) reading that can mean to travel with someone or to take or carry something. This preverb is ambiguous over whether the intended reading is that someone is doing something with another person or thing, or whether someone is doing an action while carrying or being in physical possession of the direct object.

(25) Examples of the transitivizer *aa-*

- a. *nihípe ráahuuro're*
rj-hüp(E) r-aa-huu=o're
2POS-shoe 1A.PL-PV.TR-come.here=IND.F
'we brought your shoes' (Hollow 1973a: 169)
- b. *tasúhkeres wa'áahuuroomako'sh*
ta-suk=krE=s wa-aa-huu=oowąk=o'sh
AL-child=3PL=DEF UNSP-PV.TR-come.here=NARR=IND.M
'he brought his children' (Hollow 1973a: 177)
- c. *húy áaki'hkaraani*
hüy aa-ki'h=krE=rj
be.many PV.TR-arrive.back.there=3PL=SS
'they brought a lot home and...' (Hollow 1973a: 184)
- d. *taté éeheni na'é'na*
tatE ee-he=rj ra'e=o'=ra
father.VOC PV-say=SS mother.VOC=be=TOP
áanihuukere'sh
aa-rj-huu=krE=o'sh
PV.TR-2s-come.here=3PL=IND.M

4 Verbal morphology

‘it was father and mother who brought you here’ (Hollow 1973a: 211)

- e. *íxe’hqkq’t*
 i-xe’h#hqk=q’t
 PV.INS-be.dripping#POS.STND=DEM.ANAP
áawakuho’re
 aa-wa-kuh=o’re
 PV.TR-1A-come.back.here=IND.F

‘I brought that basket back’ (Hollow 1973a: 92)

- f. *inák áasukini* *patihka’eheero’sh*
 irák aa-suk=rí pa-tik=ka’ehee=o’sh
 again PV.TR-come.out=SS INS.PUSH-throw=QUOT=IND.M
 ‘she took it out again and threw it away’ (Hollow 1973a: 122)
- g. *áamati’sh*
 aa-wá-ti=o’sh
 PV.TR-1s-arrive.here=IND.M
 ‘he brought me’ (Kennard 1936: 13)

There is only one exception to the generalization that *aa-* appears only with motion verbs, which appears below.

- (26) *áakxuho’sh*
 aa-kxuh=o’sh
 PV.TR-lie.down=IND.M
 ‘he lies with someone’ (Hollow 1970: 127)

Hollow (1970: 429) remarks that this term is a euphemism for sexual intercourse, and that it is a calque from English. There are no other instances of *aa-* with any other verb besides a motion verb, and this preverb is not generally productive in contemporary Mandan.

4.1.1.4.1.2 Generic preverb: *ee-*

The generic preverb *ee-* is referred to as ‘generic’ due to the fact that it does not convey any meaning of its own. It is semantically bleached in Mandan, and has a very limited distribution. Diachronically, this applicative can be reconstructed back to the preverb *e(e) in Proto-Siouan (Rankin et al. 2015), which may originate in the Proto-Siouan distal demonstrative *?ee. Another possibility is that the Siouan languages that permit multiple preverbs have the combination of *aa-* and *i-* become *e-*.

4.1 Prefix field

In Mandan, there are only two verbs with the generic preverb: *éehee* ‘say’ and *éereh* ‘think, want.’ The verb ‘say’ in Mandan is also the only truly irregular verb. Its conjugation appears on the table below.

Table 4.4: Conjugation of *éehee* ‘say’

	Singular	Dual	Plural
1	<i>éepe'sh</i>	<i>réeheero'sh</i>	<i>réehaanito'sh</i>
2	<i>éete'sh</i>		<i>éetaanito'sh</i>
3	<i>éeheero'sh</i> ~ <i>éehe'sh</i>		<i>éeheekere'sh</i> ~ <i>éehekere'sh</i>

The root verb *hee in Proto-Siouan *e(e)-hee ‘say’ contains a long vowel in its root, which is generally preserved in the third person forms. This long vowel is contracted in first and second person singular forms, and Hollow (1970) reports that a short vowel is permissible for the third person singular: i.e., *éehe'sh* ‘he said it.’ However, the overwhelming majority of instances of third person singular forms of *éehee* ‘say’ are *éeheero'sh*.

This verb sporadically ablauts; first and second person will ablaut but this does not happen for third person forms. The unexpected first and second person singular forms are descended from a subset of Proto-Siouan verbs that took reduced inflectional prefixes. For example, instead of the typical first person *wa-, some verbs took only *w-, and the same pattern held for second person *ya- and *y-. The cluster *wh obstruentized to [p] and clusters *rh and *yh became [t] in Mandan and became aspirated stops in other daughter languages, such as Lakota: e.g., Proto-Siouan *e(e)-w-hee > Lakota *ephé* ‘I say it.’ What may have formerly been a phonologically predictable process has become reanalyzed as irregular verb forms.

An additional peculiarity is that when this verb is marked for an animate object, the irregular stems remain. Normally, marking first and second person arguments involves prefixing the appropriate pronominals, but on top of these pronominals, Mandan preserves the irregular first and second person singular stems on top of normal prefixation. This means that the active argument (i.e., the subject) is marked twice: once prefixally and again suppletively on the verb stem. Examples of this irregular double marking appears below.

(27) Irregularities in inflectional markers for *éehee* ‘say’

- a. *éeminipe'sh*
ee-w-ri-pE=o'sh
PV-1A-2S-say.1A=IND.M
'I said it to you'

4 Verbal morphology

- b. *éemanate'sh*
ee-w-rq-tE=o'sh
PV-1s-2A-say.2A=IND.M
'you said it to me'
- c. **éeminiheero'sh*
ee-w-rj-hee=o'sh
PV-1A-2s-say=IND.M
'I said it to you'

The only other verb to take the generic preverb *e-* can also be traced back to having this preverb in Proto-Siouan, with PSi *e(e)-yehe 'think' remaining relatively unchanged in modern Mandan *éereh* 'think, want.'

(28) Examples of *éreh* 'want, think'

- a. *riréesika'shka* ó'*éereho'sh*
ri-reesik=a'shka o-ee-reh=o'sh
2POSS-tongue=PSBL PV.IRR-PV-think=IND.M
'he'll think that it might be your tongue' (Hollow 1973a: 189)
- b. *Kinúma'kshi* éeheni *Numá'k Mákxana íwahekanashe*
ki-ruwq'k ee-he=rj ruwq'k wáxraq i-wa-hek=rash=E
MID-man#be.good PV-say=ss man one PV.INS-1A-know=ATT=SV
wakína'ni éewereho'sh
wa-kirq'=rj ee-w-reh=o'sh
1A-tell=ss PV-1A-think=IND.M
'I want to tell about what I sort of know about First Creator and Lone
Man' (Hollow 1973a: 1)
- c. *raráahini* éerereho'sh
ra-rEEh=rj ee-r-reh=o'sh
2A-go.there=ss PV-2A-think=IND.M
'you want to go' (Hollow 1973a: 31)
- d. *xé'hini* éereho'sh
xe'h=rj ee-reh=o'sh
rain=ss PV-think=IND.M
'it might rain' (Hollow 1970: 182)

This verb is often used to denote potential, most typically with respect to stating what one wants to do or what one may do. It is also possible to create imper-

4.1 Prefix field

sonal constructions expressing the potential for some non-agentive act to happen, especially with weather verbs. Like *aa-*, the preverb *ee-* is not productive in Mandan.

4.1.1.4.1.3 Directional preverb: *i*-₁

The directional preverb is found on stative verbs alongside locative postpositions *=t* and *=taa*. This preverb is a reflex of the Proto-Siouan directional applicative **ii-*, and is only used to express motion towards or away from a location that is incomplete. Unlike most other preverbs, the directional *i*- is very productive in contemporary Mandan. It may appear on nominal elements and stative verbs, including verbalized nouns.

(29) Examples of directional *i*-

- a. *ímaatah* *waréeh* *íwateero'sh*
i-waqatah=t *wa-rEEh* *i-wa-tee=o'sh*
PV.DIR-river=LOC 1A-go.there PV.INS-1A-like=IND.M
 'I'd like to go to the river' (Hollow 1973a: 35)
- b. *ími'tit* *karáahini* *tasúhkeres*
i-wi'#ti=t *krEEh=rí* *ta-suk=krE=s*
PV.DIR-stone#abide=LOC go.back.there=ss AL-child=3PL=DEF
wa'áahuuroomako'sh
wa-aa-huu=oowák=o'sh
UNSP-PV.TR-come.here=NARR=IND.M
 'he went back to the village and brought his children' (Hollow 1973a: 177)
- c. *mí'shak*, *ípashahqkt* *náaketaa* *máá'qk*
w~ishak *i-pashahqk=t* *raqkE=taa* *waq'ak*
1S-PRO PV.DIR-north=LOC sit.AUX=LOC earth
íwasekto'sh
i-wa-sek=kt=o'sh
PV.INS-1A-make=POT=IND.M
 'as for myself, I'll make land that way to the north' (Hollow 1973a: 9)
- d. *máahsi* *máakahe rá'tseena*
waqh#si *waqkahE r'-at=s=ee=rq*
 arrow#feather these 2POSS-father=DEF=DEM.DIST=TOP

4 Verbal morphology

- káherekto'sh* *ínuma'ktaa*
 ka'hrE=kt=o'sh i-ruwq'k=taa
 have#CAUS=POT=IND.M PV.DIR-man=LOC
 'your father should give these eagle feathers away to the men' (Hollow 1973b: 226)
- e. *oo* *ó'haraani* *ímiisihqktaa* *máatah*
 oo o'hrE=rj i-wíjihqk=taa wqatah
 DEM.MID be#CAUS=SS PV.DIR-west=LOC river
rukxqhkereroomako'sh
 ru-kxqh=krE=oowqk=o'sh
 INS.HAND-ford=3PL=NARR=IND.M
 'they crossed the river from there to the west' (Hollow 1973b: 253)
- f. *pkés* *íwara't* *ráhini* *érehka'ehe*
 pke=s i-wra'=t rEEh=rj e-reh=ka'ehe
 turtle=DEF PV.DIR-fire=LOC go.there=ss PV-think=QUOT
 'the turtle wanted to go to the fire, it is said' (Hollow 1973b: 167)
- g. *karóotiki* *roo* *numá'ks* *írextaa*
 ka=ooti=ki roo ruwq'k=s i-rex=taa
 PROV=EVID=COND DEM.MID man=DEF PV.DIR-light=LOC
áareehkaroomako'sh
 aa-rEEh=ka=oowqk=o'sh
 PV.TR-go.there=HAB=NARR=IND.M
 'and then he kept taking him towards the light' (Hollow 1973b: 95)

There is no specific postposition that indicates motion away from somewhere, but motion away is peripherastically marked using a demonstrative like *oo* or *roo* 'that, there, then' followed by a causativized verb *ó* 'be.' This construction always bears the same-subject switch-reference marker, and such it is likely that *ó'haraani* is really just a singular lexical item that can be treated like a unit to mean 'from.'

Unlike most other preverbs, the directional *i*- is very productive. It may appear on any stative verb, including verbalized nouns.

4.1.1.4.1.4 Instrumental preverb: *i*-2

The instrumental preverb is the most common of all the preverbs, with an enormous amount of nouns and verbs lexically selecting for it. It is homophonous with the directional and ordinal preverbs. The distinction between PSi *i PV.DIR

4.1 Prefix field

and PSi *ii PV.INS has been lost in most daughter languages, with the vowel becoming short in all branches of Siouan except for Missouri Valley.

While this preverb may have introduced an instrumental non-core argument in Pre-Mandan, many instances of *i-* have no obvious instrument. It is possible that the instruments are covert, given that Mandan is a prolific *pro-drop* language, being able to omit subjects, direct objects, and indirect objects to be inferred by context.

(30) Examples of instrumental *i*-

4 Verbal morphology

- e. *weréh úuptaa xték ímitaarak numá'ks*
 wreh úuptaa xtE=ak i-wj-taa=ak ruwq'k=s
 door next.to be.big=DS PV.INS-1s-peek=DS man=DEF
rá'ke'ho're
ra'-ke'h=o're
 INS.HEAT-be.angry=IND.F
 'I peaked in right next to the big door and the man got mad' (Hollow 1973a: 98)
- f. *mí'se iħiġk*
 wj'#sE#i-hiġ=k
 stone#red#PV.INS-drink=HAB
 'Catlinite (lit. 'red pipe stone')' (Hollow 1970: 439)
- g. *maná īkawesh*
 wrq#i-ka-wesh
 wood#PV.INS-INS.FRCE-cut
 'axe (lit. 'chop wood with it')' (Hollow 1970: 439)
- h. *wiipashih*
 waa-i-pa-shih
 NOM-PV.INS-INS.PUSH-be.sharp
 'a file (lit. 'something that makes it sharp')' (Hollow 1970: 439)

The instrumental preverbs in (30a) and (30b) take overt instruments, while only one in (30c) has an overt instrument: i.e., a lot of tallow to make the pemmican. The word 'tallow' also involves an instrumental preverb, though the preverb serves no other purpose but to nominalize the verb 'be grease.' The *i*- in (30d) and (30e) lack any clear possible instrument, which suggests that these verbs are lexically selecting for this preverb for some historical reason that is no longer transparent. We see the use of *i*- as a nominalizer again in (30f) through (30h).

4.1.1.4.1.5 Ordinal preverb: *i*-3

The ordinal preverb *i*- has a limited scope of usage. Its sole use is to turn a cardinal number into ordinals.

(31) Examples of ordinal *i*-

- a. *kitiħka īnaaminiħak órookere*
 ki-tjh=ka i-raawriħ#ha=ak o-roo=krE
 MID-stick.out=HAB PV.ORD-three#times=DS PV.IRR-talk=3PL

4.1 Prefix field

- áanakoomako'sh*
 E#rąk=oowąk=o'sh
 hear#POS.SIT=NARR=IND.M
 'it became clearer the third time he heard what they were saying' (Hollow 1973a: 108)
- b. *íteetoki*
 i-teetoki
PR.ORD-eight
 'the eighth' (Hollow 1970: 439)
- c. *ínupha*
 i-rüp#ha
PR.ORD-two#times
 'the second time' (Hollow 1970: 440)
- d. *háp ikixuh*
 hap i-kixuh
 day **PV.ORD**-five
 'Friday (lit. 'fifth day')' (Hollow 1970: 439)

Other Siouan languages, such as Hidatsa (Park 2012) and Lakota (Ullrich 2011), describe ordinal numbers as being constructed by adding the instrumental preverb with the cardinal number. Its widespread use to ordinalize cardinal numbers makes it clear that this is a pan-Siouan characteristic of some Proto-Siouan element, though it is not clear if this preverb evolved from PSi *ii- PV.INS, PSi *i-PV.DIR, or some possible third item that has yet to be reconstructed. The ordinalizer *i*- is therefore classed as its own preverb here in order to highlight the semantic contrast it has with the other polysemous *i*- preverbs.

4.1.1.4.1.6 Possessive preverb: *i*-4

The final polysemous *i*- preverb is the possessive. The possessive *i*- primarily marks some established complex noun where the second element is marked as being inalienably possessed by the first. There are also a few idiomatic uses of the possessive *i*- where the first noun has been elided but still understood

(32) Examples of possessive *i*-

- a. *pó ishüt*
 po#i-shüt
 fish#PV.POSS-tail
 'fish tail' (Hollow 1970: 438)

4 Verbal morphology

- b. *núutka íhjse*
rүүtka#i-hj̥s=E
throat#PV.POSS-long.muscle=sv
'sternocleidomastoid muscle' (Hollow 1970: 75)
- c. *tamáshka ípa*
ta-wašhka#i-pa
AL-breast#PV.POSS-head
'nipple' (Hollow 1970: 142)
- d. *rók íwahuu*
rok#i-wa-huu
leg#PV.POSS-UNSP-bone
'thigh bone' (Hollow 1970: 187)
- e. *mató íwerook*
wəto#i-wrook
bear#PV.POSS-male.animal
'male bear' (Hollow 1970: 306)
- f. *pshíjxaa ímiihka*
pshíjxaa#i-wíjh=ka
sage#PV.POSS-woman=HAB
'female sage plant' (Hollow 1970: 286)
- g. *ípirak*
i-pirak
PV.POSS-ten
'tribal council [lit. 'those of the ten']' (Hollow 1970: 420)
- h. *ínuma'k*
i-ruwá'k
PV.POSS-man
'paterfamilias' (Hollow 1970: 438)

Each of the compounds above show that the the initial noun is the possessor, and that the second noun is tied to the first. In the case of *ípirak* 'tribal council' and *ínuma'k* 'paterfamilias,' the possessor has been omitted.

This preverb originates from the third person inalienable possessor prefix *i- in Proto-Siouan. This preverb is likewise used to denote inalienable possession in Mandan, though it is no longer productive. In some other Siouan languages like Hidatsa (Boyle p.c.), there are some nouns where the Proto-Siouan third person possessive prefix *i- has been reanalyzed as part of the stem, causing irregular possessive marking. A limited number of such nouns also exists in Mandan,

4.1 Prefix field

where what used to be a possessive is now considered part of the root: e.g., the *i in PSi *išta ‘eye’ > Mandan *istá* ‘face.’ Possessive-marking in Mandan, however, is quite regular. Third person possession in Mandan is not morphologically marked, aside from cases where possession is intrinsic, as we see in the case of the compounds above.

There are some vestiges of PSi *i- 3POSS in independent pronominal constructions like the ones we see below in (33).

(33) Fossilized remains of PSi *i- 3POSS

- a. *i’o’na*
i-o’=raq
PV.POSS-be=TOP
‘as for him/her/them...’ (Hollow 1970: 88)
- b. *mi’o’na*
w’-i-o’=raq
1s-PV.POSS-be=TOP
‘as for me’ (Hollow 1973b: 244)
- c. *i’o’rak*
i-o’=ak
PV.POSS-be=DS
‘he/she/they is/are the one(s)’ (Hollow 1970: 88)
- d. *ée’o’rak*
ee#o’=ak
DEM.DIST#be=DS
‘he is the one’ (Hollow 1973a: 212)
- e. *ní’o’rak*
r’-i-o’=ak
2s-PV.POSS-be=DS
‘you are the one’ (Hollow 1973a: 105)
- f. *ishák*
ishak
pro
‘he/she/it/they’ (Hollow 1973a: 1)

The examples in (33a) and (33c) above utilize the possessive preverb when making a pronominal-type construction, but switch back to typical first and second person possessives for marking pronouns in (33b) and (33e). In the bare pronoun

4 Verbal morphology

ishák, we see a stem-initial [i] that is a fossilized third-person possessive. The fact that it does not shift stress to the first syllable indicates that speakers no longer treat it as an analyzable unit within the overall lexical item, but its origin is clearly from PSi *i-. Since *i- is no longer productive as a general third person possessive marker, there is also a competing form with the distal demonstrative *ee* being incorporated into the pronominal construction in lieu of the possessive preverb. Constructions with *ee*, like the one in (33d), are more common in the corpus than those with the preverb *i-*, suggesting that the forms with *i-* are more archaic.

4.1.1.4.1.7 Reflexivizer preverb: *i'-*

The reflexivizer *i'-* is very uncommon, and appears on only a few verbs. Its origin is unclear, as it has no parallels to other Siouan preverbs or pronominals. There are several body parts pertaining to the face and head that begin with /i/ or /ii/, so it is possible that this preverb is a contracted version of one of these nouns that has been reanalyzed as having a reflexive meaning. This preverb is most commonly seen on the auxiliary *i'here* 'become, pretend,' consisting of the causative *heré* along with the reflexivizer preverb, and can also be used when one is causing something to happen to oneself or something owned by oneself. We never see the reflexive prefix *ki-* used with the causative. We can that *i'-* functions like other preverbs in the examples below.

(34) Examples of reflexivizer *j'*-

4.1 Prefix field

tongue' (Hollow 1973a: 191)

- d. *ú'sh rusháa* *pawésh* *í'hereroomako'sh*
 ú'sh ru-shE pa-wesh í'-hrE=oowąk=o'sh
 thus INS.HAND-grasp INS.PUSH-CUT PV.RFLX-CAUS=NARR=IND.M
 'so he took it and then he pretended to cut it' (Hollow 1973a: 191)
- e. *Numá'k Máxana níinami* *í'kahekoomaksjh*
 ruwą'k wąxrą rịj=awị í'-ka-hek=oowąk=sjh
 man one walk=CONT PV.RFLX-INCP-know=NARR=INTS
 'Lone Man was walking along and became aware of himself' (Hollow 1973a: 5)
- f. *ítopsha* *íhaa'aakit*
 i-top-sha i-haa#aaki=t
 PV.POSS-four-COLL PV.DIR-cloud#be.above=LOC
keréehkereroomako'sh, *kixkék* *í'haraani*
 krEEh=krE=oowąk=o'sh ki-kxek í'-hrE=rị
 go.back.there=3PL=NARR=IND.M MID-star PV.RFLX-CAUS=SS
 'All four of them returned to heaven, having turned into stars' (Hollow 1973a: 175)

This preverb is not productive in contemporary Mandan, with the reflexive prefix *ki-* being the most typical realization of reflexivity.

4.1.1.4.1.8 Locative preverb: *o*-₁

The locative preverb *o*- has cognates in all Siouan languages, and is a reflex of PSi **o*- PV.INES, where it carried an inessive meaning. Several other Siouan languages still preserve the semantics of the inessive preverb, indicating an action into a particular place. In Mandan, this preverb bears a more generalized locative reading, and is often used to create relative clauses to describe where an action is taking place.

(35) Examples of locative *o*-

- a. *páaxu óhop*
 paaxu#o-hop
 nose#PV.LOC-be.hollow
 'nostril' (Hollow 1970: 77)

4 Verbal morphology

- b. *miní óropxe*
wri#o-ropxE
water#PV.LOC-enter
'bathtub' (Hollow 1970: 189)
- c. *istámi' ósanake*
istawij#o-srąk=E
eye#PV.LOC-be.round
'eyeball' (Hollow 1970: 216)
- d. *ówati*
o-wa-ti
PV.LOC-1A-reside
'my house' Hollow (1970: 251)
- e. *súks xamáhaa shí ókashukaa*
suk=s xwəh=E=∅ shi o-ka-shuk=E
child=DEF little=SV=CONT foot PV.LOC-INS.FRCE-hang=SV
máaptet
waapte=t
river.bank=LOC
'the kids' feet were hanging over the river bank a little bit' (Hollow 1970: 181)
- f. *wáa'iparaare ímikak roo ú'sh*
waa-i-praa=E i-wík=ak roo ú'sh
NOM-PV.INS-be.big=SV PV.INS-be.none=DS DEM.MID be.thus
mí'reenus warúshaani réeshkawaharaa
wí'=ee=rú=s wa-ru-shE=rí re'eshka#wa-hrE=∅
stone=DEM.DIST=ANF=DEF 1A-INS.HAND-grasp=SS DEM.PROX-SMLT#CAUS
íwarootkik óseroopo're
i-wa-rootki=ak o-sroop=o're
PV.DIR-1Astrike=DS PV.LOC-swallow=IND.F
'It sure was big, so I took the aforementioned stone just like this and I put it in his mouth, and he swallowed it' (Hollow 1973a: 99)
- g. *tawáa'irukiriihs*
ta-waa-i-ru-kriih=s
AL-NOM-PV.INS-INS.HAND-be.lined.up=DEF
óptikanashini máhki, ishák,
o-ptik=rash=rí wák=ki ishak
PV.LOC-have.fallen.down=ATT=SS POS.LIE=COND PRO

4.1 Prefix field

- Kinúma'kshis* *kiwarátanashoomaks*
 ki-ruwə'k#shi=s ki-wrat=rash=oowak=s
 MID-man#be.good=DEF MID-dirt=ATT=NARR=DEF
 'His staff had fallen down when he was laying there, [for] he, First
 Creator, had turned into dirt' (Hollow 1973a: 8)
- h. *sákka róonapini* *áqwe nurúha'ni*
 sákka rV-o-rap=rí áqwe rú-ru-ha'=rí
 be.few 1A.PL-PV.LOC-find=ss all 1A.PL-INS.HAND-pick.berries=ss
nukúho'sh
rú-kuh=o'sh
 1A.PL-come.back.here=IND.M
 'we found a few, picked them all, and came back' (Hollow 1970: 52)

This preverb mirrors the possessive *i*- and instrumental *i*- in that it is used in compounds to express a relationship between two nominal elements. The locative preverb can likewise create a relative clause that is treated like a noun: e.g., *ówati* 'my house' (lit. 'where I live').

4.1.1.4.2 Irrealis preverb (Slot 7): *o*-₂

While there are a large number of applicative preverbs, they can be preceded by the irrealis preverb *o*-₂. In previous grammatical sketches of Mandan, this preverb has been treated as a future marker (Kennard 1936, Hollow 1970, Mixco 1997a). This preverb is found outside of contexts where there is no future reading.

(36) Non-future use of *o*-₂

- a. *Róoniire* *írasiinitki*,
 rV-o-ríj=E i-ra-sii=rít=ki
 1A.PL-PV.LOC-walk=SV PV.DIR-2A-travel=2PL=COND
órakiikirixinitq't, *tashká'eshkak* *roo* *résh*
o-ra-kiikrix=rít=q't *tashka-eshka=ak* *roo* *resh*
 PV.IRR-2A-catch.up.with=2PL=HYP how-SMLT=DS DEM.MID this.way
nanúhinito'sha?
ra-rúh=rít=o'sha
 2A-be.here=2PL=INT.M
 'If you (pl.) had followed our tracks, you might have caught up with
 us, so how come you're still here like this?' (Hollow 1973a: 208)

4 Verbal morphology

- b. “*roo wakxúhki ó’irahekq’t’ éeheni*
 roo wa-kxúh=ki o-i-ra-hek=a’t ee-he=rj
 DEM.MID 1A-lie.down=HYP PV.IRR-PV.INS-2A-know=CONS PV-say=SS
Kinúma’kshi kxúhoomako’sh
 ki-ruwá’k#shi kxúh=oowák=o’sh
 MID-man#be.good lie.down=NARR=IND.M
 “If I lie down here, you would know” he said and First Creator lay down.’ (Hollow 1973a: 1)
- c. *ishák ítaa órushenikini*
 ishak i-tE o-ru-shE=rj=k=rj
 PRO PV.INS-stand PV.IRR-INS.HAND-grasp=ITR=SS
kíhka’eheroo
 ki’h=ka’ehe=oo
 arrive.back.here=QUOT=DEM.MID
 ‘He was tired and could not take any more, so he got back, it is said now’ (Hollow 1973a: 124)

We see conditional constructions in (36a) and (36b), where *o-* is found following a conditional clause. Furthermore, we can see in (36b) that the *o-* is able to precede other preverbs, as in *ó’irahekq’t* ‘you would know.’ In cases where both *o-* preverbs appear, they are realized as a single syllable with a long [o:].

(37) Instances of sequential *o-* preverbs

- a. *óokaptiko’sh*
 o-o-ka-ptik=o’sh
 PV.IRR-PV.LOC-INS.FRCE-have.fallen.down=IND.M
 ‘he will shoot it down’ (Kennard 1936: 5)
- b. *óowakakqko’sh*
 o-o-wa-ka-kák=o’sh
 PV.IRR-PV.LOC-INS.FRCE-be.tight=IND.M
 ‘I will be mired’ (Kennard 1936: 5)

The use of *o-* in (36c) carries an even more unambiguously modal reading, rather than a temporal one. The narrator is describing a situation in the past and uses *o-* despite that lack of any future reading. We can also see that *o-* is not required in conditional constructions, given the data below, where only the first example bears *o-*, yet all subsequent examples still have a conditional reading, as we can see in (38) below.

4.1 Prefix field

The first two examples above feature the irrealis preverb *o-*, while the second pair do not. All of the data contain conditionals constructions that imply some future consequence to a conditional clause. The irrealis preverb can certainly be used to give future readings to an action or state, but it can also be used to mark hypothetical situations.

(38) Conditional constructions with and without *o-*

- a. *tópha* *wahúuki*, *ú'ka miní róoropxe're*
 top#ha wa-huu=ki ú'ka wr̥i rV-o-ropxE=o're
 four#times 1A-come.here=COND then water 1A.PL-PV.IRR-enter=IND.F
 'if I come four times, then we'll go swimming' (Hollow 1973a: 106)
- b. *wáarahuunixki* *óxiko'sh*
 waa-ra-huu=r̥ix=ki o-xik=o'sh
 NEG-2A-come.here=NEG=COND PV.IRR-be.bad=IND.M
 'if you don't come, it will be bad' (Hollow 1973b: 53)
- c. *tashká*, *waheréki*, *taté* *rásq't* *kitjho'xere*
 tashka wa-hrE=ki tatE ras=q't ki-tjh=o'xrE
 how 1A-CAUS=COND father.voc name=DEM.ANAP MID-stick.out=DUB
 'how will my father's name come out if I do it?' (Hollow 1973a: 61)
- d. *kotewé* *úyte* *rupásκiħki*
 ko-t-we úqt=E ru-pa-skjħ=ki
 REL-WH-INDF be.first=SV INS.HAND-INS.PUSH-cut.open=COND
taptiħjktō'sh
 ta-ptiħ=kt=o'sh
 AL-buffalo=POT=IND.M
 'if someone slashes it first, it will be his buffalo' (Hollow 1973b: 7)

Another use for the irrealis preverb is to create relative clauses and nominalize verbs in a similar manner to the locative and instrumental preverbs. We can see examples of this behavior below.

(39) Relativization and nominalization with *o-*

- a. *ó'i'tu*
 o-ħ'-tu
 PV.IRR-PV.RFLX-be.some
 'birth, birthday (lit. 'when one is born')' (Hollow 1970: 96)

4 Verbal morphology

- b. *wáa'okiraksqqamik*
waa-o-kiraksaq#wɪk
NEG-PV.IRR-make.war#be.none
'peace (lit. 'when there is no war')' (Hollow 1970: 111)
- c. *hq̍sh ósek*
hq̍sh#o-sEk
grape#PV.IRR-be.dry
'partially raisined grapes (lit. 'when the grape is dried out')' (Hollow 1970: 69)
- d. *wáa'ohaaxi*
waa-o-hE=xi
NEG-PV.IRR-see=NEG
'an invisible thing (lit. 'when one cannot see it')' (Hollow 1970: 71)
- e. *súk óhüyü̑kamik*
suk#o-hüyü̑ka#wɪk
child#PV.IRR-parent#be.none
'orphan (lit. 'when a child is parentless')' (Hollow 1970: 83)

Each of the tokens involving the unrealis preverb above are able to stand on their own as a relative clause, but these relative clauses are also able to then take nominal morphology such as articles, demonstratives, and postpositions. The unrealis preverb is highly productive in Mandan, and is frequently used to coin new words on the fly, or even as circumlocution for when a speaker does not remember a word but still wants to describe it. The literal nature of Mandan words means that there are often numerous possible ways to express a single concept, so the unrealis preverb frequently is employed to great effect.

4.1.2 Inflectional prefixes

Mandan makes heavy use of person and number marking on verbs. Unlike derivational prefixes, inflectional prefixes can also display a high degree of allomorphy. Most of these allomorphs are phonetically similar to a default formative, so it is likely that this allomorphy was at one time phonologically predictable at some point in the history of the language, either in pre-Mandan or in the protolanguage shared between Mandan and Missouri River Siouan (i.e., Hidatsa and Crow). This reliance on heavily-affixing verbal elements allows Mandan to omit overt nominal arguments. Mandan can take *pro-drop* to the extreme at times. We can compare the two sentences below.

4.1 Prefix field

(40) *Pro-drop in Mandan*

- a. *míihon'a_i* *páaxu shishíhka_j* *wará'nast_k*
wíjh=o'=raq *paaxu shi~shih=ka* *wra'=raq=t*
woman=be=TOP nose AUG~be.sharp=HAB fire=middle=LOC
íkq̣utekereroomako'sh
i-kq̣utE=krE=oowq̣ak=o'sh
PV.DIR-throw=3PL=NARR=IND.M
'it was those women who threw the mosquito in the middle of the fire'
(Hollow 1973b: 153)
- b. *pro_i pro_j pro_k* *íkq̣utekereroomako'sh*
pro_i pro_j pro_k *i-kq̣utE=krE=oowq̣ak=o'sh*
1A 3s 3S.LOC PV.DIR-throw=3PL=NARR=IND.M
'they threw it there'

The third person plural enclitic *=kere* marks a third person plural subject, there is no third person singular marking in Mandan, but the directional pre-verb *i-* indicates that there is a specific direction towards which the direct object is thrown. The presence of all this morphology supplies enough information that overt nominal arguments are not necessary to express the notion that the verb is ditransitive and what inflectional features these arguments have. Once a nominal element has been introduced into the discourse, subsequent references to it are typically elided. Subjects are most commonly dropped, with a system of switch-reference marking clarifying who is doing the action when both subjects are third person. Because of this strong preference for *pro-drop*, Mandan relies heavily upon context and inference, along with inflectional morphology, to convey who is doing an action, and who or what is undergoing said action.

We can divide the inflectional prefixes into two distinct groups: inner prefixes and outer prefixes. This distinction is drawn from the observation that certain prefixes will always appear after a preverb but before a verbal root (i.e., inner prefixes), while other prefixes appear before preverbs at the leftmost edge of the word (i.e., outer prefixes).

One major division between the kinds of prefixes is that pronominals in Mandan reflect the thematic role that an argument plays. Mandan has an active-stative alignment. Active marking typically indicates a semantic agent: i.e., someone who is undertaking an action. Stative marking is for arguments that lack any agency over the act: e.g., In some active-stative languages, the marking for subjects may either be active or stative, depending on the volitionality: e.g., 'I

4 Verbal morphology

coughed' may normally be stative, but if the speaker wishes to convey that this cough was intentionally and controllably done, the active may be used.

Mandan is a split-S language, meaning its subjects are lexically split between active or stative. That is to say, a verb is lexically categorized for whether its subject takes active marking or stative marking. Some verbs that lack a semantic agent still take active marking, such as *irukap* 'be unable,' though it is the case that no verbs with semantic agents take stative subjects. There are nine different inflectional prefixes, which are summarized below.

(41) Inflectional prefixes in Mandan

<i>wa</i> - ₁	first person singular active	<i>nu</i> -	first person plural active
<i>ma</i> -	first person singular stative	<i>ro</i> -	first person plural stative
<i>ra</i> -	second person active	<i>wa</i> - ₂	unspecified argument stative
<i>ni</i> -	second person stative	<i>waa</i> -	negative
		<i>ko</i> -	relativizer

A description of the distribution and variation of these prefixes appears in the sections that follow.

4.1.2.1 Second person prefix (Slot 4)

When multiple inflectional prefixes occur on the same verbal stem, the one closest to the root will be the second person marker. Unlike first person, the second person prefix does not encode number. There are two main prefixes that indicate a second person argument:

(42) Default second person markers

<i>ra</i> -	second person active
<i>ni</i> -	second person stative

We can see examples of these prefixes at work below.

4.1.2.1.1 Second person active prefix: *ra*-

The default marking for a second person active argument is the prefix *ra*- . This prefix is a reflex of the Proto-Siouan second person active marker *ya-, since PSi *y merged with *r in Mandan and Missouri Valley Siouan.

(43) Examples of second person active *ra*-

4.1 Prefix field

- a. *áakahqktaahq* *raréehki*, *mí'shak*, *pasháhqktaahq*
 aakahqk=taa=häq ra-rEh=ki w'-ishak pashahäk=taa=häq
 south=LOC=INS 2A-go.there=COND 1POSS-pro north=LOC=INS
weréeh-to'sh
 we-rEh=kt=o'sh
 1A-go.there=POT=IND.M
 'if you go to the south side, me, I'll go to the north side' (Hollow 1973a: 3)
- b. *wáa'iraseke* *shí'sh*
 waa-i-ra-sek=E shi=o'sh
 NOM-PV.INS-2A-make=sv be.good=IND.M
 'what you made is good' (Hollow 1973a: 11)
- c. *máa'qke* *raké'raa* *óراكخە* *hqakaa*
 wäq'äk=E ra-ke'=E=Ø o-ra-kxuh häqkE=Ø
 earth=sv 2A-dig=sv=CONT PV.IRR-2A-lie.down stand.AUX=CONT
íninaahki, *ó'үүкаш*
 i-ri-räq=ki o-үүка=o'sh
 PV.INS-2s-be.out.of.sight=COND PV.IRR-be.enough=IND.M
 'when you are out of sight, digging out a space as big as you when you
 lie down, that will be enough' (Hollow 1973a: 25)
- d. *súkite*, *matewé* *írasekinito'sha?*
 suk=rít=E wa-t-we i-ra-sek=rít=o'sha
 child=2PL=sv UNSP-WH-INDF PV.INS-2A-make=2PL=INT.M
 'children, what are you doing?' (Hollow 1973a: 28)
- e. *tashká'eshka* *rarátaxo'sha?*
 tashka-eshka ra-ra-tax=o'sha
 how-SMLT 2A-INS.MTH-make.loud.noise=INT.M
 'how come you are crying?' (Hollow 1973a: 42)
- f. *waráraapiniirq't* *ké'ka'haraata!*
 wa-ra-raaprii=q't ke'#ka'#hrE=ta
 UNSP-2A-be.around.neck=DEM.ANAP keep#have#CAUS=IMP.M
 'let him have that necklace of yours!' (Hollow 1973a: 58)
- g. *nukeréehki*, *waráruusto'sh*
 rü-krEh=ki wa-ra-ruut=kt=o'sh
 1A.PL-go.back.there=COND UNSP-2A-eat=POT=IND.M
 'when we get home, you can eat' (Hollow 1973a: 87)

4 Verbal morphology

- h. *náxihe, ítewetaa raréeho'na?*
 rä#xih=E i-t-we=taa ra-rEEh=o'rä
 mother.voc#be.old=SV PV.DIR-WH-INDF=LOC 2A-go.there=INT.F
 'grandmother, where are you going?' (Hollow 1973a: 89)

The overwhelming majority of second person active marking is carried out with the *ra-* prefix, but there are three allomorphs for this formative: /r'-/, /re-/, and /rä-/.

4.1.2.1.1.1 Allomorph /r'-/

An underlying /r'-/ allomorph appears with vowel-initial stems. The glottal stop then metathesizes with the following vowel and causes long vowels to contract, as described in §3.6.2.1. This is a completely predictable process for determining /ra-/ versus /r'-/.

(44) Second person active marking before vowel-initial stems

- a. *ní'maare íkų'hqq*
 r'-iwäq=E i-kų'=häq
 2POSS-body=SV PV.DIR-be.all.over=LOC
tákraharaani nitáxaraxeroo
 tak#ra-hrE=rj rj-ta-xrax=roo
 be.painted.with.white.clay#2A-CAUS=ss 2POSS-AL-chest=DEM.MID
manúuxikpa rá'kisekto'sh
 wa-rqü#xik#pa r'-aaki#isek=kt=o'sh
 UNSP-be.fog#be.bad#head 2A-be.above#PV.INS-make=POT=IND.M
 'you should paint your body all over with white clay and paint a skull
 on your chest' (Hollow 1973b: 98)
- b. *rá's raráahaarami míhna'k íma'pet*
 r'-as ra-rEEh=haa=awj wíjh#rä'k i-wä'pe=t
 2A-follow 2A-go.there=SIM=CONT woman#POS.SIT PV.DIR-below=LOC
háa ná'ko'sh
 hE rä'k=ind.m
 see POS.SIT=IND.M
 'as you follow it while you keep going down, this woman sits looking
 below' (Hollow 1973a: 82)

4.1 Prefix field

- c. *Óo o’haaani rá’kaani “ptamí’tis*
 oo o’#hrE=r̩ r’-aakE=r̩ p-ta-w̩’#ti=s
 DEM.DIST be#CAUS=SS 2A-step.on=SS 1POSS-AL-stone#reside=DEF
i’u’taa wakeréeho’sh, éetekto’sh
 i-ꝑ’=taa wa-krEEh=o’sh ee-te=kt=o’sh
 PV.DIR-be.closer=LOC 1A-go.back.there=IND.M PV-say.2s=POT=IND.M
 ‘from there you should step on it and say “I am going back toward my
 village.”’ (Hollow 1973b: 227)
- d. *ri’mahqo’sh*
 r’-iiwahap=o’sh
 2A-be.lost=IND.M
 ‘you are lost’ (Hollow 1970: 96)

As we see in (44d), the semantics of the verb *iimahqp* ‘be lost’ should require a stative subject, but the verb only takes active marking. This particular verb is one of several that are lexically marked to take active subjects. The allophonic variation between /ra-/ and /r’-/ has a small set of exceptions, including the verb *é* ‘hear’ and the verb *ú* ‘shoot, wound,’ where the /r’-/ allomorph is not never found in the corpus.

(45) Use of *ra-* before vowel-initial stem

- a. *waróore ra’éki, óshi’sh*
 wa-roo=E ra-E=ki o-shi=o’sh
 UNSP-talk=sv 2A-hear=COND PV.IRR-be.good=IND.M
 ‘if you hear what I say, it will be good’ (Hollow 1973b: 240)
- b. *ra’ú’sh*
 ra-u=o’sh
 2A-wound
 ‘you wound him’

These verbal roots are both monosyllables with no onset, so it is the case that /r’-/ is only a viable allomorph of /ra-/ on vowel-initial stems that are polysyllabic.

4.1.2.1.1.2 Allomorph /re-/

The allomorph /re-/, as Kennard (1936: 5) describes it, is less predictable. In transcriptions of narratives provided by speakers born during the middle of the nineteenth century, /re-/ is sometimes used before verbal stems that begin with a sonorant and /e e:/.

4 Verbal morphology

This trend towards local vowel harmony seems to be an incomplete change, as it is not consistent, even within data given by the same speaker. This allomorph also does not occur when there is intervening morphology between the inflectional prefix and the verbal root, and it is quite rare in data collected from speakers born around the turn of the twentieth century or later. We can see examples of *re-* instead of the expected *ra-* in the examples below.

- (46) Use of *re-* instead of *ra-*

The default prefix *ra-* is used almost exclusively instead of *re-* in contemporary Mandan. The one exception to this tendency is the verb *éreh* ‘want, think.’ There are more instances of *érereh* for ‘you want’ in the corpus than *érareh*, so it seems that this verb is developing into having a slightly irregular conjugation paradigm for some speakers, though both forms are valid.

4.1.2.1.1.3 Allomorph /ra-/

This allomorph of *ra-* is only found when preceded by a first person singular stative prefix. The default first person singular stative prefix is /wa-/ , though it

4.1 Prefix field

has an allomorph of /w-/ before a second person active prefix (see §4.1.2.2.1.2). This sequence is realized as [m̥nā]. It is possible that the nasalization on the second person form is a remnant of the nasality on the /wə-/ during a time when the nasal vowel did not syncopate before /ra-/. Being in contact with a nasal vowel could have caused the /r/ in *ra-* to have some nasality bleed over, which in turn caused it to be re-analyzed as /rə-/.

(47) Examples of /rə-/ instead of *ra-*

- a. *j'saara* *manaké'kakto'sh*
 $\dot{j}'-saa=E=\emptyset$ $w-rə-ke'#ka'=kt=o'sh$
 PV.RFLX-be.hurried=sv=CONT 1s-2A-keep#have=HAB=POT=IND.M
 'you should keep me hurrying' (Hollow 1973a: 223)
- b. *húutahak!* *manakíkütetko'sh*
 $huu=ta=hak$ $w-rə-kikütE=kt=o'sh$
 come.here=IMP.M=POL 1s-2A-help=POT=IND.M
 'please, come on! you can help me' (Hollow 1973a: 41)
- c. *weréxanash írapawehaa*
 $wrex=rəsh$ $i-ra-pa-weh=haa$
 kettle=ATT PV.INS-2A-INS.PUSH-hold.up=SIM
 $hijmanaherekto're$
 $hij#w-rə-hrE=kt=o're$
 drink#1s-2A-CAUS=POT=IND.M
 'you should let me drink while you hold out the pail' (Hollow 1973a: 131)
- d. *manakárápxaani* *érerehiki* *húuni*
 $w-rə-k-ra-pxE=rj$ $e-re-reh=kti=ki$ $huu=rj$
 1s-2A-MID-INS.FRCE-stumble=ss PV-2A-want=POT=COND come.here=ss
 $rāahta!$
 $rEEh=ta$
 go.there=IMP.M
 'you can grab me whenever you want, so come on and do it!' (Hollow 1973b: 159)

4.1.2.1.2 Second person stative prefix: *ni-*

The stative counterpart to *ra-* is often the subject of stative verbs or an object of transitive or ditransitive verbs.

4 Verbal morphology

(48) Examples of second person stative *ni-*

- a. *rapéna'ni* *nixíko'sh*
 ra-pera'=r̥i r̥i-xik=o'sh
 2A-be.slow=ss 2s-be.bad=IND.M
 'you are slow and bad' (Hollow 1973b: 163)
- b. *tashká'sha*, *ínuma'k* *nisáqakanito'sh*
 tashka=o'sha i-ruw̥a'k r̥i-saqaka=r̥i=o'sh
 how=INT.M PV.ORD-man 2s-be.few=2PL=IND.M
 'there are so few of you men, [so] how can this be?' (Hollow 1973b: 151)
- c. *istúhma'k* *shíharaanista*, *ninúma'kinito'sh*
 istuh#w̥a'k shi#hrE=r̥i=ta r̥i-ruw̥a'k=r̥i=o'sh
 night#POS.LIE be.good#CAUS=2PL=IMP.M 2s-man=2PL=IND.M
 'be careful tonight, [because] you (pl.) are men' (Hollow 1973b: 258)
- d. *ínikxqhinisto'sh*, *numá'kaaki ínihekinikitki*
 i-r̥i-kxah=r̥i=kt=o'sh ruw̥a'k-aaki i-r̥i-hek=r̥i=ki
 PV.INS-2s-laugh=2PL=POT=IND.M man-COLL PV.INS-2s-know=2PL=COND
 'if people know about you (pl.), they will laugh at you' (Hollow 1973a: 28)
- e. *ímikixkahini* *íni'u'taa* *waptáahini*
 i-w̥i-ki-xkah=r̥i i-r̥i-u'=taa wa-ptEh=r̥i
 PV.INS-1s-RFLX-put.on.regalia=ss PV.DIR-2s-be.closer=LOC 1A-run=ss
wahúukto'sh
 wa-huu=kt=o'sh
 1A-come.here=POT=IND.M
 'I will dress up and come running towards you' (Hollow 1973b: 70)
- f. *keréehniherekto'sh*
 krEEh#r̥i-hrE=kt=o'sh
 go.back.there#2s-CAUS=POT=IND.M
 'he will send you home' (Hollow 1973b: 219)

The first half of the examples above show stative subjects, while the second half show other stative arguments. There are two others allomorph for *ni-*: /r̥~-/ and /ru~-/.

4.1.2.1.2.1 Allomorph /r̥~-/

Very few verbal roots in Mandan are vowel-initial where that vowel is not a preverb. These verbs take a second person stative prefix that is similar to the one

4.1 Prefix field

described in §4.1.2.1.1.1. The variant of *ni*- that appears before vowel-initial stems is /r̥-/̥, which has the basic shape of the vowel-initial active /r̥-/̥, except for the fact that this prefix causes the vowel that follows it to become nasalized.

We can see the impact this floating nasal has on the surface representation of the verbs below.

(49) Second person stative marking before vowel-initial stems

- a. *ni'nisō'sh*
r̥-iřiš=o'sh
2s-be.alive=IND.M
'you are alive' (Hollow 1970: 91)
- b. *ni'wereero'sh*
r̥-iiwree=o'sh
2s-yawn=IND.M
'you yawn' (Hollow 1970: 98)
- c. *tashkā'eshkak* *mí'he* *tatq̥hq̥q* *ni'hinito'na?*
tashka-eshka=ak w̥'h=E ta~tq̥aq=hq̥aq r̥'i-ih=r̥it=o'r̥aq
how-SMLT=DS robe=SV R~be.different=INS 2s-be.drapped.in=INT.F
'how come you covered yourself with all kinds of different robes?' (Hollow 1973b: 237)

While the nasality on the prefix for example (49a) above can possibly be explained by nasal harmony spreading leftward from the root, there are no viable sources of nasal spread that can move from the roots *iiweree* 'yawn' or *ih* 'be drapped in something.' Let us compare the data above to the following example where we see no nasality on the prefix.

(50) Use of /r̥-/̥ instead of /r̥-/̥

- rí'sq̥ro'sh*
r̥-isq̥aq=o'sh
2s-be.in.a.hurry=IND.M
'you are in a hurry' (Hollow 1970: 92)

The lack of nasality on the first syllable indicates that we are looking at verb that takes active subjects. Thus, we can use this floating nasal on the prefix as a test for whether a verb takes an active or stative subject.

4 Verbal morphology

4.1.2.1.2.2 Allomorph /ru-/

When first person plural active agents act upon second person arguments (i.e., when the first person plural *nu-* immediately precedes a second person prefix), the second person stative is realized as *nu-* as well.

- (51) Examples of *nu-* as a second person stative marker

- a. *nunúkina'ktō'sh*
ru-ru-kirq' =kt=o'sh
 1A.PL-2s-tell=POT=IND.M
 'we will tell you' (Kennard 1936: 10)
- b. *máa'qke nunúku'nitki, ónitki raxkqhini*
waa'ak=E ru-ru-ku'=rít=ki o-ri-tki ra-xkáh=rí
 earth=sv 1A.PL-2s-give=2PL=COND PV.LOC-2s-be.allotted 2A-move=ss
raráahini
ra-rEEh=rí
 2A-go.there=ss
 'as soon as we give you the land, you go move to your allotment and...' (Treichter 2012b: 217)

This allomorph is very uncommon in the corpus, but common in conversation, due to the fact that the corpus consists mostly of traditional narratives about cultural figures. The /ru-/ form can only be realized if there is no preverb between the first person plural active *nu-* and the second person stative *nu-*. If a preverb is placed between these two preverbs, the second person stative reverts to its default shape, *ni-*.

4.1.2.2 First person singular prefix (Slot 5)

First person marking differs from second person marking in that there are dedicated first person singular and first person plural forms. First person prefixes will always precede a second person prefix, though the specific position within the prefix field depends on whether the first person argument is singular or plural. There are two main prefixes that indicate a first person singular argument:

- (52) Default first person singular person markers
- wa-* first person singular active
 - ma-* first person singular stative

4.1 Prefix field

Both of these prefixes have a number of allomorphs. The large degree of allomorphs that both the second person and first person singular prefixes have in Mandan is not unlike the large variation found in some other Siouan languages. This variation is taken to be a symptom of the fact that these prefixes are likely the earliest pieces of inflectional morphology to develop onto Proto-Siouan or Pre-Proto-Siouan stems, with material to the left of the inner pronominals being incorporated into the verbal complex at later stages in the development of various daughter languages.

We can see examples of these prefixes at work below.

4.1.2.2.1 First person singular active prefix: *wa-*

The most common realization of a first person singular active argument is the prefix *wa-*. This prefix is a reflex of the Proto-Siouan first person singular active marker *wa-.

(53) Examples of first person singular active *wa-*

- a. *rá'skamak* *wáawahē'sh*, *manápusheke*
 ra'ska#wāk waa-wa-hE=o'sh wrā#pushek=E
 summer#POS.LIE some-1A-see=IND.M tree#juneberry=SV
 'this summer I saw some of them, juneberries' (Hollow 1973a: 52)
- b. *wa'áani* *hiré wahúuro'sh*
 wa-E=r̄i hire wa-huu=o'sh
 1A-hear=ss now 1A-come.here=IND.M
 'I heard it and now I came' (Hollow 1973a: 41)
- c. *wáahokshukanashe* *hiré qqwe íwaseko'sh*
 waa-ho#kshuk=rāsh=E hire aqwe i-wa-sek=o'sh
 NOM-voice#be.narrow=ATT=SV now all PV.INS-1A-make=IND.M
 'I made all the small creatures now' (Hollow 1973a: 11)
- d. *masásaks* *u'taa* *waráahini* *wahík*
 wā-sa~sak=s u'=taa wa-rEEh=r̄i wa-hi=ak
 UNSP-AUG~be.dry=DEF be.closer=LOC 1A-go.there=ss 1A-arrive.there=DS
numákaaki hū're
 ruwā'k-aaki hū=o're
 man-COLL be.many=IND.F
 'I went to the badlands and when I got there, there were many people'
 (Hollow 1973b: 318)

4 Verbal morphology

- e. *q'ska wapu'h shíwahereka'sh*
 q'ska wa-pu'h shi#wa-hrE=ka=o'sh
 that.way 1A-doctor be.good#1A-CAUS=HAB=IND.M
 'I am able to doctor that way' (Hollow 1973a: 25)
- f. *ptaníshkere máá'qhu'shtaa réehwahere'sh*
 p-ta-ríshkrE waaq'ak=ku'sh=taa rEEh#wa-hrE=o'sh
 1POSS-AL-medicine earth=be.inside=LOC go.there#1A-CAUS-IND.M
 'I put my medicine under the ground' (Hollow 1973a: 48)
- g. *wáa'owaraahinixo'sh*
 waa-o-wa-rEEh=ríx=o'sh
 NEG-PV.IRR-1A-go.there=NEG=IND.M
 'I am not going to go there' (Hollow 1973a: 48)
- h. *wahík, manáxot raxápaa náakek,*
 wa-hi=ak wrá#xot ra-xap=E räqkE=ak
 1A-arrive.there=DS wood#gray INS.FOOT-be.peeling=SV sit.AUX=AK
wáawaka'rak, máamaku'nixo're
 waa-wa-ka'=ak waa-wa-ku'=ríx=o're
 some-1A-have=DS NEG-1s-give=NEG=IND.F
 'I arrived as she was peeling gray wood, so I asked for some, but she
 did not give me any' (Hollow 1973a: 121)

While the majority of situations where a first person singular active argument is present involves *wa-*, there are three other allomorphs: /w'-/, /we-/, and /w-/.

4.1.2.2.1.1 Allomorph /w'-/

This formative mirrors the distribution of /r'-/, described in §4.1.2.1.1. Whenever the first person singular active pronominal appears before a vowel-initial stem, /w'-/ is used instead of /wa-/. Mandan does not permit [C?] clusters, as outlined in §3.6.2.1, so this prefix will be realized [w] that shares a syllable with a coda [?].

We can see examples of this allomorph in (54) below. Note that in cases where /w'-/ occurs before a stem beginning with a long vowel, the /?/-metathesis will result in the truncation of the long vowel due to a restriction on superheavy syllables in Mandan: i.e., /VV?/ → /V?/.

- (54) Use of /w'-/ for first person singular active

4.1 Prefix field

- a. *wí'mahqpo'sh*
w'-iiwəḥap=o'sh
1A-be.lost=IND.M
'I am lost' (Hollow 1970: 96)
- b. *wá'kana'k*
w'-aaki#rə'k
1A-be.above#POS.SIT
'I ride horseback' (Hollow 1970: 59)
- c. *wá'keroomako'sh*
w'-aakE=oowək=o'sh
1A-step.on=NARR=IND.M
'I stepped on it' (Trechter 2012b: 128)
- d. *wá'kakshe'sh*
w'-aakakshE=ošh
1A-meet=IND.M
'I met him' (Kennard 1936: 3)

Like with /r'-/, /w'-/ does not appear on open monosyllable roots: e.g., é 'hear' is *wa'é* for 'I hear,' never **wé*.

4.1.2.2.1.2 Allomorph /we-/

The allomorph /we-/ is analogous to the /re-/ allomorph in §4.1.2.1.2. It sparingly appears before verb roots that begin with sonorants and have /e e:/ in the root. It most commonly occurs with the verb éereh 'think, want' to the point that the majority of the tokens of éereh that are conjugated for first person singular active subjects have *we-* instead of *wa-*.

Other verbs take *we-* sparingly, so it is not completely predictable, but it happens with éereh so often that we can say that this allomorph is likely part of the conjugation paradigm of this particular verb. It is not clear if this is a recent change in Mandan verbal morphology, or if the *wa-/we-* distribution was more predictable in the past. The other verb that commonly takes *we-* is réeh 'go ther.' The *we-* appears to occur with verbs whose roots have a closed syllable containing /e/ or /ee/. Verbs whose roots have open syllables do not take *we-*.

(55) Examples of *we-*

4 Verbal morphology

- a. ówa'ek wakína'ni éewereho'sh
 o-wa-E=ak wa-kirq'=rj ee-we-reh=o'sh
 PV.IRR-1A-hear=DS 1A-tell=ss PV-1A-want=IND.M
 'I want to tell what I heard' (Hollow 1973a: 47)
- b. iweheko'sh
 i-we-hek=o'sh
 PV.INS-1A-know=IND.M
 'I know it' (Kennard 1936: 5)
- c. háki, nitúquminiKE áawereehki,
 ha=ki rj-tuuwrjik=E aa-we-rEEh=ki
 PROV=COND 2POSS-clan.aunt=SV PV.TR-1A-go.there=COND
 q'teena ísekto'sh
 q't=ee=rq i-sek=kt=o'sh
 DEM.ANAP=DEM.DIST=TOP PV.INS-make=POT=IND.M
 'So, if I take him to your clan aunt, that one should do it' (Hollow 1973a: 57)

The *we*- allomorph of *wa*- is less frequently encountered than the *re*- allomorph of *ra*- in the corpus. It is not clear whether this asymmetry is significant, but it is the case that both *we*- and *re*- seem to be lexically conditioned rather than be morphologically or phonologically conditioned.

Allomorph /w-/ In contemporary Mandan, the *wa*- prefix cannot precede a second person prefix. When a first person singular active argument acts upon a second person argument, we must use the allomorph /w-/ instead of *wa*- . Many daughter languages of Proto-Siouan had a productive phonological process whereby inflectional prefixes beginning with a sonorant syncopated their short vowel before another sonorant. This process is no longer productive in Mandan, but it has left its mark in instances such as /w-/. When combined with *ni*-, the /w-/ nasalizes to [m] and an excrecent Dorsey's Law vowel appears between the /w-/ and the /rj-/ to create a sequence of [m̩ni].

(56) Examples of /w-/ for first person singular active

- a. mini'áashko's
 w-rj-E=ashko'=s
 1A-2s-hear=EMPH=DEF
 'I heard you' (Hollow 1973a: 41)

4.1 Prefix field

The prefix /w-/ will never be realized without nasalization due to the fact that it must always appear before /r̩-/, which will spread its [+nasal] feature leftward according to the conditions laid out in §3.6.3. This allomorph is always tautosyllabic with /r̩-/, which is what leads Kennard (1936: 10) to treat this combination as a portmanteau, rather than two discrete morphological items that merely share a syllable.

4.1.2.2.2 First person singular stative prefix: *ma-*

The first person singular stative prefix has a similar phonological shape as the first person singular active marker, with the only exception being that it has an underlying nasal vowel instead of an oral one. The first person singular stative prefix is used to mark non-agentive subjects, as well as all other non-subject arguments that bear first person singular semantic features.

(57) Examples of *ma-*

4 Verbal morphology

- a. *manáseena* “*mawáaxe’sh*” *éeheroomako’sh*
 wr̥=s=ee=r̥ w̥a-waaxe=o’sh ee-he-oow̥ak=o’sh
 tree=DEF=DEM.DIST=TOP 1s-cottonwood=IND.M PV-SAY=NARR=IND.M
 ‘the tree said ‘I am a cottonwood” (Hollow 1973a: 36)

b. *súhkaratoohereka* *ma’i’shka’sh*
 suk#k-ratoo#hrE=ka w̥a-u’sh=ka=ind.m
 child#MID-be.old#CAUS=HAB 1s-be.thus=HAB=IND.M
 ‘I am the child-rearing kind [of person]’ (Hollow 1973a: 113)

c. *hiré watéhqkaa* *numá’k ímahuuka’sh*
 hire wa-te#hákE=∅ ruw̥a’k i-w̥a-huuka=o’sh
 here 1A-stand#POS.AUX=CONT man PV.INS-1s-be.brave=IND.M
 ‘I am a brave man, standing here’ (Trechter 2012b: 91)

d. *mamáxikanasho’sh*
 w̥a~w̥a-xik=r̥ash=o’sh
 AUG~1s-be.bad=ATT=IND.M
 ‘I am kind of sick’ (Hollow 1973b: 107)

e. “*wáa’ahuuki*, *órara’kto’re*”
 waa-aa-huu=ki o-ra-ra’k=kt=o’re
 some-PV.TR-come.here=COND PV.LOC-2A-make.a.fire=POT=IND.F
éemaheerak
 ee-w̥a-hee=ak
 PV-1s-say=DS
 ““if he brings some, you can build a fire,” she said to me’ (Hollow 1973a: 120)

f. *rá’ts* *wáa’owakiniire* *qqwe maséero’sh*
 r’-at=s waa-o-wa-ki-rij=E aqwe w̥a-see=o’sh
 2POSS-father=DEF NOM-PV.IRR-1A-RFLX-run=sv all 1s-defeat=IND.M
 ‘your father beat me every time I raced him’ (Hollow 1973a: 124)

g. *hí háshkakere’sh*, *mapí’kto’sh*
 hi hásh=ka=krE=o’sh w̥a-pi’=kt=o’sh
 tooth be.long=HAB=3PL=IND.M 1s-devour=POT=IND.M
 ‘his teeth are long [and] he might eat me up’ (Hollow 1973a: 143)

h. *káare ótaamaharaata*, *mishúyka!*
 kaare o-taa#w̥a-hrE=ta w̥i-shyüka
 IMP.NEG PV.LOC-be.pointing#1s-CAUS=IMP.M 1POSS-male’s.younger.brother
 ‘do not point it at me, my brother!’ (Hollow 1973a: 167)

4.1 Prefix field

The first half of the examples above demonstrate that *ma-* is used for verbs that take stative subjects, while the second half of the data above highlights that *ma-* can be used for both direct and indirect objects.

While PSi *w_q can be reconstructed as a possible first person singular stative marker in Proto-Siouan, it is a much more marked variant, with reflexes of *w_j being the norm across most daughter languages. It is not clear whether there was a semantic distinction between these two formatives or if the difference between them may have originally been constrained by some aspect of the grammar of Proto-Siouan or Pre-Proto-Siouan.

This confusion between PSi *w_q and *w_j surfaces in Mandan, where speakers sometimes replace *ma-* with *mi-*. This allomorphy is described below, as well as the the allomorphy of *ma-* with /w[~]-/ and /w-/.

4.1.2.2.1 Allomorph /w[~]-/

For vowel-initial verbal stems, we cannot use *ma-*, but its allomorph /w[~]-/ instead. This prefix is similar to the first person singular active variant /w[~]-/ from §54, but this prefix bears a floating nasal. This floating nasal causes the syllable this formative prefixes onto to become nasalized, which then spreads its nasal feature leftward to cause the underlying /w/ in /w[~]-/ to be realized as [m].

(58) Examples of /w[~]-/ for first person singular stative

- a. *mi'ktqho'sh*
w[~]-ikt_qh=o'sh
1s-be.cold=IND.M
'I am cold' (Hollow 1970: 88)
- b. *mi'nisō'sh*
w[~]-irj_s=o'sh
1s-be.alive=IND.M
'I am alive' (Hollow 1970: 91)
- c. *mi'wereero'sh*
w[~]-iiwree=o'sh
1s-yawn-IND.M
'I yawned' (Hollow 1970: 98)
- d. *mishū_qka* *mú'pa* *ómahikxikanashaa*
w_j-shū_qka w[~]-ū_pa o-w_q-hikxik=rash=E=Ø
1POSS-younger.brother 1A-with PV.LOC-1s-be.poor=ATT=SV=CONT
'my brother is sort of poor with me...' Hollow 1973b: 284

4 Verbal morphology

The limited number of verbs that have vowel-initial roots means that this prefix is not common. However, there are enough examples to know that we tell the difference between a vowel-initial stem with an active versus a stative subject. Hollow (1970: 34) does not describe this distinction, writing instead that /wa-/ goes to /w'-/ before a vowel with [–round] features. Hollow's dictionary is one of the few sources of full sets of conjugation paradigms, but he does not identify any cause for why certain vowel-initial stems become nasalized while others do not. By winnowing away at the differences between the oral and nasal realizations of these vowel-initial stem prefixes, we can justify the distinction between active and stative verbs as being caused by a floating nasal in the stative prefixes, while the active prefixes do not automatically trigger nasalization.

4.1.2.2.2 Allomorph /w-/

The default first person singular stative prefix *ma-* can never appear before a second person active prefix. When a second person active argument acts upon a first person singular stative argument, then *ma-* is realized as /w-/ instead. Kennard (1936: 10) treats the ensuing [m̩nā] syllable as a portmanteau (i.e., /wrā/), but this sequence is not a single morphological item.

(59) Examples of /w-/ as first person singular stative prefix

- a. *ptawíihqka* *máxana raharáá* *manakú'kto'sh*
 p-ta-wiihqa wáxra ra-hrE=∅ w-rä-ku'=kt=o'sh
 1POSS-AL-grandchild one 2A-CAUS=CONT 1s-2A-give=POT=IND.M
 'you can make one grandchild keep it for me' (Hollow 1973a: 61)
- b. *ráhta!* *wáa'imanasqqapekto'sh*
 rEEh=ta waa-i-w-rä-säape=kt=o'sh
 go.there=IMP.M NEG-PV.INS-1s-2A-go.around=POT=IND.M
 'go! you should not go around me' (Hollow 1973a: 147)
- c. *manatéexikini* *q'shkarahere're*
 w-rä-tee#xik=rj q'shka#ra-hrE=o're
 1s-2A-like#be.bad=ss be.that.way#2A-CAUS=IND.F
 'you do not like me, so you did it like that' (Hollow 1973a: 71)
- d. *"numá'kshiki* *rásé* *núpo'sh,"* *éemanateso'sh*
 ruwä'k#shi=ki ras=E rup=o'sh ee-w-rä-te=s=o'sh
 man#be.good=COND name=sv two=IND.M PV-1s-2A-say.2s=DEF=IND.M
 'you said "if he is chief, there are two names" to me' (Hollow 1973b: 57)

4.1 Prefix field

- e. *wawáruutanashak ímanapse'sh*
wa-wa-ruut=rash=ak i-w-rash-psE=o'sh
UNSP-1A-eat=ATT=DS PV.INS-**1s**-2A-bother=IND.M
'you are bothering me while I am eating' (Hollow 1973b: 133)

f. *hiré'oshka máamanakarahnixo'sh*
hire-oshka waa-w-rash-krah=rash=o'sh
now-EMPH NEG-**1s**-2A-be.afraid.of=NEG=IND.M
'you are not afraid of me even now' (Hollow 1973b: 96)

The distinction between the default /wə-/ and /w-/ is that the /w-/ involves a Dorsey's Law vowel, while the default is a full, phonological vowel. We can perceive the distinction between these two allomorphs by observing stress placement and recording vowel duration, since Dorsey's Law vowels are systematically shorter than phonemic short vowels. Stress assignment does not take Dorsey's Law vowels into account, while underlying vowels are factored into footing. The intrusive vowel in /w-/ will never affect stress assignment, while the /ə/ in /wə-/ always will.

4.1.2.2.2.3 Allomorph /wɪ-/

This variant of *ma-* appears sporadically throughout the corpus. We can predictably see it used with reflexives.

(60) Examples of /wɪ-/

4 Verbal morphology

- d. *mími'ratooro'sh*
wi~wí -ratoo=o'sh
 AUG~1s-be.old=IND.M
 'I am the oldest' (Hollow 1973a: 6)
- e. *mi'ma'o'ro'sh*
wí~wá-o'=o'sh
 AUG~1s-be=IND.M
 'I am the one' (Hollow 1973a: 121)

The use of *mi*- before reflexives is documented in previous literature (Kennard 1936, Hollow 1970, Mixco 1997a). However, there is periodic alternation between *mi*- and *ma*- . Mr. Edwin Benson, the last L1 speaker of Mandan, would sometimes vacillate between *mi*-, *mii*-, and *mi'*- for the first person singular stative when giving elicitations. It is not clear if this alternation with *ma*- means that *mi*- is in free variation with *ma*-, or if this is an artifact of language contact with Hidatsa, whose first person stative marker is *mii*- . Virtually all native speakers of Mandan have also spoken Hidatsa as well since at least the beginning of the twentieth century, so it is plausible that this alternation between different manifestations of the first person singular stative marker is due to the prevalence of Hidatsa usage on the Fort Berthold Indian Reservation.³

One piece of evidence that they are interchangeable for some speakers is the fact that there are a number of examples of emphatic reduplication in the corpus where the reduplicated element is one prefix, and the base element is the other prefix, as we see in *mi'ma'o'ro'sh* 'I am the one' or 'it is me'.

Another possibility is that there is an analogical change where first person singular stative in Mandan is *ma*-, but second person stative is *ni*-, and speakers are replacing the vowel in /wá-/ with /í/ to bring it more in line with the phonological shape of the second person stative. The scarcity of *mi*-type prefixes in place of *ma*- in the corpus and the lack of L1 speakers renders it difficult to accurately assess what conditions outside of reflexives that *mi*- is used instead of *ma*-.

4.1.2.3 First person plural prefix (Slot 8)

The first person plural prefixes are the first of the outer pronominals. They will always appear to the left of a preverb. Rankin et al. (1998, p.c.) believes that the

³Mr. Benson had remarked several times in the past that he was more accustomed to speaking Hidatsa in his later years than Mandan. Park (p.c.) remarks that he had sometimes used Hidatsa as a medium of conversation with Mr. Benson a number of times to elicit Mandan data and narratives.

4.1 Prefix field

difference in first person singular and non-singular marking in Siouan is due to a pronominal element being grammaticalized onto the verb stem late in the development from Proto-Siouan into its daughter languages. From there, certain languages lost this dedicated first person plural marking, and transferred plural-marking to enclitics.

Mandan retains a reflex of the Proto-Siouan first person marker **ru-*, which is the first person plural active prefix *nu-*. In [Kasak \(2015, 2016\)](#), I make the case that Yuchi is a Siouan language that has undergone much lexical, morphological, and phonological innovation since splitting from Proto-Siouan. This particular morphological item is one piece of support for this hypothesis. All other Siouan languages have **u-* as their first person plural marker, but Yuchi has *o-* as its first person inclusive prefix and *rō-* as its first person exclusive prefix. The Mandan form appears to be cognate with the exclusive form, but Mandan *nu-* carries an inclusive reading, which suggests that PSi **u-* merged with **ru-* in Mandan, but the reverse happened in Core Siouan: i.e., Mississippi Valley and Ohio Valley Siouan merged the exclusive marker into the inclusive marker.

We can compare first person plural marking in several Siouan languages below. Both Biloxi and Hidatsa have a generalized first person prefix and express plurality through enclitics.⁴ Mandan and Lakota retain the use of dedicated first person plural prefixes. Both languages also permit a dual reading by simply adding the first person plural prefix without an accompanying plural enclitic.

(61) First person plural marking in Siouan

- a. *qkidēē(tu)*
 q-ki-dēē=tu
 $1\text{A.PL-VERT-go.there=PL}$
‘we go there’ ([Einaudi 1976](#): 77) [Biloxi⁵]
- b. *mú’shia’c*
 m-u’shia=’a=
 1A-arrive=PL=IND
‘we arrived’ (Bird Bear p.c.) [Hidatsa]
- c. *uŋyé* ~ *uŋyáŋpi*
 uŋ-yA uŋ-yA=pi
 1A.PL-go.there 1A.PL-go.there=PL
‘we (du.) went there’ vs ‘we (pl.) went there’ ([Ullrich 2011](#): 695) [Lakota]

⁴[Einaudi \(1976: 46\)](#) observes that plural marking in Biloxi is optional once a subject has been established as being plural.

⁵I have altered the orthography in [Einaudi \(1976\)](#) to be in line with that found in [Kaufman’s \(2011\)](#) dictionary.

4 Verbal morphology

- d. *nuréeho'sh* ~ *nuráahinito'sh*
 r̥-rEEh=o'sh r̥-rEEh=r̥t=o'sh
 1A.PL-go.there=IND 1A.PL-go.there=2PL=IND.M
 'we (du.) went there' vs 'we (pl.) went there' [Mandan]

Mandan has two main prefixes that indicate a first person plural argument, which are shown below.

- (62) Default first person plural markers
nu- first person plural active
ro- first person plural stative

Examples of the prefixes above appear in the following subsections.

4.1.2.3.1 First person plural active prefix: *nu-*

The default allomorph *nu-* common in conversational Mandan and in the corpus. This prefix is in complementary distribution with the first person singular prefixes, though it can co-occur with second person prefixes.

- (63) Examples of first person plural active prefix *nu-*

- a. *máanuhe mikó'sh*
 waa-r̥-hE w̥ik=o'sh
 NOM-1A.PL-see be.none=IND.M
 'we (du.) saw nothing' (Hollow 1973b: 186)
- b. *hiré máanuxkqhinixo'sh*
 hire waa-r̥-xk̥ah=r̥jx=o'sh
 now NEG-1A.PL-move=NEG=IND.M
 'now we (du.) will not break camp' (Hollow 1973b: 195)
- c. *tópha náhki, nutíkto'sh, éeheeroomako'sh*
 top#ha r̥ak=ki r̥u-ti=kt=o'sh ee-hee=oow̥aq=k=o'sh
 four#times POS.SIT=COND 1A.PL-arrive.here=POT=IND.M PV-say=NARR=IND.M
 "we (du.) will arrive when it is the fourth time," he said' (Hollow 1973b: 243)
- d. *nukirúharaanik nukúhka'sh*
 r̥u-k-rhu#hrE=r̥j̥k r̥u-kuh=ka=o'sh
 1A.PL-VERT-SEQ#CAUS=ITR 1A.PL-come.back.here=HAB=IND.M
 'we (du.) always come home when we head back here' (Hollow 1973b: 151)

4.1 Prefix field

- e. *hóoraka ptáqka* *mú'pani*
 hóoraka p-(ta)-täqka w'-ǖpa=r̄i
 yesterday 1POSS-AL-woman's.younger.sister 1A-with=ss
warúha' *núreeho'sh*
wa-ru-ha' *r̄u-rEh=o'sh*
 UNSP-INS.HAND-pick.berries 1A.PL-go.there=IND.M
 'yesterday I went berry-picking with my sister' (Hollow 1973a: 52)
- f. *xamáhe nurúshektiki,* *íhehka'sh*
 xwäh=E r̄u-ru-shE=kti=ki i-hek=ka=o'sh
 be.little=sv 1A.PL-INS.HAND-grasp=POT=COND PV.INS-know=HAB=IND.M
 'whenever we (du.) take a little, he always knows' (Hollow 1973b: 116)
- g. *óo ú̄upanq nurúsanahini*
 oo ǖpa=nä r̄u-ru-sräqäh=r̄i
 DEM.MID elk=TOP 1A.PL-INS.HAND-leave.behind=ss
nuhúuro'sh
r̄u-huu=o'sh
 1A.PL-come.here=IND.M
 'we (du.) left an elk there and came' (Hollow 1973b: 180)
- h. *nupáminishinito'sh*
 r̄u-pa-wr̄ish=r̄it=o'sh
 1A.PL-INS.PUSH-be.rolled.up=2PL=IND.M
 'we (pl.) rolled it up' (Hollow 1970: 462)
- i. *nu'áanito'sh*
 r̄u-E=r̄it=o'sh
 1A.PL-hear=2PL=IND.M
 'we (pl.) hear it' (Hollow 1970: 473)
- j. *máanuhaanitinixo'sh*
 waa-r̄u-hE=r̄it=r̄ix=o'sh
 NEG-1A.PL-see=2PL=NEG=IND.M
 'we (pl.) did not see it'

Whenever *nu-* appears without the second person plural enclitic =*nit*, *nu-* typically carries a dual inclusive reading: i.e., the speaker and the addressee only. The enclitic =*nit* grants a plural reading, and does not automatically give an inclusive reading.

4 Verbal morphology

4.1.2.3.1.1 Allomorph /rV-/

As an outer pronominal, *nu-* often comes into contact with preverbs. All preverbs in Mandan lack an onset, and the frequency at which *nu-* abutted these preverbs has caused Mandan to develop an allomorph where the underlying nasal vowel of /ru-/ *nu-* harmonizes with the following vowel. First person active plural marking onto a vowel-initial stem will cause the initial vowel to lengthen, and the lack of an underlying nasal does not cause the /r/ to nasalize.

- (64) Examples of /rV-/

- a. *sákqa róonapini* *qáwe nurúha’ni*
 sákqa rV-o-rap=rí qáwe rú-ru-ha’=rí
 be.few 1A.PL-PV.LOC-find=ss all 1A.PL-INS.HAND-pick.berries=ss
 nukúho’sh
 rú-kuh=o’sh
 1A.PL-come.back.here=IND.M
 ‘we found a few, we picked everything, and we came back’ (Hollow 1973a: 52)

b. *wáa’oksqq* *íseke* *síhanashak*
 waa-o-ksaq i-sek=E síh=rash=ak
 NOM-PV.IRR-trouble PV.INS-make=sv be.strong=ATT=DS
 ríihekinito’sh
 rV-i-sek=rít=o’sh
 1A.PL-PV.INS-know=2PL=IND.M
 ‘he does crooked things all the time and we know it’ (Hollow 1973a: 43)

c. *ríisqaro’sh*
 rV-isaq=o’sh
 1A.PL-be.in.a.hurry=IND.M
 ‘we are in a hurry’ (Hollow 1970: 92)

This formative is mostly seen in conjunction with preverbs, but /rV-/ also appears when used with any of the few vowel-initial verbal roots in Mandan as we can see in (64c). With vowel-initial stems, the main difference between a second person active form and a first person plural active form is whether the first syllable involves a short vowel and a coda glottal or a long vowel.

- (65) *ri'sqaqo'sh*
 r'-isqaq=o'sh
 2s-be.in.a.hurry=IND.M
 'you are in a hurry' (Holloway 1970: 92)

4.1 Prefix field

We can see in (65), the /r'-/ prefix causes metathesis with the glottal stop and the initial vowel, creating a closed syllable, but with the /rV-/ in (64c), the syllable remains open and the initial vowel lengthens. The distinction between these two words can be minimal or nonexistent in fast speech where [V?] can be realized as [V:]. Context certainly helps clarify what subject marking a speaker intends in cases like this one.

4.1.2.3.1.2 Allomorph /r-/

Mandan prohibits trimoraic syllables, as discussed in §3.6.1.3, but some preverbs and vowel-initial verbal roots begin with long vowels. We cannot use /rV-/ in these contexts, with /r-/ being used instead.

(66) Examples of first person plural active /r-/

- a. *nuráahini* *Pq̥aq̥hij' Sh̥uts* óo
 r̥-rEh=r̥j p̥aq̥hij' #sh̥ut=s oo
 1A.PL-go.there=ss porcupine#tail=DEF DEM.MID
róorookti'sh
 r-o-o-rootki=o'sh
 1A.PL-PV.IRR-PV.LOC-hit=IND.M
 'we will go and camp there at Porcupine Tail' (Hollow 1973b: 254)
- b. *na'é* *nihúpe* *ráahuuro're*
 r̥-E r̥j-hup(E) r-aa-huu=o'sh
 mother.VOC=SV 2POSS-shoe 1A.PL-PV.TR-come.here=IND.M
 'mother, we brought your shoes' (Hollow 1973a: 147)
- c. *maná tereéekerek* *nurúskopini*
 wr̥q tree=krE=ak r̥q-ru-skop=r̥j
 tree be.big.around=3PL=DS 1A.PL-INS.HAND-be.bent=ss
réerehini *máanurutirishe* *mikáa*
 r-ee-reh=r̥j waa-r̥q-ru-trish=E w̥j̥k=E=∅
 1A.PL-PV-want=ss NOM-1A.PL-INS.HAND-shake=sv be.none=SV=CONT
 'the trees were big, so we wanted to bend them, but we could not budge them' (Hollow 1973a: 52)

This allomorph is not seen often in the corpus due to the fact that there is only one preverb that has an underlying long vowel, and there are no attested active-marking verbs that begin with long vowels. The nature of /rV-/ also can make it ambiguous whether there is an irrealis preverb plus a locative preverb with /r-/ or

4 Verbal morphology

a locative preverb with /rV-/, since they will be homophonous: e.g., *róorookti'sh* ‘we will camp there’ can likewise be ‘we camp there.’ The corpus includes glosses beneath each word, so we can glean the intent of the speaker who went through and explained what he or she had meant, but multiple interpretations are possible in the narratives that have yet to be glossed with a Mandan speaker, such as the Bowers (1971) recordings.

4.1.2.3.2 First person plural stative prefix: *ro-*

The prefix *ro-* is not common in the corpus, due to the fact that the corpus is mostly comprised of narratives where a single cultural figure is on a journey and interacts with maybe one other figure at a time. This is another example of morphology that is more common in conversational Mandan than the corpus would otherwise suggest. This particular formative does not have an obvious Proto-Siouan origin. Catawba has similar *nu-* and *do-* first person plural object markers, the latter bearing the strongest similarity to the Mandan *ro-* [ⁿdo] (Rankin et al. 2015). Given that Catawban and Mandan are both Peripheral Siouan languages under the proposal laid down in Kasak (2015), we can say that these similarities are either due to shared innovations in a common ancestor that had already split from Core Siouan, or that these languages share an archaism that has been lost in other daughter languages of Proto-Siouan, since other Siouan languages do not have dedicated morphology to active versus stative first person plural marking.

(67) Examples of first person plural stative *ro-*

- a. *wapt̥ehki* *rokíikirixaani* *rápena'ro'sh*
 wa-ptEh=ki ro-kiikrixE=rí ra-pera'=o'sh
 1A-run=COND 1S.PL-catch.up.to=ss 2A-be.slow=IND.M
 ‘if I run away, they will catch us since you are slow’ (Hollow 1973b: 163)
- b. *wá'a'oxikt* *nuréehki*, *rokirushaata*
 waa-o-xik=t rú-reeh=ki ro-k-ru-shE=ta
 NOM-PV.LOC-be.bad 1A.PL-go.there=COND 1S.PL-VERT-grasp=IND.M
 ‘if we go to a bad place, take us back’ (Hollow 1973b: 45)
- c. *óparashtaa* *íshqataa* *nákini*
 o-prash=taa i-shaq=taa rák=rí
 PV.LOC-be.pointed=LOC PV.DIR-across=LOC POS.SIT=ss
rokirúherektiki *nuréehka'sh*
ro-kru#hrE=kti=ki *rú-rEEh=ka=o'sh*
 1S.PL-VERT+SEQ#CAUS=POT=COND 1A.PL-go.there=HAB=IND.M
 ‘whenever he calls us across to the ridge there, we always go’ (Hollow

4.1 Prefix field

1973b: 151)

- d. *nu'q'taa* *waxópininite,* *éetaanik,*
 r_q-q'=taa wa-xopri=rjt=E ee-tE=rjk
 1A.PL-be.closer=LOC UNSP-be.holy=2PL=SV PV-say.2A=ITR
waróruute *rokú'ka'sh*
 wa-ro-ruutE ro-ku'=ka=o'sh
 UNSP-1s.PL-eat 1s.PL-give=HAB=IND.M
 'you always give something to eat to us holy spirits that you call' (Hollow 1973b: 176)
- e. *na'é* *réehrohereso'sh*
 r_q-E rEEh#ro-hrE=s=o'sh
 mother.voc=sv go.there#1s.PL-CAUS=DEF=IND.M
 'mother told us to go' (Hollow 1973a: 166)
- f. *karókahashka*
 ka-ro-ka-hash=ka
 AGT-1s.PL-INS.FRCE-slaughter=HAB
 'the one who slaughters us' (Hollow 1973a: 146)

This prefix is not described in Hollow's (1970) dictionary, but it is discussed in Kennard's (1936) grammar. Hollow explicitly defines *nu-* as the sole marker of first person plural, regardless of what role the first person plural argument is playing in the clause. However, in the narratives collected in Hollow (1973a,b), *ro-* does occur with 'us' appearing in the translation instead of 'we.'

4.1.2.3.2.1 Allomorph /rV-/

Much like *nu-*, *ro-* cannot appear before a vowel-initial stem. This prefix, too, has an allomorph where the underlying vowel harmonizes the following vowel to create a single long vowel: /rV-/. We can see examples involving this prefix below.

(68) Examples of first person plural stative allomorph /rV-/

- a. *éena* *róokaweho'sh,*
 ee=r_q rV-o-ka-weh=o'sh
 DEM.DIST=TOP 1s.PL-INS.FRCE-chose=IND.M
manáhítahimi'kshukeena
 wr_q=hj#ta-hi#wj'#kshuk=ee=r_q
 wood=with#AL-tooth#stone#be.narrow=DEM.DIST=TOP
 'then he chooses it for us, a stone-pointed lance' (Hollow 1973b: 151)

4 Verbal morphology

- b. *mí'ti* *kí'hini* *ríiruptaahini*
wí'#ti *ki'h=rj* *rV-i-ru-ptEh=rj*
 stone#reside arrive.back.here=ss 1s.PL-PV.INS-INS.HAND-run=ss
numá'kaaki *rokaraahini* *téeroharaani* *éerehini*
ruwá'k-aaki *ro-kraah=rj* *tee#ro-hrE=rj* *ee-reh=rj*
 man-COLL 1s.PL-be.afraid.of=ss die#1s.PL-CAUS=ss PV-want=ss
 'he got back to the village and blamed us, so the people were afraid of
 us and wanted to kill us and...' (Hollow 1973a: 186)
- c. *numá'kaaki* *áqwe* *rokaraahkaraani*
ruwá'k-aaki *aqwe* *ro-kraah=krE=rj*
 man-COLL all 1s.PL-be.afraid.of=3PL=ss
ríiruksahqmika *réehkere'sh*
rV-i-ru-ksah=awj=ka *rEEh=krE=o'sh*
 1s.PL-PV.INS-INS.HAND-go.away=CONT=HAB go.there=3PL=IND.M
 'all the people were afraid of us and went, leaving us behind' (Hollow
 1973a: 184)

The homophony between the first person plural active /rV-/ and the first person plural stative /rV-/ above can make it challenging to identify which argument /rV-/ represents in isolation. The context in which such words appear is crucial for informing a listener what the intended argument is that is being marked.

4.1.2.3.2.2 Allomorph /r-/

This allomorph of *ro-* is homophonous with the /rV-/ allomorph of *nu-*. This prefix is used before vowel-initial stems that begin with long vowels. If no other pronominal marking is present on the verb, /rV-/ can ambiguously indicate a first person plural active argument or a first person plural stative argument. We can see an example of this ambiguity in the examples below.

(69) Ambiguity with /rV-/ marking

- a. *ráaniraahinito'sh*
r-aa-rj-rEEh=rjt=o'sh
 1A.PL-PV.TR-2s-go.there=2PL=IND.M
 'we brought you there'
- b. *ráararaahinito'sh*
r-aa-ra-rEEh=rjt=o'sh
 1s.PL-PV.TR-2A-go.there=2PL=IND.M
 'you brought us there'

4.1 Prefix field

c. *ráaraahinito'sh*

r-aa-rEEh=rít=o'sh

1A.PL/1S.PL-PV.TR-go.there=2PL=IND.M

'he/she/it brought us there' or 'we brought him/her/it there'

The /r-/ alone does not tell us if it refers to an active or stative argument, but the presence of second person marking clarifies what role /r-/ plays. The verb marked with *ni*- in (69a) must have its /r-/ refer to an active argument, as *ni*- is stative, and vice versa for *ra*- and its /r-/ in (69b). If there were no second person argument involved in these sentences, then there would be no way to know whether /r-/ is referring to people doing an action or to whom the action is done, as we see in (69c). The intended reading would need some kind of context to remedy this ambiguity.

4.1.2.3.2.3 Allomorph /ru-/

This allomorph of *ro*- is used only with reflexives. The shape of this formative differs from the other reflexive allomorphs *mi*- and *ni*- in that *nu*- does not resemble stative marking, but active marking. There likely was paradigmatic instability at some point in pre-modern Mandan where there was a shift away from stative marking, and only the first person plural stative before a reflexive is identical with its active counterpart. It is unclear how this process worked in Proto-Siouan, given the fact that there is no default pattern that we observe across the language family, even within the same branch. In Mississippi Valley Siouan, Lakota marks reflexive subjects with stative pronominals (Ingham 2003: 23), while Ioway-Oto and Osage uses active pronominals for subject marking (Whitman 1947: 244, Quintero 2004: 244). The Ohio Valley Siouan language Tutelo uses dative prefixes with reflexives (Oliverio 1997: 77), while the Missouri Valley Siouan language Crow uses active prefixes to mark reflexive subjects (Graczyk 2007: 149). It is difficult to pinpoint what the original system of reflexive subject marking was in Proto-Siouan, and the mixed paradigm in Mandan suggests there this system may not have been particularly uniform across the language family. It is worth noting that the number of Siouan languages that use active marking for reflexive subjects is in the majority.

We can see the use of *nu*- as a first person plural stative marker below.

(70) First person plural stative marking with reflexives

4 Verbal morphology

- a. *nukirúskapo'sh*
ru-k-ru-skap=o'sh
1s.PL-RFLX-INS.HAND-pinch=IND.M
‘we pinch ourselves’ (Hollow 1970: 440)
- b. *nukihe'sh*
ru-ki-hE=o'sh
1s.PL-RFLX-see=IND.M
‘we see ourselves’ (Hollow 1970: 475)

As discussed in §4.1.1.3.3, reflexive marking on verbs with plural subjects can also give a reciprocal reading. Thus, both of the sentences above can be interpreted as ‘we pinch each other’ and ‘we see each other,’ respectively. Mandan has no devoted reciprocal marking morphology, so any reciprocal reading is typically left to context.

4.1.2.4 Unspecified argument prefix (Slot 9)

One of the more difficult inflectional prefixes to explain is the unspecified argument marker *wa-*. In much of the Siouanist literature, this prefix is referred to as the absolute marker. Calling this formative absolute does not mean that Siouanists believe that these languages have an ergative-absolutive alignment, though historically this was the case at one time. Siouanists that studied at the University of California, Berkeley under Terrence Kaufman had been introduced to ergative-absolutive languages through Kaufman’s work on Mayan languages. While Siouanists came to agree that active-stative was the more accurate description of the alignment system found across the language family, the term absolute remained in the literature for the sake of convention (Rankin p.c.).

In the work presented here, I employ the term the Mixco (1997a) uses in his Mandan grammar: unspecified argument. This term captures the actual function of this prefix in Mandan, which is to mark some indefinite non-subject argument. Some of the issues with identifying the unspecified argument marker in Mandan has been the inconsistency (e.g., Kennard 1936, Mixco 1997a, and Trechter 2012b) of long vowel marking, or even the disavowal of vowel length (e.g., Hollow 1970 and Coberly 1979).

Historically, this prefix originates as a merger between the *wi- and *wa- classifiers in Proto-Siouan, where *wi- marks animate non-human arguments and *wa- marks inanimate arguments. After *wi- merged with *wa-, *wa- became used to mark not only nominal stems, but verbal stems as well. This process seems to have taken place before late Proto-Siouan, as this behavior is observed

4.1 Prefix field

in every branch of the Siouan language family, where some reflex of *wa- has become part of the outer pronominal set (Rankin et al. 1998). The meaning of this element varies from language to language. Tutelo treats its *wa-* in a manner similar to that in Mandan (Oliverio 1997: 87). In Dakotan, *wa-* acts as an indefinite object (Ingham 2003: 16), but in Dhegihan and Hoocak-Chiwere, *wa-* is a third person plural object marker (Quintero 2004: 75, Helmbrecht & Lehmann 2008: 286). Crow and Hidatsa both have an indefinite object marker that doubles as a nominalizer (Boyle 2007: 242, Graczyk 2007: 195)

One bit of confusion found in previous grammars of Mandan is that this ⟨wa⟩ in others' transcriptions has two different phonetic realizations: [wa-] and [wa:-]. Furthermore, the [wa:-] really has multiple meanings, the most common of which is that it acts as a nominalizer. The different uses of these formatives is summarized below.

(71) Items conflated as 'absolutive' in Hollow (1970)

<i>wa-</i>	unspecified argument prefix	<i>waa</i> ₋₂	partitive marker
<i>waa</i> ₋₁	nominalizer	<i>waa</i> ₋₃	indefinite subject prefix

This conflation in previous scholars' work is due to the fact that *wa-* UNSP, *waa*-NOM, and *waa*-PART have similar semantics. Namely, these formatives all indicate some kind of indefinite characteristic. In particular, this confusion arises from the nominalizer *waa-* having subject semantics for the nominalized element (e.g., *wáashi* 'something that is good') versus an action undertaken by someone else (e.g., *wapáphii* 'baking powder bread,' which is literally 'push something flat'). Both *wáashi* and *wapáphii* are treated as nouns syntactically and can receive noun morphology. Thus, while both items are nominalized verbs, the process of how they they are formed differs: *waa-* nominalizes a verbal complex by taking the place of a subject, while *wa-* can be found on deverbals as a stand-in for an object.

4.1.2.4.1 Unspecified argument prefix: *wa-*

The unspecified argument marker is often found in the corpus when an agent does an action to 'something' or 'someone' without specifying what or whom that object is. It is also found with certain verbs that seem to always require an overt object. If no overt nominal object is present, then *wa-* substitutes for whatever it is that is serving as a direct or indirect object.

(72) Examples of unspecified argument *wa-* marking

4 *Verbal morphology*

- a. *wakósh* ówaku'ro'sh
wa-kosh o-wa-ku'=o'sh
UNSP-whistle PV.IRR-1A-give=IND.M
'I am going to whistle for someone' (Hollow 1970: 487)
- b. *máamananuunixinisto'sh*
waa-wa-ra-r̥uq=r̥ix=r̥it=kt=o'sh
NEG-UNSP-2A-abduct=NEG=2PL=POT=IND.M
'you shall not commit adultery' (Hollow 1970: 22)
- c. *Waxíhkina'*
wa-xik#kir̥a'
UNSP-be.bad#tell
'Bad News Clan' (Bowers 1950: 30)
- d. *wahúu íkiri*
wa-huu#i-kri
UNSP-bone#PV.INS-be.grease
'marrow' (Hollow 1970: 82)
- e. *tawákapxe*
ta-wa-kapxe
AL-UNSP-earn
'his wages' (Hollow 1970: 101)
- f. *waká're*
wa-ka'=E
UNSP-have=SV
'property' (Hollow 1970: 102)
- g. *wapápshiire*
wa-pa-pshii=E
UNSP-INS.PUSH-be.flat=SV
'baking soda bread' (Benson 1999: 14)
- h. *húq, minikína'nisto'sh, wawákanaaki,*
húq w-r̥i-kir̥a'=r̥it=kt=o'sh wa-wa-kr̥aq=ki
yes 1A-2s-tell=2PL=POT=IND.M **UNSP**-1A-sing=COND
manánapaanitki
wa-ra-rapE=r̥it=ki
UNSP-2A-dance=2PL=COND
'yes, I will tell it to you (pl.), when I sing and when you (pl.) dance'
(Hollow 1973b: 32)

4.1 Prefix field

- i. *káni* “*tashká waheréki* *wawáruuto’xara’shka*,”
 ka=r̥i tashka wa-hrE=ki wa-wa-ruut=o’xrE=a’shka
 PROS=ss how 1A-CAUS=COND UNSP-1A-eat=DUB=PSBL
éerehoomako’sh
 ee-reh=oowąk=o’sh
 PV-say=NARR=IND.M
 ‘and how might I be going to eat if I do that?’ (Hollow 1973b: 46)
- j. *máatah íwakahq* *kasíimi* *wa’érōomako’sh*
 wąatah i-waka-haq kasiimi wa’érōomako’sh
 river PV.POSS-edge=INS INCP-travel=CONT UNSP-hear=NARR=IND.M
 ‘Traveling along the river’s edge, he heard something’ (Hollow 1973a: 28)

The unspecified argument prefix appears frequently throughout the corpus and is one of the most common prefixal elements in Mandan. It is typically used on verbal elements, though it does show up on certain nominalized verbs. In these verbs, the *wa-* is a non-agent argument. No overt subject marking is present on these nominalizations, which contrasts with *waa-*, where *waa-* takes the place of a subject.

In a way, *wa-* is used employed to nominalize verbs in a similar manner to preverbs. Mandan has no dedicated third person marking in its prefix field, so a verb with a preverb along with the habitual aspect marker is often the form nominalized verbs take.

(73) Nominalizations using preverbs

- a. *íkakiishka*
 i-ka-kiish=ka
 PV.INS-INS.FRCE-brush.off=HAB
 ‘broom’ (lit. ‘what one sweeps it with’) (Hollow 1970: 112)
- b. *pá íwa’xu’ka*
 pa#i-wa’-xu’=ka
 head#PV.INS-INS.PRCE-plow=HAB
 ‘comb’ (lit. ‘what one plows rows on the head with’) (Hollow 1970: 142)
- c. *manásh írushtat*
 wrąsh#i-ru-shtat
 tobacco#PV.INS-INS.HAND-twist
 ‘cigarette’ (lit. ‘what one twists the tobacco by hand with’) (Hollow 1970: 238)

4 Verbal morphology

- d. *ítkek*
 i-tkE=k(a)
 PV.INS-scape=HAB
 'hide scraper' (lit. 'what one scrapes it with') (Hollow 1970: 253)

The examples above can either be treated as predicates or arguments, depending on the context. The behavior of *wa-*, along with the use of preverbs to create relative clauses that can be treated as nominal elements, receiving nominal morphology. The presence of *wa-* in many Mandan nouns underscores the highly verbal nature of the Mandan language, and that syntactic categories are not so cut and dried (see §4.1.2.4.1.2 to see grammaticalized unspecified argument markers on nouns or the use of the nominalizer *waa-* with verbs in §4.1.2.4.2).

4.1.2.4.1.1 Allomorph /w'-/

In situations where an unspecified argument marker is placed before a vowel-initial stem that is not a preverb, the allomorph /w'-/ is used instead.

(74) Examples of unspecified argument marker as /w'-/

- a. *wá'kupe*
 w'-aakup=E
 UNSP-cover.the.head=sv
 'cap, war bonnet' (Hollow 1970: 58)
- b. *ma'se*
 w'-qs=E
 UNSP-horn=sv
 'horn spoon' (Hollow 1970: 60)

The set above represents the sum total of cases where the unspecified argument marker is realized as /w'-/ instead of /wa-/ in the corpus. Before preverbs, *wa-* is exclusively used.

(75) *wa'iwaseko'sh*, **wi'waseko'sh*
 wa-i-wa-sek=o'sh
 UNSP-PV.INS-make=IND.M
 'I am working' (Hollow 1970: 203)

The extremely limited set of verbs beginning with a vowel that is not a preverb and can take unspecified argument marking means that this particular allomorph is exceedingly rare.

4.1 Prefix field

4.1.2.4.1.2 Allomorph /wə-/

In certain words, the unspecified argument prefix *wa-* has developed a nasal underlying vowel. We can look at older Mandan sources and see what once was [wa] is now [mā].

(76) Change from /wa-/ to /wə-/

- a. ‘white person’
 - i. *washí* ← /wa-shi/ ‘white person’ (lit. ‘someone who has everything good’ or ‘someone who is dressed well’) (Maximilian 1839: 246)
 - ii. *mashí* ← /wə-shi/ ‘white person’ (Hollow 1970: 276)
- b. ‘leather’
 - i. *wapáqpi* ← /wa-paapi/ ‘leather’ (lit. ‘something made thin’) (Maximilian 1839: 249)
 - ii. *wapáqpi* ← /wa-paapi/ ‘buckskin’ (Hollow 1970: 136)
 - iii. *mapáqpi* ← /wə-paapi/ ‘deer, buckskin’ (Benson p.c.)

The tendency to fortify sonorants to nasal stops when utterance initial has caused certain words beginning with sonorants to become reanalyzed as if the source of those nasal stops was from an underlying nasal vowel. We can see that in the early nineteenth century, the modern word for someone of European descent is *washí* [wa.ʃi], where the first vowel is definitely oral. All modern speakers use *mashí* [mā.ʃi]. Other words in Mandan have reanalyzed the unspecified argument prefix as having an underlying nasal vowel, such that there is a class of nouns where this nasalization has become lexicalized. Mr. Edwin Benson explained the origin of the term for ‘white person,’ and his interpretation matches up with Maximilian’s (1839). The data in (76) show that certain words have shifted universally towards taking /wə-/ as their unspecified argument prefix, but other words may take either /wa-/ or /wə-/, depending on the speaker.⁶

We can see other nouns in Mandan that share this use of /wə-/ for the unspecified argument prefix below.

⁶Mr. Benson (p.c.) reported that this term came about after seeing European-American cavalry in the 1800s in their blue uniforms. Several speakers of Mandan have provided an alternative explanation that the word for ‘white person’ comes from *mashí’na*, meaning ‘generous,’ which may be related to the /wa-shi/ ‘UNSP-be.good’ explanation found in Maximilian (1839) anyway. Similar terms with supposedly different etymologies for ‘white person’ found in Hidatsa (i.e., *mashii* /washii/) and Lakota/Dakota (i.e., *wašiču*) raise the question of where this word originates and whether this explanation in Mandan is the original or if this is a folk etymology.

4 Verbal morphology

- (77) Contemporary nouns with /wə-/ instead of /wa-/
- mapáakokohka* ← /wə-paa-ko~kok=ka/ ‘butterfly’ (Hollow 1970: 270)
 - mapihka* ← /wə-pih=ka/ ‘beetle, stink bug’ (Hollow 1970: 490)
 - maxáxaare* ← /wə-xa~xaa=E/ ‘mountain’ (Hollow 1970: 490)
 - maxópinixte* ← /wə-xopri#xtE/ ‘God’ (Hollow 1970: 490)
 - mapi'ksok* ← /wə-pi'ksok/ ‘wild strawberry, raspberry’ (Hollow 1970: 272)

None of the words in (77) above appear anywhere in the corpus with /wa-/, and will always involve /wə-/. There is no common element that connects these data, so we can say that this is an incomplete morphological change, and one that may not be entirely stable. It is likely the case that this element has become grammaticalized onto these stems, but since we do not see instances of /wə-/ interacting with other person-marking prefixes in the corpus, it is not possible to conclusively state that these forms are not complex: i.e., composed of multiple discrete morphological elements.

4.1.2.4.2 Nominalizer prefix: *waa*-₁

The nominalizer *waa-* is not inflectional morphology, but is included in this section to highlight its difference from the unspecified argument prefix. All past scholars have treated these two prefixes as being one and the same, but using instrumentation such as Praat (Boersma & Weenik 2020), we can see that there is a distinct length difference between these two formatives.

The semantics of the nominalizer is different from that of the unspecified argument marker in that, while both can be used to nominalize a verb, the nominalizer grants a subject-type reading to the verb it nominalizes. This is often rendered into English as ‘something/someone that X-es’, where the X stands for a verb. We can take the word *wáarokhuutop* ‘table’ as an example of this in action.

- (78) *wáarokhuutop*
 waa-rok#huu#top
 NOM-leg#bone#four
 ‘table’

The word ‘table’ begins with a nominalizer, and turns the entire determiner phrase into a single phonological word that means ‘something that has four leg-bones.’ We can add additional nominal morphology, such as determiners or quantifiers: e.g., *wáarokhuutop tóp* ‘four tables,’ or literally ‘four somethings that have

4.1 Prefix field

four leg bones.' Since Mandan does not easily accept loan words into its lexicon, novel items and concepts will require a novel word that describes what this new item or concept is. As such, the corpus is filled with tokens containing the nominalizer. We can see several examples of *waa-* used in this way below.

(79) Examples of nominalizer *waa-*

- a. *wáara'xuu*
waa-ra'-xuu
NOM-INS.HEAT-be.charred
'coffee (lit. 'something that is charred')' (Hollow 1970: 330)
- b. *wáaxte*
waa-xtE
NOM-be.big
'a lot ('something that is big')' (Hollow 1970: 328)
- c. *wáa'atxi'hs*
waa-at#xi'h=s
NOM-father#be.old=DEF
'the President (lit. 'someone who is the grandfather')' (Hollow 1970: 61)
- d. *wáa'iniire*
waa-irjj=E
NOM-grow=sv
'plant (lit. 'something that grows')' (Hollow 1970: 62)
- e. *wáa'opakirii*
waa-o-pa-krii
NOM-PV.LOC-INS.PUSH-line.up
'a number (lit. 'something that counts')' (Hollow 1970: 119)
- f. *wíikapus*
wV-i-ka-pus
NOM-PV.INS-INS.FRCE-be.marked
'pencil (lit. 'something that makes marks')' (Hollow 1970: 77)

In each of the examples above, the *waa-* acts as an indefinite, unspecified subject. Both active and stative verbs are able to be nominalized with *waa-*. The nominalizer also can optionally contract before a vowel-initial stem: e.g., *wáa'ikapus* and *wíikapus* both mean 'writing utensil.' This allomorph is completely optional, and speakers have been known to spontaneously switch from a contracted /wV-/ to a full /waa-/ or vice versa during data elicitation sessions.

4 Verbal morphology

4.1.2.4.3 Partitive prefix: *waa*-₂

An additional use of *waa*- is to give a partitive meaning to some object. This prefix often is accompanied by the word 'some' in the gloss.

(80) Partitive *waa*-

- a. *máamaku'nista* *wáawaruusto'sh!*
 waa-wä-ku'=rj̥t=ta waa-wa-ruut=kt=o'sh
 PRTV-1s-give=2PL=IMP.M PRTV-1A-eat=POT=IND.M
 'give me some, [because] I want to eat some!' (Hollow 1973a: 15)
- b. *nuharáa* *íxike* *máanuruha'ni*
 rü-hrE=Ø i-xik=E waa-rü-ha'=rj̥
 1A.PL-CAUS=CONT PV.INS-be.bad=SV PRTV-1A.PL-pick.berries=ss
nukirí'sh
 rü-kri=o'sh
 1A.PL-arrive.back.here=IND.M
 'we were doing it and we barely picked some and we came back' (Hollow 1973a: 52)
- c. *hiré rá'skamak* *wáawahé'sh*, *manápusheke*
 hire ra'ska#wäk waa-wa-hE=o'sh wrä#pushek=E
 now summer#POS.LIE PRTV-1A-see=IND.M tree#juneberry=sv
 'I saw some now this summer, juneberries that is' (Hollow 1973a: 52)
- d. *nitawiihqka* *máakahe wáa'o'kiharaa* *ká'haraani*
 rj̥-ta-wiihäka wäqakahe waa-o'ki-hrE ka'#hrE=rj̥
 2POSS-AL-grandchild those PRTV-cook#CAUS have#CAUS=ss
éexi *rúut íteekereká're*
 eexi ruut i-tee=krE=ka=o're
 paunch eat PV.INS-like=3PL=HAB=IND.F
 'those granddaughters of yours cooked some for her and want to eat
 paunch' (Hollow 1973a: 72)
- e. *máhe*, *wáa'aawakuhini*
 wäh=E waa-aa-wa-kuh=rj̥
 turnip=SV PRTV-PV.TR-1A-come.back.here=ss
ówakjhereki *nuriútinisto'sh*
 o-wa-kj#hrE=ki rü-ruut=rj̥t=kt=o'sh
 PV.LOC-1A-boil#CAUS=COND 1A.PL-eat=2PL=POT=IND.M
 'turnips, I will bring some back and we will eat them when I cook them'
 (Hollow 1973a: 75)

4.1 Prefix field

It is likely that this *waa-* originated as an enclitic quantifier with a structure in Pre-Mandan like *máhe waa-* ‘some turnips,’ but the /waa/ become reanalyzed as being an integral part of the verb. Park (2012: 480) describes a similar use of the the quantifier *nuwa*, which encliticized onto an overt nominal, but is also realized within the verbal complex when referencing a covert DP. Contemporary Mandan does not have an enclitic for the partitive; it will always be realized as part of the verb as a prefix. This prefix is mutually exclusive with the unspecified argument prefix, suggesting that they both compete for the same slot because they are both a kind of inflectional prefix that is agreeing with an indefinite or non-specific argument.

4.1.2.4.4 Indefinite subject *waa*-3

Another use for *waa-* that seems to have occurred more recently in Mandan than the other two *waa-* prefixes is to mark indefinite subjects. Words bearing this *waa-* are often glossed as ‘someone’ or ‘somebody’ doing an action. We can tell they they are bound elements rather than being independent DPs by observing that they take primary stress and that the following stem can take secondary stress. This behavior of stress assignment shows that this *waa-* is being treated as a prefix and not a free DP or proclitic, as clitics may not take primary stress in Mandan.

(81) Examples of the indefinite subject *waa-*

- a. *weréhe kasé'haraani* *wáahuuki*,
wreh=E ka-se'#hrE=rj waa-huu=ki
door=SV INS.FRCE-have.come.open#CAUS=SS someone-come.here=COND
káare rusé'na!
kaare ru-se'=raq
IMP.NEG INS.HAND-have.come.open=IMP.F
'lock the door and if someone comes, do not open it!' (Hollow 1973a: 137)
- b. *ishtúhere'eshkaki*, *wáahuuraa*
ishtúh#hrE-eshka=ki waa-huu=E=∅
night#CAUS-SMLT=COND someone-come.here=SV=CONT
éroomako'sh
E=oowák=o'sh
hear=NARR=IND.M
'when it was about evening time, he heard someone coming' (Hollow 1973b: 200)

4 Verbal morphology

- c. óo ó'haraani wáarataxaa
 oo o'#hrE=rj waa-ra-tax=E=Ø
 DEM.MID be#CAUS=SS someone-INS.MTH-make.loud.noise=SV=CONT
héroomako'sh
 hE=oowąk=o'sh
 see=NARR=IND.M
 'from there, he heard someone crying' (Hollow 1973b: 249)
- d. wáati ishíka'sh
 waa-ti ishi=ka=o'sh
 someone-arrive.here VIS=HAB=IND.M
 'someone must be coming here' (Hollow 1973a: 142)

This element seems to be able to be used as an unbound item that is usually combined with the topic marker. This element also has underlying form of /waa/, but it does not necessarily refer to a subject. Typically, if this formative is used as a subject, the verb is marked for as being singular. However, if there is a plural reading intended, the verb can take plural morphology, as we see in (82) below.

(82) Examples of nominal *waa*

- a. máana ípakixtiki
 waa=rq i-pa-kixti=ki
 someone=TOP PV.INS-INS.PUSH-approach=COND
íhehka'sh
 i-hek=ka=o'sh
 PV.INS-know=HAB=IND.M
 'if someone gets close, he always knows' (Hollow 1973b: 155)
- b. máana íúpani ropxékerekaroomako'sh
 waa=rq úupa=rj ropxE=krE=ka=oowąk=o'sh
 someone=TOP with=ss enter=3PL=HAB=IND.M
 'they usually go in with someone' (Hollow 1973b: 171)
- c. hiré'oshka, máana kisúkini
 hire-oshka waa=rq ki-suk=rj
 now-EMPH someone=TOP VERT-exit=ss
 'even now, someone goes back out and...' (Hollow 1973b: 207)
- d. máana ók'ú'kerekktiki,
 waa=rq o-k'-uh=krE=kti=ki
 someone=TOP PV.LOC-3POSS.PERS-wife=3PL=POT=COND

4.1 Prefix field

- warúkahsjhxtaka'ehero'sh*
 wa-rukah-sjh-xtE=ka'ehEE=o'sh
 UNSP-refuse-INTS-AUG=QUOT=IND.M
 'whenever someone would try to marry her, she always strongly refused, it is said' (Hollow 1973a: 101)
- e. *ptamíihe, máatki máataa*
 p-ta-wíjh=E wáqtki waa=taa
 1POSS-AL-male's.sister=sv tomorrow somewhere=LOC
wáa'owaraahinixo're
 waa-o-wa-rEEh=ríx=o're
 NEG-PV.IRR-1A-go.there=NEG=IND.F
 'my sister, I am not going anywhere tomorrow' (Hollow 1973a: 284)
- f. *íwaat óreeho'sh*
 i-waa=t o-rEEh=o'sh
 PV.DIR-somewhere=LOC PV.IRR-go.there=IND.M
 'he is going away' (Hollow 1970: 265)
- g. *wáa warúute tú éheeni ko'ó'kto'sh*
 waa wa-ruutE tu e-hee=rí ko-o'=kt=o'sh
 someone UNSP-eat be.some PV-say=ss REL-be=POT=IND.M
 'there may be someone who is hungry' (Trechter 2012b: 159)

We can see that *máana* 'someone' bears topic marking, and can be used in contexts other than subjects. Furthermore, *maa-* is able to be used to substitute for unknown places as well, as in *máataa* 'somewhere.' These 'someone' and 'somewhere' words tend to be the initial element of an intonational phrase, which triggers intonational phrase-initial fortition. Additional morphology added before the /w/, like in (82f), removes the conditions for intonational phrase-initial fortition, causing the /w/ to be realized as [w] instead of [m]. Furthermore, we see a few instances of /waa/ alone in the corpus, as demonstrated in (82g), where *wáa* appears without the topic marker. Thus, while *waa* often appears in the corpus with an initial [m], this [m] is completely due to this item being used as some kind of topic or emphasized element, which places it within its own intonational phrase.

(83) Prosodic structure of (82e)

U_{Tt}(_{1P}(*ptamíihe*,)_{1P}_{1P}(*máatki*)_{1P}_{1P}(*máataa wáa'owaraahinixo're*)_{1P})_{Utt}

This /waa/ generally combines with enclitics, showing that it is a lexical root, likely expressing an uncertain person or place. It is clearly nominal in nature, as

4 Verbal morphology

it is only seen with nominal markings: e.g., topic and locative enclitics. As such, these constructions appear to be vestigial indefinite or partitive pronouns, which have generally been reinterpreted as being either partitive or indefinite subject markers in contemporary Mandan.

4.1.2.4.5 Summary of *wa-* and *waa-* prefixes

This confusion between the unspecified argument prefix *wa-* and the various *waa-* formatives stems from their common trait of marking indefiniteness for a particular argument. The different phonetic shapes is one clue for which version of an indefinite that the speaker wishes to convey, but the fact that this distinction comes from vowel length and not any other cue has made it difficult for past researchers who are inconsistent about marking vowel length (e.g., [Kennard 1936](#) and [Trechter 2012b](#)) or impossible for those who do not recognize vowel length at all (e.g., [Hollow 1970](#) and [Coberly 1979](#)).

Other Siouan languages have a prefix that is cognate with the indefinite argument marker *wa-* in Mandan, with that same vowel length. We can thus suppose that there was some element **wa-* in Proto-Siouan. The presence of **waa-* has not been discussed in the literature as a separate piece of morphology in Proto-Siouan, however. According to ([Kasak 2015](#)), the closest relatives to Mandan are Hidatsa and Crow, which both have a productive cognates of Mandan *waa-*, with those cognates being /*waa-*/ in Hidatsa and /*maa-*/ in Crow. This element fulfills all the roles that both *wa-* and *waa-* play in Mandan, but there are fossilized remnants of **wa-* in certain lexical items, such as the Hidatsa word *madú* 'be some', which is a cognate of the Mandan *tú* 'be some.' The initial syllable in the Hidatsa word bears the short vowel of **wa-* instead of the contemporary /*waa-*/ prefix, indicating it was a morphologically complex construction in Proto-Missouri Valley Siouan (e.g., PSi **wa-tu* > PMsrV ***wa-tu* > Hid *madu*). We can surmise that **wa-* merged with **waa-* in Proto-Missouri Valley but remained distinct in Mandan.

Further evidence that Mandan did not innovate this **wa-* versus **waa-* distinction can be seen in the Ohio Valley language Tutelo, where [Oliverio \(1997\)](#) marks the absolute prefix as either *wa-* or *waa-* with a high level of inconsistency. One motivating factor for this length difference is that Tutelo also inherited this distinction between PSi **wa-* and **waa-*. Catawba as a proclitic *pa* that is used for indefinite plural objects that is a cognate with PSi **wa-*, though its status as a proclitic seems to be an atavism where this Proto-Siouan prefix has ceased being an integral part of the morphological word.

Mandan seems to be the only language that can allow a morphologically unbound item *wáa* to mean an indefinite subject. Generally speaking, this element

4.1 Prefix field

appears as an inflectional prefix on the verb in the same verbal slot as the unspecified argument marker. It seems that *wáa* is used as an independent word only as a last resort for when a situation where an indefinite subject is acting on an indefinite object like in (82g), where the unspecified argument marker *wa-* is marked on the verb, precluding any other indefinite marker from appearing. Thus, it is not possible for multiple instances of indefiniteness to be marked on a Mandan verb: i.e., the construction **wáawaruute tú* ‘there is someone who is hungry’ is illicit because *warúute* ‘be hungry’ already bears an unspecified argument marker. When such situations where multiple indefinite arguments arise, the indefinite object is marked on the verb and the indefinite subject manifests as an independent argument. Otherwise, all instances of *wa-* and *waa-* can only appear in the same slot within the prefix template.

4.1.2.5 Negative prefix (Slot 10)

The negative prefix *waa-* always co-occurs with a negative enclitic, such as *=nix* or *=xi*.⁷ This circumfix-like behavior is due to Mandan reanalyzing the indefinite argument *wáa* as being part of the verbal complex. It is likely that this morphologically unbound element gradually became grammaticalized into an inflectional prefix due to the frequency of this indefinite *wáa* occurring with negative constructions. Circumfixal or double-marking of negation is not typologically uncommon (Caffarel et al. 2004: 630), though Mandan is the only Siouan language besides Biloxi (cf. Einaudi 1976: 86) to mark negation twice within the verbal complex, as seen below.

(84) Examples of negative *waa-*

- a. *wáa'owaraahinixo'sh*
waa-o-wa-rEEh=rjx=o'sh
NEG-PV.IRR-1A-go.there=NEG=IND.M
‘I am not going to go’ (Hollow 1973a: 48)

⁷These two enclitics are not phonologically related in the synchrony, but are diachronically related. One negation marker in Proto-Siouan is *-ši, which can be realized as *-xi due to sound symbolism, a consonantal ablaut that changes the place of articulation of a fricative to indicate the level of intensity of a state or action (cf. §3.7). Another negation marker is PSi -rj. The /=xi/ in Mandan is an obvious reflex of the *x*-grade form of *-aši. The /=rjx/, however, is actually a combination of the two: PSi *-rj-axi, where the final vowel in *-axi is deleted and the initial vowel is deleted to avoid hiatus.

4 Verbal morphology

- b. *téehq* *wáaraki'hinixak* *tashkák*
 teehq waa-ra-ki'h=rjx=ak tashka=ak
 be.long.distance NEG-2A-arrive.back.there=NEG=DS how=DS
éewereho'sh
 ee-we-reh=o'sh
 PV-1A-think=IND.M
 'I wondered why you had not returned for so long' (Hollow 1973b: 318)
- c. *wáatishi'sh*, *kashká wáarakina'nixo'sh*
 waa-ti=ishi=o'sh kashka waa-ra-kirq'=rjx=o'sh
 someone-arrive.here=VIS=IND.M but NEG-2A-tell=NEG=IND.M
 'someone must have been here, but you are not telling' (Hollow 1973a: 162)
- d. *warúshaani* *máamahaaxik* *i'q'taa*
 wa-ru-shE=rj waa-wq-hE=xi=ak i-q'=taa
 1A-INS.HAND-take=ss NEG-1s-see=NEG=DS PV.DIR-be.closer=LOC
résh *ótaawaherektak*,
 resh o-taa#wa-hrE=kt=ak
 this.way PV.LOC-be.facing#1A-CAUS=POT=DS
xé'hqkseet *téeroomako're*
 xe'h#hák=s=ee=t tee=oowák=o're
 be.dripping#POS.STND=DEF=DEM.DIST=LOC die=NARR=IND.F
 'I took it and, while she was not looking at me, when I faced it this way
 toward her, she was dead in that basket' (Hollow 1973a: 92)
- e. *wáararaahinixki*, *óxiko'sh*
 waa-ra-rEEh=rjx=ki o-xik=o'sh
 NEG-2A-go. there=NEG=COND PV.IRR-be.bad=IND.M
 'if you do not go, it will be bad' (Hollow 1973a: 113)
- f. *q't* *minikíkqüteki* *wáa'oteeniharaaxi'sh*
 q't w-rj-kikqüteki waa-o-tee#rj-hrE=xi=o'sh
 DEM.ANAP 1A-2s-help=COND NEG-PV.IRR-die#2s-CAUS=NEG=IND.M
 'That one will not kill you if I help you' (Hollow 1973a: 113)
- g. *wáara'hashinixharaa*,
 waa-ra'-hash=rjx#hrE=Ø
 NEG-INS.HEAT-be.disintegrated=NEG#CAUS=CONT

4.1 Prefix field

For simplex verbs, like in (84a) through (84e), where the *waa-* is placed is unambiguous: i.e., at the leftmost edge of the word. When we look at serial verbs like causative constructions, however, we can see that the *waa-* will always prefix onto the left edge of the overall word, rather than the causative itself. We

4 Verbal morphology

can see this behavior in (84f) through (84h). Previous scholars vacillate between transcribing causative constructions as one or two words. The fact that the *waa*-becomes prefixed onto the left edge of the causativized verb is evidence that causative constructions are analyzed as a single morphological word. The negative enclitics *=nix* or *=xi*, however, can appear on either the causative or on the causativized verb. This variation in enclitic placement is caused by the semantic scope, and will be discussed further in §4.3

4.1.2.6 Relativized prefix (Slot 11)

The prefix *ko*- marks a relativized construction. This prefix comes from the Proto-Siouan word **ko*, a demonstrative. In other Siouan languages, like Crow or Biloxi, the reflexes of PSi **ko* are still unbound elements. Crow, in particular, is interesting because the reflexes of **ko* do not appear where other demonstratives would in a head-final, left-branching language (i.e., at the right edge of a determiner phrase), but are always DP-initial (Graczyk 2007). These reflexes of **ko* (i.e., *ko* and *kon*) do not bear a lexical pitch accent, so they appear to be first-position clitics rather than simple determiners in that they will always be in the first position within a DP shell. We can see the treatment of these unstressed first-position demonstratives below.

(85) Reflexes of PSi **ko* in Crow

[<i>ko</i> <i>bachéesh</i>] _{DP}	[<i>kon</i>] _{DP}	<i>díak</i>			
<i>ko</i> =	<i>machéé</i> =sh	<i>kon</i> =	<i>nía</i> =k		
DEM	man=DET	DEM	DEF	AGT	do=IND
'that man is the one who did it' (Graczyk 2007: 222)					

In a DP with an overt nominal like in [*ko* *bachéesh*]_{DP} 'that man,' the demonstrative appears at the leftmost edge of the DP shell. A demonstrative may also appear without an overt nominal, as *kon* does in the example above, but in cases such as these, the demonstratives rely on the following word to be prosodically realized, as we can tell by its lack of an underlying pitch accent. The fact that the reflex of PSi **ko* is DP-initial and prosodically deficient in Crow contrasts with *ko* in Biloxi, which is always the right-most element in a DP (Torres 2010).

(86) Reflexes of PSi **ko* in Biloxi

[<i>Opanaskéhona</i>	<i>ko</i>] _{DP}	<i>naxé'qókq</i>
<i>o#pa#naské#hona</i>	<i>ko</i>	<i>naxé=qó=kq</i>
fish#head#long#be.like	DEM	hear=PST=DS

4.1 Prefix field

<i>tandoyq</i>	<i>kidi</i>	<i>dqde</i>
<i>tando=yq</i>	<i>ki-di</i>	<i>däde</i>
female's.younger.brother=DET.DEF VERT-arrive.here IRR		
'That Very-Long-Headed-Fish heard that her brother would be coming back' (Torres 2010: 128)		

The behavior of *ko* in Biloxi is in line with the expected distribution of a demonstrative within a DP shell in a head-final, left-branching language (i.e., at the right edge of a DP). We can certainly see that the *ko* in both Crow and Biloxi have similar functions, but the stark difference lies in their distribution and prosodic behavior.

Under the assumption that Crow and Hidatsa are the closest relatives to Mandan, we can assume that their common ancestor language likewise had a constraint where this determiner was always DP-initial, and that this determiner in Mandan eventually became reanalyzed as an inflectional marker on the verb, rather than discrete lexical item. We can see examples of *ko*- in Mandan below.

The prefix *ko*- in Mandan is not commonly seen, as preverbs and unspecified argument markers have the ability to relativize a clause, with the locative *o*- in particular being commonly seen when describing places. Constructions with *ko*- typically make reference to an agentive argument, though this argument is not always animate.

(87) Examples of relativizer *ko*-

- a. *mí'ti* *kú'haa* *áani* *máapehekere*, *mí'ti*
wí'#ti *kku'=haa* *E=rí* *wáapehe=krE* *wí'#ti*
 stone#dwell be.entire=SIM hear=ss mourn=3PL stone#dwell
kotáakeres *qqwe*
ko-taa=krE=s *aqwe*
 REL-LOC=3PL=DEF all
 'the entire village heard it and they mourned, all the ones who lived in the village' (Hollow 1973b: 166)
- b. *hirée róo* *nútaa* *óxkqhe* *koráshitaa*,
 hiree roo rü-taa o-xkqh=E ko-rashi=taa
 now DEM.MID 1A.PL-LOC PV.IRR-move=SV REL-behind=LOC
kúhkeres, *ríikihekto'sh*
 kuh=krE=s rV-i-kihE=kt=o'sh
 come.back.here=3PL=DEF 1A.PL-PV.INS-wait=POT=IND.M
 'We are here now, [so] we will wait for the travelers who are behind, the ones coming back' (Hollow 1973b: 194)

4 Verbal morphology

- c. *miníike, koxáwaawaheres, hirée kiri'sh*
 wị-rijk=E, ko-xwaa#wa-hrE=s hiree kri=o'sh
 1POSS-son=SV REL-be.lost#1A-CAUS=DEF now arrive.back.here=IND.M
 'my son, the one I lost, is now back' (Hollow 1973b: 229)
- d. *kixéektek, mí'ti kotkás qqwe'na pó*
 ki-xee=ktek wị'#ti ko-tka=s qawé=rəq po
 MID=be.slow=POT+DS stone#dwell REL-reside=DEF all=TOP fish
xtes wakirúutoomako'sh
 xtE=s wa-k-ruut=oowąk=o'sh
 be.big=DEF UNSP-INCH-eat=NARR=IND.M
 'when he stopped, the big fish ate all the ones who lived in the village'
 (Hollow 1973b: 201)
- e. *háp téehq nutékto'sh, háki*
 hap(E) teehq rụ-te=kt=o'sh ha=ki
 day be.long.distance 1A.PL-stand=POT=IND.M PRO.V=COND
kopáto'na nuhékereki
 ko-pat=o'=rəq rụ-hE=krE=ki
 REL-show.up=be=TOP 1A.PL-see=3PL=COND
 'we will be there for a long time, so let the ones to come see us' (Hollow 1973b: 206)
- f. *karóotiki komáa'qktaa hágkeseena*
 ka-ootiki ko-wąq'ąk=taa hąąkE=s=ee=rəq
 PROV=EVID=COND REL-earth=LOC be.standing.AUX=DEF=DEM.DIST=TOP
íuke írusheroomako'sh
 uk=E i-ru-shE=oowąk=o'sh
 hand=SV PV.INS-INS.HAND-hold=NARR=IND.M
 'and then he got hold of the one on the ground's hand' (Hollow 1973b: 273)
- g. *kotámihs*
 ko-ta-wijh=s
 3POSS.PERS-AL-woman=DEF
kíihkarahseena "hiré ptamíihe,
 kV-i-k-krah=s=ee=rəq hire pta-wijh=E
 REL-PV.INS-MID-be.afraid=DEF=DEM.DIST=TOP now 1POSS.AL-woman=SV
wasíi warého'xere're, káni téehqki
 wa-sii wa-reh=o'xre=o're ka=rj teehq=ki
 UNSP-travel 1A-think=DUB=IND.F PROV=ss be.long.distnce=COND

4.1 Prefix field

ówakiri'eshka're,"	éeheka'ehe	
o-wa-kri-eshka=o're	ee-he=ka'ehe	
PV.IRR-1A-arrive.back.here-SMLT=IND.F	PV-say=QUOT	
'He told the sister he was afraid of "now, my sister, I am thinking of traveling and I will come back after a long time" (Hollow 1973b: 281)		
h. mā'a'qk iwxarats	ko'íyute	hík
waq'ak i-wa-xrat=s	ko-üyü=E	hi=ak
land PV.INS-UNSP-hold.up=DEF	REL-be.first=sv	arrive.there=DS
rokáqkaxihs	máa'üst séharaani	réehoote,
rokäqka#xih=s	waa-üst se#hrE=rí	rEEh=ootE
old.woman#old=DEF	NOM-old	be.red#CAUS=ss
se'esh	náhka'eheroo	go.there=EVID
se-esh	rak=ka'ehe=oo	
be.red-APRX	POS.SIT=QUOT=DEM.MID	

'the old lady, the one who got to the land that holds it up first, made it red and went now that she made it all red, it is said' (Hollow 1973a: 123)

There is an optional allophone /kV-/ before vowel-initial stems containing preverbs, as seen in (87g). However, the most common realization is as *ko-*, even before vowel-initial stems, which we see in (87h). The /kV-/ variant is more common in fast speech. The relativizer *ko-* is most commonly employed when referring to animate subjects, but inanimate subjects are also possible.

(88) Inanimate referents for *ko-*

- a. ímashut ko'áaki
i-washut ko-aaki
PV.INS-clothe REL-be.above
'overcoat [lit. 'clothing that is on top']'
- b. maná weréxe ko'üst, kotké, kokámix, koxtés
wrä wrex=E ko-üst ko-tkE ko-kawjx ko-xtE=s
wood kettle=sv REL-be.old REL-be.heavy REL-be.round REL-be.big=DEF
kixüyh
kixüyh
five
'five big, round, heavy, old drums' (Mixco 1997a: 21)

The majority of instances where *ko-* appears in the corpus involve an active verb. All of the verbs in (88) above, in contrast, are stative. The use of *ko-* is

4 Verbal morphology

in these instances is less frequent when used adjectivally in casual speech. It is very common to omit *ko-* in casual speech involving stative verbs functioning as adjectives, with speakers producing one token with *ko-* and then immediately repeating themselves and dropping the *ko-* with no effect on its intended reading.⁸ However, the use of *ko-* in some cases can mark the difference between a lexicalized noun-verb combination and a noun and a stative verb used adjectivally.

(89) Adjectival use of stative verbs with and without *ko-*

- a. *máareksuk tóh* or *máareksuktoh*
wáareksuk#tōh
bird#be.blue/green
'bluejay'
- b. *máareksuk tóh*
wáareksuk toh
bird be.blue/green
'blue bird'
- c. *máareksuk kotóh*
wáareksuk ko-toh
bird ko-be.blue/green
'blue bird, a bird that is blue'

Orthographically, there is no distinction between *máareksuk tóh* for 'blue jay' or 'blue bird,' but prosodically, 'blue bird' has a primary stress on both words, while there is a single primary stress in 'blue jay,' indicating that it is a single compound word rather than a DP with a stative verb adjunct. Either *máareksuk tóh* or *máareksuk kotóh* can be used to refer to a blue bird. Like Crow, the presence of the *ko-* differs from other relativized constructions in that it acts to accentuate

⁸During my own fieldwork in Hidatsa, I discovered that *agu-*, the relativizer in that language that is a cognate, has an identical distribution as Mandan *ko-*. All Hidatsa speakers I worked with would use the *agu-* when using a stative verb adjectivally in one sentence, and then when asked to repeat it, the *agu-* would often be dropped. However, when asked which way was the way they intended, consultants consistently said that the *agu-* was mandatory. Mandan speakers have said the same thing about the presence of *ko-*. Given the fact that the Mandan and Hidatsa peoples have been living in close proximity for so many centuries and that virtually all speakers of Mandan over the past hundred years have also been speakers of Hidatsa, it is unclear if this is a borrowing from Hidatsa into Mandan or if both languages inherited a similar propensity for treating relativized stative verbs from a common ancestor. Investigating the behavior of relativized stative verbs in Crow may offer some insight into this matter, as the split between the Hidatsa and Crow happened before the reservation period for the Mandan and Hidatsa.

4.1 Prefix field

the predicate being relativized: *máareksuk tóh* ‘blue bird’ versus *máareksuk kotóh* ‘a bird that is blue.’

One additional use of the relativizer is in constructions involving comparisons. The *ko-* can be found on both comparatives and superlatives.

(90) Examples of comparative and superlative *ko-*

- a. *Minís koshikeres* ó'haraani xkáherekereroomako'sh
wrjs ko-shi=krE=s o'#hrE=rj xkáh#hrE=krE=oowąk=o'sh
horse REL-be.good=3PL=DEF be#CAUS=SS move#CAUS=3PL=NARR=IND.M
'they chased the better horses from there' (Hollow 1973b: 84)
- b. *taminís* *koshí* *térootiki*, *wapáweshini*
ta-wrjs ko-shi te=ooti=ki wa-pa-wesh=rj
3POSS.AL=horse REL-be.good stand=EVID=COND 1A-INS.PUSH-cut=ss
warúshaani *wahúukto'sh*
wa-ru-shE=rj wa-huu=kt=o'sh
1A-INS.HAND-hold=ss 1A-come.here=POT=IND.M
'when his best horse is there, I will cut it loose and come take it' (Hollow 1973b: 259)

Mixco (1997a: 22) notes that comparatives can also be peripherastically constructed when two nominals are being compared, with the first clause stating a quality and the second clause stating that this quality exceeds that of the second nominal.

(91) Periphrastic comparatives

- a. *q'te, imáare háska'sh; makáhú'ho'sh*
q't=E iwąq=E háska=o'sh wą-kahú'h=o'sh
DEM.ANAP=SV body=SV be.long=IND.M 1s-exceed=IND.M
'he is taller than me [lit. his body is long; he exceeds me]' (Mixco 1997a: 22)
- b. *q'te, imáare koháska'sh*
q't=E iwąq=E ko-háska=o'sh
DEM.ANAP=SV body=SV REL-be.long=IND.M
'he is the tallest [lit. his body is the one that is long]' (Mixco 1997a: 22)

The use of the relativizer to form comparatives is more common than the periphrastic construction seen in (91a). No instances of this periphrastic construction appear in the corpus, and have only been documented in conversations with native speakers while eliciting comparatives.

4 Verbal morphology

4.2 Suffix field

The suffix field in Mandan is extremely limited when compared to the prefix field. Many Siouan grammars alternate between describing post-verbal morphology as enclitics or suffixes, even when describing the same language. In Mandan, most post-verbal elements have traditionally been described as suffixes by Hollow (1970) and Mixco (1997a). In Lakota, by contrast, Ingham (2003) and Mirzayan (2010) describe most post-verbal elements as enclitics. Many of these morphological items are cognates between these two languages, so the question arises as to whether Mandan truly has a large suffix field, or if the suffix field is more limited and there exists an enclitic field as well.⁹

I have glossed the data throughout this work as if most post-verbal elements are enclitics. The determining factor in deciding if an item is a suffix or an enclitic is whether hiatus between a verbal root and a post-verbal element is resolved with a glottal stop or a flap. We have previously seen the different behavior of word-internal hiatus resolution versus word-enclitic hiatus resolution in §3.6.1. A glottal stop occurs to prevent hiatus when prefixes or suffixes are added to a stem, as we saw in 3.6.1.1.

(92) Hiatus between roots and affixes

- a. *ki'úupa*
ki-úupa
SUUS-with
'[something of her own] with her' (Hollow 1973a: 219)
- b. *íki'aakit*
i-ki-aaki=t
PV.DIR-VERT-be.above=LOC
'back upward' (Hollow 1973a: 153)
- c. *ótu'eshkat*
o-tu-eshka=t
PV.IRR-be.some-SMLT=LOC
'where there would be some like that' (Hollow 1973a: 122)
- d. *róo'oshka*
roo-oshka
DEM.MID-EMPH

⁹I elaborate more upon why I classify most postverbal elements in Mandan as enclitics in Kasak (2019). For the purposes of this book, I shall maintain that assumption without further comment so as to not obfuscate the descriptive narrative of this grammar with morphological theory.

4.2 Suffix field

‘right here’ (Hollow 1973a: 183)

In each of the examples above, a glottal stop appears at the juncture of a root and an affix. We can contrast this treatment of word-internal hiatus with hiatus found at the juncture of a word and an enclitic.

(93) Hiatus between a root and an enclitic

- a. *tíroote'sh*
ti=ootE=o'sh
arrive.here=EVID=IND.M
‘she must have arrived here’ (Hollow 1973a: 127)
- b. *nátka* *xikxtéroomako'sh*
rat=ka xik-xtE=oowák=o'sh
be.in.middle=HAB be.bad-AUG=NARR=IND.M
‘she felt really sorry for him’ (Hollow 1973a: 129)
- c. *warápiniira't*
wa-ra-prii=q'a't
UNSP-2A-wear.around.neck=DEM.ANAP
‘that necklace of yours’ (Hollow 1973a: 58)

There are two different tactics for dealing with hiatus involving enclitics. If an enclitic beginning with a short vowel comes into contact with a stem ending in a short vowel, the enclitic elides that short vowel. However, if hiatus takes place and involves a long vowel, a [r] is inserted to break up the two vowels and nothing is elided. We see this pattern clearly in (93) above (see §3.6.1 for more explicit argumentation for using phonological processes to identify morphological boundaries).

By looking at this criterion, we can assume that those post-verbal elements are not true suffixes, but are phrasal morphology (i.e., enclitics). An additional piece of evidence that these are true suffixes and not enclitics is the fact that they are wholly derivational in nature, versus enclitics which are generally inflectional in nature. Furthermore, the suffixes that appear in Mandan are templatic in nature in that they always appear in a proscribed order with respect to one another. The enclitics, on the other hand, have some degree of freedom in their ordering that depend on the intended semantic reading. With these assumptions in mind, the following suffixes exist in Mandan.

(94) List of suffixes

4 Verbal morphology

-esh	similitive 1 (SMLT)	(see §4.2.3)
-eshka	similitive 2 (SMLT)	(see §4.2.3.2)
-sijh	intensifier (INTS)	(see §4.2.2)
-xte	augmentative (AUG)	(see §4.2.1)

This list of suffixes is massively reduced compared to the one given in [Mixco \(1997a: 15\)](#). [Mixco](#)'s proposed suffix order appears below.

Table 4.5: Suffix field in Mandan per [Mixco \(1997a\)](#)

0	1	2	3	4	5	6	7	8	9	10	11	12
ROOT	SV	NEG	SMLT	ATT	EVID	ASP	PL	ASP	EMPH	ASP	ASP	CONJ
												FRCE
												MOD
												PST
												QUOT

The ordering in Figure 4.5 is proffered as a comprehensive ordering of suffixes in Mandan, but throughout [Mixco](#)'s (1997a) grammar, these items do not always appear in their designated suffix slot. Furthermore, there is a large number of post-verbal elements not accounted for in Figure 4.5.

Under the definition of what is a suffix versus what is an enclitic in [Kasak \(2019\)](#), the number of true suffixes in Mandan is quite low, as seen in (94). All suffixes are derivational in nature. Examples of all five suffixes appear in the subsections below.

4.2.1 Augmentative suffix: *-xte*

The augmentative suffix *-xte* is descended from the Proto-Siouan augmentative **-xtE~*-xti*, which has numerous cognates throughout the language family. This augmentative suffix also exists in Mandan as a stative verb *xté* 'be big.' It is not clear whether Proto-Siouan also had an independent verb that became grammaticalized as an augmentative suffix or if Mandan innovated a separate verb from the augmentative by analyzing instances of it as serial verb constructions, and as such, we cannot concretely say if this dual purpose for /xtE/ in Mandan is an innovation or an archaism. However, one piece of evidence that Mandan did not innovate this dual usage can be seen in Missouri Valley Siouan.

The Hidatsa word for 'big' is *ihdía*. Phonetic analysis shows that the ⟨h⟩ is really a lowered [χ] due to the surrounding high vowels drawing the body of

4.2 Suffix field

the tongue forward, making this word cognate with Mandan *xté*.¹⁰ There is no record of this verb also being used as an augmentative in modern Hidatsa, but Crow does have an augmentative suffix *-shta* that is cognate with Mandan *-xte*. I have argued that Crow and Hidatsa are the closest relatives of Mandan, so it suggests that the dual use of PSi *-xtE as an augmentative and a lexical verb stems from their common ancestor (Kasak 2015). We can see this behavior of *-xte* below.

(95) Examples of augmentative *-xte*

- a. *wóoruut shixté'sh, q't,*
 waa-o-ruut shi-xtE=o'sh q't
 NOM-PV.IRR-eat be.good-**AUG**=IND.M DEM.ANAP
manápushekq't
 wrq#pushek=q't
 tree#juneberry=DEM.ANAP
- ‘Those are good eating, them, those juneberries’ (Hollow 1973a: 53)
- b. *ishák kohúxihó'na, kékani*
 ishak ko-hq#xih=o'=raq ke'#ka'=rqi
 3PRO 3POSS.AL.PERS-mother#be.old=be=TOP keep#have=ss
kikiirasxtešh, Numá'kshikaraha
 ki-kiiras-xtE=o'sh ruwq'k#shi#krah=ha
 MID-be.stingy.with-**AUG**=IND.M man#be.good#be.afraid.of=SIM
 ‘Them, those grandmothers of his, they kept him and sure did love
 Afraid-to-be-Chief’ (Hollow 1973a: 64)
- c. *níikasiiseena kóos*
 rijka#sii=s=ee=raq koo=s
 offspring#be.yellow=DEF=DEM.DIST=TOP squash=DEF
íteexteka'heero'sh
 i-tee-xtE=ka'heee=o'sh
 PV.INS-like-**AUG**=QUOT=IND.M
 ‘that young calf there really liked the squash, it is said’ (Hollow 1973a: 112)
- d. “*náxihe, nuwáruutextaani*
 rq#xih=E ruq-waruutE-xtE=rqi
 mother.voc#be.old=sv 1A.PL-be.hungry.1A.PL-**AUG**=ss

¹⁰We can make this judgment by observing that the formants have more energy in the higher bands rather than the diffused energy we see with [h] (Torres p.c.). This behavior means that the word is really [i.χtiq].

4 Verbal morphology

<i>nuhúuro'sh</i> ,	<i>éeheroomako'sh</i>
<i>r̥-huu=o'sh</i>	<i>ee-he=oowąk=o'sh</i>
1A.PL-come.here=IND.M	PV-say=NARR=IND.M
He said, “grandmother, we came really hungry” (Hollow 1973a: 266)	

As we can see in the data above, the underlying form of *-xte* is identical to the lexical verb ‘be big’ /xE/, given the fact that enclitics that normally trigger ablaut do so. The augmentative is the only suffix that can be ablauted.

4.2.2 Intensifier suffix: *-s̥ih*

The intensifier *-s̥ih* can appear on either verbal or nominal elements. There is also a lexical verb *s̥ih* ‘be strong,’ which takes active pronominals despite having semantics that are more in line with stative verbs: e.g., *was̥iho'sh* ‘I am strong.’ The use of active pronominals may stem from the fact that there has been a semantic shift in the meaning of this verb in Mandan, given that its cognates in Omaha-Ponca and Osage are *uá"si* and *áowisi*, respectively, which both mean ‘jump.’ If the Omaha-Ponca and Osage cognates are closer to the Proto-Siouan use of this term, then it would make more sense why this verb takes active pronominals, as jumping can be something that involves agency. In addition to this suffixal and free contrast for *s̥ih* and *-s̥ih*, there is also a clause-final enclitic *=s̥ih* that can co-occur with the narrative evidential *=oomak*, which will be discussed further in §4.3. We can see instances of this suffix below.

(96) Examples of the intensifier suffix *-s̥ih*

- a. *wáaka's̥iho'sh*
waa-ka'-*s̥ih*=o'sh
something-have-INTS=IND.M
‘he begs for something’ (Hollow 1970: 210)
- b. *shehéks̥ih*
shehek-*s̥ih*
coyote-INTS
‘a liar’ (Hollow 1970: 210)
- c. *wáashereek xtena* *áakit* *es̥ihoomako'sh*
waa-shreek xtE=r̥a aaki=t e-*s̥ih*=oowąk=o'sh
NOM-noise be.big=TOP be.above=LOC hear-INTS=NARR=IND.M
‘he really heard a big noise above him’ (Hollow 1973b: 281)

4.2 Suffix field

- d. *máana* *ókų'hkerektiki*,
 waa=rą o-k'-ųh=krE=kti=ki
 someone=TOP PV.LOC-3POSS.PERS-wife=3PL=POT=COND
 waríkahsijhxteka'heero'sh
 wa-rukah-sjh-xtE=ka'ehEE=o'sh
 UNSP-refuse-INTS-AUG=QUOT=IND.M
 'whenever someone would try to marry her, she always strongly re-fused, it is said' (Hollow 1973a: 101)

The intensifier is able to co-occur with the augmentative for further emphasis. While the intensifier is much rarer in the corpus when compared to the augmentative, both are productive in modern Mandan. When both suffixes do co-occur, the intensifier will always precede the augmentative. This suffix is homophonous with the intensive indicative complementizer =*sjh*, which is discussed later on in §4.3.5.11.

4.2.3 Similitive suffixes: *-esh* and *-eshka*

There are two similitive suffixes in Mandan: *-esh* and *-eshka*. Both appear to be related to the Proto-Siouan similitives *-se and *-ska. Given the fact that there are two similitives in Mandan, it is possible that the Proto-Siouan *-ska is actually decomposable into *-s-ka, where *-ka is a determiner or a distal locative. The *-s looks to be a determiner that is cognate with the indicative enclitic =c in Hidatsa, and the male addressee indicative enclitic =o'sh in Mandan.¹¹

4.2.3.1 Similitive 1: *-esh*

In order to grant a similitive reading to a word, the suffix *-esh* can be added to a root. The roots that take this suffix are mostly stative verbs or nouns being used as stative verbs.

(97) Examples of the similitive suffix *-esh*

¹¹Both Mandan and Hidatsa appropriated the PSi *-s element as a declarative marker, but Pre-Modern Mandan appears to have undergone a stage where non-imperative clauses required the copula ó' 'be' along with certain determiners, demonstratives, or locatives that became re-analyzed as illocutionary force markers and allocutive morphology. In modern Mandan, these historically distinct pieces of morphology are no longer individually discrete, but form whole morphological items: e.g., =o'sh marking male-addressee indicative utterances or o're marking female-addressee indicative utterances. We can also see hints of this *-s on certain adverbial morphology like *résh* 'this way, like this' (PSi *re 'this' + *-s) or *ú'sh* 'thus, like that, so' (PSi *?ųų 'be.PL + *-s).

4 Verbal morphology

This particular monosyllabic realization of the similitive is very rare when compared to *-eshka*. The presence of the habitual *-ka* suggests that there may be a slight semantic difference between these two kinds of similitative suffixes, but that difference may have been historical, as *-eshka* is the predominant similitive marker.

4.2.3.2 Similitive 2: *-eshka*

The overwhelming majority of cases where the similitive appears in Mandan involves the suffix *-eshka*. Words bearing this suffix can have a meaning of 'X-like,' where X is the stative verb or noun in question

- (98) Examples of the similitive suffix *-eshka*

 - a. *ráahqmi* *iku'eshka* *réehak...*
 rEEh=aw̃i i-ku'-eshka rEEh=ak
 go.there=CONT DIR-be.further.away=SMLT go.there=DS
 'Going there, when he had gone a little ways...' (Hollow 1973b: 68)
 - b. *ihekeshkakerek*
 i-hek-eshka=krE=ak
 PV.INS-know-SMLT=DS
 'they kind of knew it' (Hollow 1973a: 152)
 - c. *rúute* *náteshka* *rusháani...*
 ruut=E rąt-eshka ru-shE=r̃i
 rib=sv be.in.middle-SMLT INS.HAND-grasp=ss
 'he took her ribs on both sides...' (Hollow 1973a: 176)

4.2.4 Summary of suffixes in Mandan

Contrary to what has been proposed in previous analyses in Mandan, very little of the post-verbal morphological material can actually be classified as true

4.3 Enclitic field

suffixes. Most of the formatives following a stem are really enclitics. In §3.6 in the previous chapter, I have argued that morpho-phonological processes like epenthesis are sensitive to whether there is a word-boundary or not at the locus of hiatus. Namely, [?] is used to prevent hiatus at affix boundaries (i.e., word-internal boundaries caused by affixation), while [r] resolves hiatus between a stem and a morphological item outside the scope of a word boundary (i.e., word-external boundaries caused by encliticization). Suffixes in Mandan will always incur [?]-epenthesis to resolve hiatus. Any formative that does not trigger [?]-epenthesis, therefore, must not be a suffix.

4.3 Enclitic field

The purpose of this section is to describe the enclitic morphology present in Mandan, and then discuss the ways in which it differs from true affixation. Namely, enclitics may appear in different orders with respect to stem in order to reflect a difference in underlying semantic scope. My criteria for judging whether an item is morphologically part of the word (i.e., is an affix) or not (i.e., is an enclitic) are based on phonological tests laid out in §3.6.1 and §3.6.4.2. Namely, we can tell whether a morphological item is an affix or a clitic by what kind of hiatus repair mechanism it avails itself of (i.e., [?]-epenthesis for affixes and [r]-epenthesis for clitics), as well as blocking conditions for primary stress (i.e., suffixes can take primary stress because they appear within the domain of the word, while enclitics cannot take primary stress, because footing cannot cross a phrasal boundary). Thus, when we see primary stress after a verb root, we can tell that that element is a suffix, but when a well-formed iambic foot does not occur in favor of a deficient iamb, we can tell that footing did not occur due to it being blocked by a phrasal boundary.

In the section above, I outline the few instances of genuine suffixation that exist in Mandan. These suffixes appear frequently throughout the corpus, but are still relatively infrequent when compared to the other post-verbal material that has been surveyed. The question of what the difference is between these formatives and true suffixes revolves around that kinds of morpho-phonological behaviors we observe. It is robustly the case that Mandan prefers left-aligned weight-sensitive iambs for primary stress placement and likewise that Mandan does not permit two vowels in adjacent syllables to come into contact. A large number of words appear to flout these two major characteristics of Mandan morpho-phonology.

(99) Examples of unexpected non-iambic primary stress

4 Verbal morphology

- a. *múp* \sim *múpe* *mupé
 wúp wúp=E
 corn.mush corn.mush=sv
 'corn mush' (Hollow 1970: 274)
- b. *ínaare* *ináare
 i-ráq=E
 PV.INS-rattle=sv
 'a rattle' (Hollow 1970: 93)

My argument in §3.6.4 about why stress assignment in Mandan is not as irregular as it might seem at first glance stems from the fact that we can analyze cases like that as being composed of non-simplex words. That is to say, these words are composites in the sense of Anderson (1992: 310), where a single morphological word contains internal word boundaries. Primary stress assignment is unable to cross a word boundary, which explains why neither of the words above demonstrate second-syllable stress, even though a language with left-aligned iambic footing should be preferred as such. The words above really have the following underlying structures:

(100) Underlying structures for (99)

- a. $[múp] \sim [múp]=e$, but $^*[mup]=é$
- b. $[i[naa]]=re$, but $^*[i[náa]]=re$

The stress in (100a) cannot fall on the final syllable because that would cause footing across a right word boundary onto an enclitic. Similarly, the primary stress in (100b) is trapped on an ill-formed iamb because footing cannot cross a left word boundary. Thus, whether it is a word-internal word boundary due to a word being a composite or a word-external word boundary due to the presence of enclitic materials, a word boundary will always act as an impediment for foot formation.

The list of enclitics found here comes from those formatives in the corpus that do not meet the conditions for suffixhood. That is, these morphological items either resist primary stress assignment when in second-syllable positions or trigger [r]-epenthesis to repair hiatus (cf. §3.6.1). These enclitics fall into six different categories: aspectuals, evidentials, number markers, negation, modals, and complementizers.

4.3 Enclitic field

4.3.1 Aspectual enclitics

Siouan languages are typically described as not marking tense on verbs, as we can see in languages like Lakota (Ullrich & Black Bear 2016: 27) or Crow (Graczyk 2007: 7). The timeframe in discussion is usually left up to the context, expressed periphrastically through auxiliaries, or clarified through the use of temporal adverbials or other deictic elements (Rankin 1977).

Previous scholars, however, have described Mandan as a language featuring tense morphology (Kennard 1936, Hollow 1970, Mixco 1997a). Three endings that are often described as marking tense are =s, which is generally called a preterite or past tense marker; =oomak, which is traditionally referred to as a narrative past marker; and =kt, which previous works often describe as a future tense or potential marker. Hollow (1970: 454) even notes that these three formatives are in complementary distribution. Hollow (1970) also describes the preverb *o*- as a future tense prefix, bringing the number of formatives that he ascribes as encoding tense features to four. If we follow Hollow's (1970) analysis, these four tenses consist of two different past tenses and two different future tenses.

(101) Tense marking per Hollow (1970)

a. Past tense

rupsháshso'sh
ru-pshash=s=o'sh
INS.HAND-be.hard=DEF=IND.M
'he made it hard' (Hollow 1970: 479)

b. Narrative past tense

rupsháshoomako'sh
ru-pshash=oowąk=o'sh
INS.HAND-be.hard=NARR=IND.M
'he hardened it' (Hollow 1970: 475)

c. Future tense 1

ómanakikųte'sha?
o-w-rą-kikųtE=o'sha
PV.IRR-1s-2A-help=INT.M
'will you help me?' (Hollow 1970: 456)

d. Future tense 2

áawakerehskekto'sh
aa-wa-k-rEEh=ske=kt=o'sh
PV.TR-1A-VERT-go.there=ITR=POT=IND.M
'I might take it back again' (Hollow 1970: 480)

4 Verbal morphology

Hollow (1970: 455) remarks that *o*- is also a “true future” marker if the likelihood of an event happening is certain, though if the likelihood is less certain, *o*- may be used in tandem with the potential marker *=kt*. The *o*- may also be omitted altogether when *=kt* is present. We can see examples of this co-occurrence below.

(102) Multiple “future” marking

óo	<i>tj'xtike</i>	<i>ókasaakto'sh</i>
oo	<i>tV-ɿ'-xtike</i>	<i>o-ka-saa=kt=o'sh</i>
DEM.MID AL-PV.RFLX-quiwer PV.IRR-INS.FRCE-hang.up=POT=IND.M		
'he will hang his arrow sack there' (Hollow 1973a: 116)		

This seemingly complementary distribution makes sense if the three endings mentioned above are true tense markers, but as the data below show, these morphological items are able to co-occur.

(103) Conflicting tense marking

- a. *ómaake* *kotewét* *ó'ki*,
o-waqk=E *ko-t-we=t* *o'=ki*
 PV.IRR-POS.LIE=SV REL-WH-INDF=LOC be=COND
kú'hq't *pkahústo'sh*
k'-uh=q't *k-pa-hu=s=t=o'sh*
 3POSS.PERS-wife=DEM.ANAP MID-INS.PUSH-be.near=DEF=POT=IND.M
 'if it is somewhere by her bed, his wife will be by her' (Hollow 1973a: 117)
- b. *íminikawoxshasto'sh*
i-w-rj-ka-woxsha=s=t=o'sh
 PV.INS-1A-2S-INS.FRCE-take.good.care.of=DEF=POT=IND.M
 'I will take good care of you' (Treichter 2012b: 14)

The marker *=s* is analyzed as a preterit marker by Hollow (1970: 478). If this formative truly did mark tense and were in complementary distribution with *oomak* and *=kt*, then these constructions should be ungrammatical, as well have issues with their semantics, given the fact that there is simultaneous marking of both so-called past and future. Their presence in the corpus raises the question of how well previous analyses of these markers fit the data. Contemporary discussion of grammatical categories in Siouan languages centers around a language family that robustly marks aspect on verbs and relegates tense marking to adverbial or deictic function words, or tense is simply inferred by context (Parks &

4.3 Enclitic field

Rankin 2001: 105). While previous works on Mandan describe the languages as having tense marking, a survey of Siouan literature strongly suggests a uniform tendency towards overtly marking aspect rather than tense throughout the language family. Evidence for Parks & Rankin's (2001) claim can be found in Biloxi (Torres 2010: 2), Catawba (Rudes 2007: 2), Crow (Graczyk 2007: 305), Kanza (Cum-berland & Rankin 2012: vii), and Lakota (Ingham 2003: 28).

Going off the data in the corpus, along with looking broadly at the Siouan language family in general, I argue that Mandan has no morphological manifestation of tense on its verbs. Rather, postverbal elements that have previously been assumed to relate to tense are actually evidential or mood markers that contextualize a speaker's knowledge of the events being described or attitude towards the likelihood of an event. Below in (104) is a list of all enclitics that mark aspect in Mandan that appear in the corpus.

(104) List of aspectual enclitics

/=aahka/	retrospective (RTRO)	/=raqatE/	prospective (PRSP)
/=awij/	continuative 1 (CONT)	/=rijitE/	celerative (CEL)
/=haa/	simultaneous (SIM)	/=ske/	iterative (ITR)
/=ka/	habitual (HAB)	/=Ø/	continuative 2 (CONT)

The information that follows highlights the uses of these aspectual enclitics in the corpus, as well as points to cognates in other Siouan languages where establishing cognacy is possible. Relevant morphology appears in bold in the data below.

4.3.1.1 Retrospective aspectual enclitic: *=aahka*

Kennard (1936: 23) first describes the element *=aahka* as having multiple uses in Mandan. It may express ability to do an action or it can convey that an action has happened at a specific point, often translated as 'just then' or 'at that moment.' Hollow (1970) does not describe it, but *=aahka* does appear in his transcribed texts. Mixco (1997a: 54) likewise notes that this formative is polysemous. This enclitic seems to be either a borrowing or a cognate with Hidatsa *áagaal/áahgaa* 'be on top of.' It is rare for Mandan to have a simplex formative with a /hC/ cluster, whereas Hidatsa and Crow are rich with words with /hC/ clusters suggests that *=aahka* is a borrowing. Another possible scenario is that this enclitic comes from a combination of the postposition *áaki* 'be on top' and the habitual *=ka*. The loss of the /i/ in *áaki* would create an underlying /kk/ cluster, which would become [hk] on the surface: Pre-Mandan **aaki-ka* > contemporary Mandan *aahka*.

4 Verbal morphology

This enclitic is very rare in the corpus when used to denote a retrospective aspect: i.e., when describing an action that has just happened. We can see the behavior of this enclitic in the data below.

(105) Examples of the retrospective aspectual enclitic =*aahka*

- a. *mí'maa ó'raahka'sh, inák*
w'-iwäq o'=aahka=o'sh iräk
1POSS-body be=RTRO=IND.M again
'he is just about my size, too' (Hollow 1973a: 142)
- b. *róotkiki érehaahka, i'aakit réehtiki*
rootki=ki e-reh=aahka i-aaki=t rEEh=kt(i)=ki
hit=COND PV-want=RTRO PV.DIR-be.above=LOC go.there=POT=COND
órootki xikqmi, áakitaa kani', ráate...
o-rootki xik=awj aaki=taa ka-ri' raat=E
PV.LOC-hit be.bad=CONT be.above=LOC INS.FRCE-climb be.high.up=SV
'just when she wanted to hit him, he went upward where she could
not hit him, she climed up, way up...' (Hollow 1973a: 99)
- c. *éeheeraahka*
ee-hee=aahka
PV-speak=RTRO
'just as he said it' (Kennard 1936: 23)
- d. *kirúsheraahka*
ki-ru-shE=aahka
VERT-INS.HAND-hold=RTRO
'just as he took it back' (Kennard 1936: 23)
- e. *oo tísaahkak*
oo ti=s=aahka=ak
DEM.MID arrive.there=DEF=RTRO=DS
'having just arrived there' (Kennard 1936: 23)
- f. *áahka mí'ti xténa héroomako'sh*
aahka wj' #ti xtE=rä he=oowäk=o'sh
RTRO stone#reside be.big=TOP see=NARR=IND.M
'he just saw a big village' (Hollow 1973b: 105)
- g. *réehkere áahka, húpe pí'hämi, húurak, húpe wará'*
rEEh=krE aahka hüp(e) pi'h=awj huu=ak hüp(e) wra'
go.there=3PL RTRO shoe smoke=CONT come.here=DS shoe fire

4.3 *Enclitic field*

<i>kapiríhe</i>	<i>shúupa</i>	<i>ʃ'saqpek,</i>	<i>Shíwará're</i>
ka-prih=E	shuupa	ʃ'-saapE=ak	shi#wra'=E
INS.FRCE-spread.flat=sv	shin.bone	PV.RFLX-around=DS	foot#fire=sv
éé	ó'ka'heeroo		
ee	o'=ka'hee=oo		
DEM.DIST	be=QUOT=DEM.MID		
'they just went, his shoes kept on smoking, he came and his shoes were flaming around his ankles, and it was Fire Shoe, it is said' (Hol-low 1973a: 146)			

In the data in (105) above, we see two different manifestations of the retrospective aspectual: one as an enclitic and another as a free adverbial. In (105b) through (105e), we see *=aahka* behave like a typical enclitic in that it triggers [f]-epenthesis to prevent hiatus. In (105f), we see a full prosodic word appearing at the left edge of the clause, which is where we would expect an adverbial to appear that has scope over the whole proposition.

Given that Mandan is such an SOV language, the verb is typically the last thing to appear in a clause. This is not the case in (105g), where the free adverbial *áahka* follows the verb it is modifying. We see a similar behavior in the iterative adverbial *inák* 'again, also' in (105a). In both cases, the adverbial appears dislocated to the right, since it is parenthetical information. When *áahka* appears as a free adverbial in the corpus, it is mostly commonly found in a right dislocated position similar to (105g). The fact that this element exists with both a bound and unbound forms suggests that Mandan has been undergoing a morphological re-analysis where the unbound item has become most commonly associated with the verb it modifies and become subsumed in the enclitic field due to the frequency with which it appears postposed after the verb. It is likely that this same process is what has led to the large amount of enclitics in Mandan and other Siouan languages.

4.3.1.2 Continuative aspectual enclitics: *=qmi* and *=∅*

There are two different manifestations of the continuative aspect. One is an overt enclitic, *=qmi*, whereas the other involves ablauting the final stem vowel in a complementizer phrase. A description of each of these aspectual enclitics appears below.

4 Verbal morphology

4.3.1.2.1 Continuative 1: =*qmi*

The continuative enclitic =*qmi* has cognates across the Siouan language family. In Missouri Valley Siouan, Hidatsa has the future enclitic =*wi* and Crow as the enclitic =*wis*, which is typically glossed as ‘probably’ and the desiderative *bia*. Crow likewise has a continuative =*dawi*. In Ohio Valley Siouan, Ofo has -(*a*)*bī* to mark future events, and Tutelo has -(*a*)*pi* as a desiderative marker. In Catawba, Rudes (2007: 54) glosses =*wee* as a potential marker, but it is often glossed as ‘probably’ by L1 consultants in the Catawba source texts.

There is no reconstructed form in Proto-Siouan in Rankin et al. (2015). Missouri Valley Siouan lost nasalization, but the presence of nasalinity in Mandan but no nasalinity in Ohio Valley Siouan suggests that there may have been competing forms **awi* and **awī* in the proto-language. All other Siouan languages use this formative to mark some kind of future or possible event, though Crow has =*dawi* as a true continuative and clear cognate with Mandan =*awī*, though this formative in Crow can also have inchoative or inceptive semantics (Graczyk 2007: 307). Mandan has undergone a semantic change and no longer has a future or potential reading on this formative. Verbs bearing the continuative aspectual enclitic show that some action keeps happening or happens over and over, typically before the following action cuts off the continuative action. This behavior is shown in the examples below.

(106) Examples of the continuative enclitic =*qmi*

- a. *húurqmi*, *súkseet* *híroomako'sh*
 huu=awī suk=s=ee=t hi=oowąk=o'sh
 come.here=CONT child=DEF=DET.DIST=LOC arrive.there=NARR=IND.M
 ‘He kept coming, and then he got to the child’ (Hollow 1973a: 18)
- b. *ráahqmi*, *tís* *híreehoomako'sh*
 rEEh=awī ti=s hi#rEEh=oowąk=o'sh
 go.there=CONT house=DEF arrive.there#go.there=NARR=IND.M
 ‘He was going along, and he approached the house’ (Hollow 1973b: 46)
- c. *ú'shkami*, *róoktikereroomako'sh*
 ú'sh=ka=awī rookt=krE=oowąk=o'sh
 be.thus=HAB=CONT strike=3PL=NARR=IND.M
 ‘Continuing that way, they made camp’ (Hollow 1973b: 49)

4.3 Enclitic field

- d. “*mikó’sh, nukaráho’sh, éeheerqmi*
wík=o’sh rú-krah=o’sh ee-hee=awí
be.none=IND.M 1A-be.afraid.of=IND.M PV-say=CONT
‘“no, we are afraid,” they kept saying’ (Hollow 1973a: 22)
- e. *ká’haraamikereká’ehe*
ka’#hrE=awí=krE=ka’ehe
possess#CAUS=CONT=3PL=QUOT
‘they kept giving it to them, it is said’ (Kennard 1936: 30)
- f. *ptáahqmi*
ptEh=awí
run=CONT
‘continuing to run along’ (Kennard 1936: 30)

Kennard (1936: 30) lists this enclitic only as *=mi* in his grammar. However, when a stem ends in a consonant, he posits that there is a simultaneous *=haa* enclitic between the stem and the continuative aspectual. This analysis does not hold, as all of the verb roots where he places a simultaneous marker end in /h/, as we see in (106f), where the stem is /ptEh/ ‘run.’ Kennard often does not transcribe nasal vowels in the environment of a surface nasal stop, so it is unclear whether he perceives the overt [ã] in the enclitic. Furthermore, as discussed in §3.5.3, the continuative enclitic triggers ablaut on any preceding formative containing an ablaut vowel: i.e., /E/ like in /ptEh/ ‘run’ or /EE/ like in /rEEh/ ‘go there’ due to the underlying nasality in this formative.

Mixco (1997a: 51) likewise combines this marker with the simultaneous marker in his morphological analyses of Mandan narratives, stating that the /h/ in the simultaneous /haa/ is deleted with consonant-final stems. However, this analysis likewise does not hold, as the concatenation of a stem ending with a long vowel with an enclitic beginning with a short vowel would trigger the insertion of an epenthetic [r] between the long vowel and the short vowel like all enclitics described in §3.6.1 do: i.e., /V₁=V₂/ are realized as [V₁rV₂]. The lack of epenthetic [r] in these situations indicates that there cannot be an underlying long vowel as there is in /haa/ present before the continuative aspectual enclitic, so what both Kennard and Mixco are both perceiving is simply the /a/ in /awí/.

We can see from the data above that /awí/ experiences typical behavior for vowel-initial enclitics in that the initial vowel of the enclitic deletes before a stem that ends in an underlying short vowel as shown in (106c) and (106e). What is noteworthy in (106e) is that the surface long vowel due to ablaut does not trigger an epenthetic [r], showing that Mandan only resorts to epenthesis when in the

4 Verbal morphology

presence of underlying long vowels, not necessarily surface long vowels that are present due to ablaut. The /a/ in /=aw̩j/ is still deleted after the causitive /hrE/, which ends in an underlying short vowel. Similarly, we notice that regressive nasal harmony does not pass an enclitic boundary in (106a) and (106d). We can thus conjecture that nasal harmony must take place at an earlier cycle than [r]-epenthesis, else we would have *húunami* and *éheenami* in the previously mentioned examples, but that [r]-epenthesis happens before ablaut, else we would have *ká'haraarqmikerekā'ehe* or *ká'haraabamikerekā'ehe* in (106e).

4.3.1.2.2 Continuative 2: =∅

In his grammar, [Mixco \(1997a\)](#) assumes that the simultaneous aspectual =*haa* has an allomorph =*aa* that appears on consonant-final roots.¹² I argue that [Mixco \(1997a\)](#) [Mixco \(1997a,b\)](#) glosses many examples with the simultaneous aspectual /=*haa*/, but he is actually confounding /=*haa*/ with stem vowel /=E/ followed by the phonologically null continuative aspectual enclitic /=∅/. This /=∅/ is lexically selected to trigger ablaut, which causes the stem vowel to ablaut to [a:]. This conflation between /=*haa*/ and /=∅/ can be discerned by observing the interaction between vowel-final stems and the presence of word-final [a:], where [Mixco \(1997a\)](#) would predict we should see /=*haa*/, but we see /E/ turn to [a:] instead. To demonstrate this distinction, examples of /=∅/ appear below.

(107) Examples of continuative ablaut in Mandan

- a. ó'haraani wáarataxaa
o'#hrE=r̩ waa-ra-tax=E=∅
be#CAUS=SS UNSP-INS.MTH-make.loud.noise=SV=CONT
héroomako'sh
hE=oowąk=o'sh
see=NARR=IND.M
'from there, he saw him crying a lot' ([Hollow 1973b](#): 14)
- b. māa'qk úupat íxatanashini sí hqkaa
wāq̩-ąk úupat i-xat=rash=r̩ si hqkE=∅
land be.different PV.INS-look.at=ATT=ss travel be.standing.AUX=CONT
inák kúhoomaksj̩
irąk kuh=ooąk=sj̩
again come.back.here=NARR=INTS
'he was looking over different lands and, traveling around, he came

¹²This is never clearly stated in [Mixco's \(1997a\)](#) grammar, but by looking at the distribution of anything glossed with SIM, this pattern becomes clear.

4.3 Enclitic field

back again' (Hollow 1973a: 8)

- c. *manáataa* *waté'sh*
 wa-rqatE=Ø wa-te=o'sh
 1A-get.up=CONT 1A-stand=IND.M
 'I am standing up' (Hollow 1970: 173)
- d. "q'skak *mi'o'ro'sh, korátoore, éepes*" *éeheni*
 q'ska=ak wi-o'=o'sh ko-ratoo=E ee-w-he=s ee-he=rj
 be.like.this=DS 1s-be=IND.M REL-be.old=SV PV-1A-say=DEF PV-say=SS
*waráte rá'xj'kaa*kjnáateroomaks
 wrat=E ra'-xj'k=E=Ø ki-rqatE=oowąk=s
 dust=SV INS.HEAT-storm=SV=CONT ITR-get.up=NARR=DEF
 'I am so, older, I said,' he said and, there being a cloud of dust, he got
 back up' (Hollow 1973a: 9)
- e. *suk rírushaa* *nuháaro'xere'sha?*
 suk rV-i-ru-shE=Ø rü-haa=o'xrE=o'sha
 child 1A.PL-PV.INS-INS.HAND-hold=CONT 1A.PL-separate=DUB=INT.M
 'we shouldn't be holding onto this child, should we?' (Hollow 1973a:
 160)
- f. *shé'xtaa* *mí'ksuke*
 she'-xtE=Ø wi'#ksuk=E
 wind-AUG=CONT stone#be.narrow=SV
áareehereroomako'sh
 aa-rEEh#hrE=oowąk=o'sh
 PV.TR-go.there#CAUS=NARR=IND.M
 'being so windy, [the wind] picked up flint rocks' (Hollow 1973a: 49)
- g. *nuharáa* *íxike* *máanuruhaani*
 rü-hrE=Ø i-xik=E waa-rü-ru-haa=rj
 1A.PL-CAUS=CONT PV.INS-be.bad=SV PART-1A.PL-INS.HAND-separate=SS
nukirí'sh
 rü-kri=o'sh
 1A.PL-arrive.back.here=IND.M
 'doing it, we barely picked any [berries] and we came back' (Hollow
 1973a: 52)
- h. *skáa* *réeho'sh*
 skE=Ø rEEh=o'sh
 jump=CONT go.there=IND.M
 'he dashes off [lit. he goes there jumping]' (Hollow 1970: 211)

4 Verbal morphology

Clauses bearing this kind of continuative marking are never matrix clauses. That is, this marker only appears on parenthetical clauses that serve as adjuncts that describe some kind of action or state that is continuing to take place what the matrix clause does. We can see this difference between the ablaut continuative and the overt *=qmi* continuative in (107i), where both continuatives are present. Normally, we would expect to see a vowel change with an ablauted continuative, yet we see *kasí* remain unchanged. In the corpus, Mrs. Otter Sage translates this word as ‘went traveling,’ which shows that *kasí* has a continuative reading. Since /i/ cannot ablaut, the phonological shape of the word does not change, though its meaning does. Only /E/ and /EE/ can ablaut in Mandan, so this morphological distinction is only phonetically perceived when a formative with an ablaut vowel is followed by this / $=\emptyset$ / continuative marking. It is possible that these constructions may also have an added stem vowel / $=E$ /, but any phonological realization of the stem vowel following a stem ending with a short vowel would result in the deletion of the stem vowel for the reasons described previously in §3.6.1: i.e., /ka-si= E / \rightarrow [ka.si], because the /VV/ sequence simplifies to just [V], eliminating the stem vowel / $=E$. The matrix verb *kasímiroomako'sh* ‘he was traveling’ is marked with the overt continuative aspectual enclitic *=qmi*, reinforcing the fact that it is an enclitic, because the initial vowel of /awj/ is deleted when in contact with the /i/ in /si/.

Mandan shares this continuative ablaut with Hidatsa, where any stem-final vowel can undergo apophony. We can see examples of this process below.¹³

(108) Examples of continuative ablaut in Hidatsa

¹³The examples from Park (2012) have been slightly modified to conform to the orthography being used at the time of this writing in the Hidatsa classes at Mandaree High School in Mandaree, ND.

4.3 Enclitic field

- a. *garía* *háhguc*, *adáashigua*
 garee=∅ hahgu=c adaashi=gua
 vomit=CONT be.at=DECL outside=LOC
 'he is vomiting outside' (Park 2012: 53)
- b. *mirée rushgá* *náagihgeeta!*
 wiree ru-shgi=∅ raagi#hgee=taa=∅
 door INS.HAND-twist=CONT sit.SG#3CAUS.INDR=NEG=IMP.PL
 'don't leave the door open!' (Park 2012: 215)
- c. *awáhsia* *naharéec*
 awa#hsii=∅ raharee=c
 land#be.hazy=CONT stand=DECL
 'the haze is continuing' (Park 2012: 269)
- d. *aracóoca* *níirag* *néec*
 aracooci=∅ riiri=g ree=c
 shuffle.feet=CONT walk=ss go=DECL
 'he went shuffling his feet' (Park 2012: 539)
- e. *cawáa'ii* *aruwaríahi* *ishíac*
 cawee=∅=ii aru-wa-iriahi ishia=c
 be.hot=CONT=INTS IRR=1A-breathe be.bad=DECL
 'it is so hot that it is hard for me to breathe' (Park 2012: 230)

In the examples above, Hidatsa demonstrates that it shares a similar process whereby the continuative is marked through ablaut of the final vowel of a verbal stem. Unlike Mandan, Hidatsa is able to ablaut a non-final element within the verbal complex, as we see in (108e), where the underlying /ee/ in *cawée* 'be hot' ablauts to /aa/ in *cawáa'ii* 'it keeps being really hot' and is still followed by the intensifier =ii. In all the Mandan data in (107), ablaut is restricted to elements in a clause-final position. We can see this behavior below, where (107h) is repeated and its internal syntactic structure is shown.

(109) Structure of continuative ablaut clauses

- a. *skáa* *réeho'sh*
 skE=∅ rEEh=o'sh
 jump=CONT go.there=IND.M
 'he dashes off [lit. he goes there jumping]' (Hollow 1970: 211)
- b. [[*skáa*]_{Adjunct clause} *réeho'sh*]_{Main clause}

4 Verbal morphology

4.3.1.2.3 Summary of continuatives

Both continuatives can be found in adjunct clauses, typically with minimal additional morphology, but only *=qmi* is able to concatenate with additional formatives. The ablaut continuative is found only at the right edge of a clause, and ablaut only occurs on stems ending with /E/ or /EE/. A continuative reading can be present on stems that have no actual ablauted vowels provided that those stems end in a short vowel.

4.3.1.3 Habitual aspectual enclitic: *=ka*

Many Proto-Siouan roots are reconstructed containing *-ka (Rankin et al. 2015). This element in Proto-Siouan is a derivational suffix that provides an attributive meaning: e.g., PSi *wi-roo-ka ANIM.CL-male-ATT > Mandan *weróok* /wrook/ ‘buffalo bull.’ In Mandan, an identical reflex of this attributive derivational suffix can still be seen in nominal morphology, where novel nouns can be created with the attributive *=ka*/*=k*, but when used with verbs, a phonetically identical enclitic *=ka* marks habitual actions or states. This enclitic is often translated by speakers into English as ‘usually’ or ‘always’ with positive verbs and ‘never’ with negative verbs. Propositions can also have an imperfective reading of actions that ‘used to’ happen.

(110) Examples of the habitual aspectual enclitic *=ka*

- a. *wasí* *wáawahq’kexika’sh*
wa-si *waa-wa-hq’kE=xi=ka=o’sh*
 UNS-travel NEG-1A-stand.AUX=NEG=HAB=IND.M
 ‘I never go around traveling’ (Hollow 1973a: 54)
- b. *máanikshqtinixka’sh*
waa-ri-kshqt=ríx=ka=o’sh
 NEG-2s-be.wise=NEG=HAB=IND.M
 ‘you are not usually careful’ (Hollow 1970: 444)
- c. *wáa’onatka* *óxik* *hqk* *waká’ni*
waa-o-rątka *o-xik* *hqk* *wa-ka’=ri*
 NOM-PV.IRR-heart PV.IRR-be.bad be.standing.AUX 1A-possess=ss
wahqkekka’sh
wa-hqkE=ka=o’sh
 1A-be.standing.AUX=HAB=IND.M
 ‘I always have this bad feeling [for them]’ (Hollow 1973a: 56)

4.3 Enclitic field

- d. *íwapashirikaso'sh*
 i-wa-pa-shrih=ka=s=o'sh
 PV.INS-1A-INS.PRCE-think=HAB=IND.M
 'I used to think about it' (Hollow 1970: 444)
- e. *xamáhe nurúshektiki*
 xwáh=E rú-ru-shE=kti=ki
 be.small=sv 1A.PL-INS.HAND-hold=POT=COND
íhekka'sh
 i-hek=ka=o'sh
 PV.INS-know=HAB=IND.M
 'whenever we take a little bit, he always knows' (Hollow 1973b: 116)

This enclitic always marks habitual actions, whether this action is something that always happens or never happens. It is also used when describing habitual actions in the past that no longer take place. Kennard (1936: 19) does not analyze =ka as a single element he calls the customary marker, but analyzed the sequence of the habitual and the gender-oriented indicative markers as being a single unit: i.e., /=ka=o'sh/ is /=ka'sh/ per Kennard. When the definite marker /=s/ is present, Kennard likewise analyzes /=ka=s/ as a single element that he calls the usitative. There does not seem to be a clear difference between these two constructions in Kennard's (1936) grammar.

Hollow (1970: 444) argues that this enclitic is a single discrete element, but calls it an imperfective aspectual. This analysis does not entirely fit the actual distribution and function of this enclitic, especially when Hollow states that an imperfective action can take preterite marking, where he analyzes the definite marker /=s/ as preterite. As discussed at the beginning of this subsection in example (101), it is not the case that Mandan morphologically marks tense, so /=s/ cannot be a true preterite marker. Furthermore, preterite marking is inherently a combination of the perfective aspect and past tense, so it would be contradictory for a true imperfective to take preterite marking.

For the sake of eliminating any confusion over the primary role this enclitic plays in expressing habitual or repeated actions, which lines up with the description of =ka in Mixco (1997a: 27). It is likewise not accurate to simply call this enclitic a true imperfective, as it cannot be used to describe actions that are continuous until cut off by an intervening action. We can observe this lack of =ka-marking below, where one imperfective action is taking place (i.e., facing the basket towards the old woman) and is then interrupted by a perfective action (i.e., the spirit of the old woman shooting into the basket).

4 Verbal morphology

- (111) Lack of imperfective marking on an imperfective action

rok̄qkaxi'hseet
rok̄qka#xi'h=s=ee=t
old.woman#be.old=DEF=DEM.DIST=LOC
ókitataaherek, shé karóopxeka'eheero'sh,
o-ki-ta~taa#hrE=ak she ka-roopxE=ka'ehe=o'sh
PV.LOC-MID-CONT~be.facing#CAUS=DS wind INS.FRCE-enter=QUOT=IND.M
taxé'hq'kseet
ta-xe'#ha'k=s=ee=t
3POSS.AL-hang#stand.POS=DEF=DEM.DIST=LOC
 'he was making it face the old woman, and her spirit went in, it is said, into his basket' (Hollow 1973a: 148)

The lack of any overt marking of imperfective aspect on the first action (i.e., making the basket face the old woman) highlights the fact that the semantics of *=ka* are narrower than than of a true imperfective. As such, treating this enclitic as marking habitual actions or states more accurately encapsulates the observed usage in the corpus.

4.3.1.4 Prospective aspectual enclitic: *=naate*

The prospective aspectual enclitic *=naate* has cognates across the Siouan language family. In Hidatsa, Boyle (2007: 165) describes the approximative *=raa* as conveying the sense of 'almost.' Crow has a cognate *=laa* (Graczyk 2007: 164). There are two elements in Biloxi that have a match with the meaning of this formative in Mandan and Missouri Valley: the enclitic *=nqqteke* 'nearly' and the adverb *yqqxa* 'almost' (Kaufman 2011).

The presence of a doublet in Biloxi with two different reflexes complicates a possible Proto-Siouan reconstruction. The varied material present in the Biloxi forms and the shorter forms in Crow and Hidatsa suggest that this was a complex construction in Proto-Siouan, *raq-tE, where the initial element looks to be related to *raq- 'by foot' plus a *-tE stem augment.¹⁴ Mandan uses this enclitic to mark a situation that almost came to pass, and is nearly always translated with the English word 'almost.' We can see the behavior of this enclitic below.

¹⁴This stem augment is never discussed in Rankin et al. (2015), though it does bear resemblance to the Mandan verb *té* 'stand,' which itself is derived from the Proto-Siouan standing classifier for inanimate entities PSi *rahE: i.e., *rahE > **rhE > Man. *té*. This stem augment *-tE appears on several enclitics, but it is not clear what those enclitics might have in common to trigger the addition of *-tE to the stem.

4.3 Enclitic field

(112) Examples of the prospective aspectual enclitic =naate

- a. *ú'sh, áakeenaataani róo*
ú'sh aa-kee=rqatE=rj̥ roo
 be.thus PV.TR-move.away=PRSP=SS DEM.MID
áakeeroomaksjh
 aa-kee=oowqk=sjh
 PV.TR-move.away=NARR=INTS
 'So, I almost stepped on her and stepped on her here' (Hollow 1973a: 71)
- b. *súkxikanashnak pá warú'uuxanaate'sh*
 suk#xik=rash=rak pa wa-ru-uux=rqatE=o'sh
 child#be.bad=ATT#POS.SIT head 1A-INS.HAND-be.broken=PRSP=IND.M
 'I almost broke this no-good child's head' (Hollow 1973b: 158)
- c. *miní wáaxtaani watúshak*
 wrj̥ waa-xtE=rj̥ wa-tush=ak
 water NOM-be.big=ss UNSP-be.fast=DS
óruxkenaateroomako'sh
 o-ru-xke=rqatE=oowqk=o'sh
 PV.LOC-INS.HAND-sink=PRSP=NARR=IND.M
 'the water was really fast and he almost sank' (Hollow 1973b: 296)
- d. *wáatoohé míkanaate'sh*
 waa-tooh=E wj̥k=rqatE=o'sh
 NOM-be.blue/green=sv be.none=PRSP=IND.M
 'there is almost no blue' (Hollow 1970: 468)
- e. *mú'pka ótaa waherénaate'sh*
 w'-uk#pa o-taa wa-hrE=rqatE=o'sh
 1POSS-hand#head PV.LOC-be.facing 1A-CAUS=PRSP=IND.M
 'I almost pointed my thumb at him' (Hollow 1973b: 133)

The enclitic preserves the formative-final ablaut vowel from Proto-Siouan, as we see in (112a), where the same-subject switch-reference marker =ni triggers /E/ to become [aa]. However, unlike most other enclitics that contain nasal elements, =naate itself does not trigger ablaut in a preceding stem, as we see in (112e), where the underlying ablaut vowel in the causative /hrE/ does not become [aa]. The ability to be ablauted by not cause ablaut is consistent across the corpus for all speakers.

4 Verbal morphology

4.3.1.5 Celerative aspectual enclitic: *=niite*

The celerative aspectual enclitic *=niite* is first identified in Hollow (1973a: 30), which he describes as marking actions that happen quickly or states that arise suddenly. This description matches the usage of this enclitic throughout the corpus. This enclitic seems to be derived from Proto-Siouan *rij- 'walk.' Other Siouan languages use particular motion verbs to mark aspect periphrastically, such as Lakota, as seen in the data below.

(113) Aspectual auxiliaries in Lakota

- a. *kaksá iyéwaye*
ka-ksA i-yA#wa-yA
INS.FRCE-cut PV.DIR-speak#1A-go
'I suddenly cut it off' [lit. 'I sent it away cutting'] (Ingham 2003: 38)
- b. *kaksá iyáye*
ka-ksA i-yA~yA
INS.FRCE-cut PV.DIR-R~go
'[the clouds] cleared away' [lit. '[the clouds] went away cutting'] (Ingham 2003: 38)

Both of the examples above show a motion verb combining with an action to convey the sense that the action has happened suddenly as in (113a), or that the action happened quickly as in (113b). Both of these uses of motion verbs in Lakota could parallel the use of *nii* 'walk' in Pre-Mandan, where an auxiliary could have become reanalyzed as an enclitic. The presence of the final syllable on *=niite* suggests that there was a *-tE stem augment on the auxiliary verb at some point. The motivation for how certain stem augments in Proto-Siouan become part of certain stems is not known. Jones (1991: 512) proposes that Proto-Siouan roots have a basic shape of CV(V), and that any consonant clusters or root extensions are due remnants of ancient morphology. Certain root extensions are common throughout Siouan and seem obvious, as in the case of stems ending in /k/ or /ka/, which derive from the same source as the habitual enclitic in Mandan that was discussed previously in §4.3.1.3. The *-tE stem augment appears in several Mandan enclitics, but its origin is not well understood.¹⁵

¹⁵ Proto-Siouan likewise has several stem augments that are poorly understood, such as *-he, *-te, and *-re. Jones (1991) argues that Proto-Siouan had a system of root extensions that have become fossilized onto lexical stems, in many cases obscuring the semantics conveyed by adding these morphological items, but more work is needed in comparative Siouan to posit what role these elements played in the protolanguage.

4.3 Enclitic field

While the entirety of the Proto-Siouan origin of *=niite* is opaque, its usage is not. Any action that happens quickly or state that arises suddenly will take the celerative aspectual enclitic. We can see examples of its use in the data below.

(114) Examples of the celerative aspectual enclitic *=niite*

- a. *wáaxnake* *ímisqapaa*
 waax#rak=E i-wi-saqE=∅
 cottonwood#POS.SIT=SV PV.DIR-1s-around=CONT
waráahiniitekto'sh
 wa-rEEh=ríjtE=kt=o'sh
 1A-go.there=CEL=POT=IND.M
 I want to go quickly around that cottonwood tree' (Hollow 1973a: 147)
- b. *kotewé* *kí'kiniiteki*, *íshqhe* *kaxipaa*
 ko-t-we kí'k=ríjtE=ki i-shaq= e ka-xip=E=∅
 REL-WH-INDF finish=CEL=COND 3POSS-side=SV INS.FRCE-skin=SV=CONT
kí'kiniiteki, *ée* *wáaka'ro'sh*
 kí'k=ríjtE=ki ee waa-ka'=o'sh
 finish=CEL=COND DEM.DIST NOM-possess=IND.M
 'if someone finishes quickest, if [whoever] finishes skinning his side
 quickest, the [whole thing] is his' (Hollow 1973a: 42)
- c. *náataaniitaani* *éerehanashki*, *mí'seena*
 rąqE=níjtE=ríj ee-reh=rash=ki wi'=s=ee=rą
 stand=CEL=SS PV-want=ATT=COND stone=DEF=DEM.DIST=TOP
írushenashoomaksjh
 i-ru-shE=rash=oowąk=sjh
 PV.INS-INS.HAND-hold=ATT=NARR=INTS
 'when he tried to get up in a hurry, the rock was kind of holding him'
 (Hollow 1973a: 45)
- d. *pí'niitekaraani* *róo* *Kínúma'kshi* *wáaheres*
 pi=ríjtE=krE=ríj roo ki-ruwą'k#shi waa-hrE=s
 devour=CEL=3PL=SS DEM.MID MID-man#be.good NOM-CAUS=DEF
rusháani *éerehkerek...*
 ru=shE=ríj ee-reh=krE=ak
 INS.HAND-hold=SS PV-want=3PL=DS
 'they ate [their mother's food] up quickly and they wanted to take
 Old Man Coyote's food here.' (Hollow 1973a: 27)

4 Verbal morphology

Unlike the prospective aspectual enclitic *=naate*, the celerative aspectual triggers ablaut, as we can see in (114c) above. It is not clear why *=niite* causes ablaut but *=naate* does not, especially since ablaut is predominantly triggered by morphology bearing nasal segments. One possibility is that this formative is a relatively recent addition to the enclitic field and that this tardiness is what has exempted it from triggering ablaut, versus the majority of ablaut-triggering enclitics which seems to also trigger ablaut in other Siouan languages.¹⁶

4.3.1.6 Iterative aspectual enclitic: *=ske*

Mandan can mark iterative aspect derivationally on a verb through the prefix *ki-*, which has cognates across the Siouan language family. Another way in which iterativity manifests in Mandan is through the iterative aspectual enclitic *=ske*. Hoocak has a cognate *=šge* ‘too, also’ (Lundquist p.c.). There seems to be a semantic difference between these two enclitics, but as previously seen in (105a) the iterative adverbial *inák* ‘again’ in Mandan can also have the meaning ‘too’ or ‘also’.

(115) Examples of the iterative aspectual enclitic *=ske*

- a. *kasúkskeroomako'sh*

ka-suk=**ske**=oowąk=o'sh

ITER-EXIT=ITER=NARR=IND.M

‘he came out again’ (Hollow 1973b: 152)

- b. *Rokqákakotawiihq'kas*

rokąqka#ko-ta-wiihq'ka=s

old.woman#3POSS.PERS-AL-grandchild=DEF

wáakimaaxeskeroomako'sh

waa-kiwąqxE=**ske**=oowąk=o'sh

UNSP-ask=ITER=NARR=IND.M

‘Old Woman’s Grandson asked her again’ (Hollow 1973b: 138)

- c. *kisúk j'hereskeroomako'sh*

ki-suk j'-hrE=**ske**=oowąk=o'sh

MID-child PV.RFLX-CAUS=ITER=NARR=IND.M

‘he turned into a child again’ (Hollow 1973b: 150)

¹⁶Jones (1983a) and Rood (1983) both bring up some possible scenarios in Pre-Proto-Siouan where ablaut could have been a regular phonological phenomenon that became morphologized after a sound change, but to the best of my knowledge, little work has been done recently to investigate this hypothesis. If ablaut originated from a collapse of possible nasal vowels in Pre-Proto-Siouan, where nasal mid vowels *?*ɛ* and *?*ɔ* merged with oral vowels, resulting in apophony in Pro-Siouan.

4.3 Enclitic field

- d. *wáarakú'skenitinixo'sha?*
 waa-ra-kú'=ske=rít=ríx=o'sha
 NEG-1A-give=ITER=2PL=NEG=INT.M
 'you (pl.) haven't given it to him again?' (Hollow 1970: 480)
- e. *rakú'karaaskenito'sh*
 ra-kú'=krE=ske=rít=o'sh
 1A-give=3PL=ITER=2PL=IND.M
 'you (pl.) are giving it to them again' (Hollow 1970: 453)
- f. *karátaxaa* *máakaaskeki*
 k-ra-tax=E=Ø wáqkE=ske=ki
 ITER-INS.MTH-make.loud.noise=SV=CONT lie.AUX=ITER=COND
 'when he continued crying' (Trechter 2012b: 244)

As previously discussed in §3.5.3.1, some speakers treat this as an ablaut-triggering enclitic, while other do not. It is not clear if this distinction follows old Núu'etaa or Rúptaa lines and is dialectal, or if the difference is idiolectal or familiolectal. Neither Hollow (1970: 480) nor Mixco (1997a: 29) mention what difference exists between the iterative prefix *ki-* and the iterative aspectual enclitic *=ske*, with both authors questioning whether there is a difference. Kennard (1936: 11) suggests that the difference between the two is equivalent to the difference between using the English prefix 're-' as in 'reconvene' and simply using the adverb 'again,' with *ki-* being 're' and *=ske* being 'again.' Furthermore, Kennard states that *=ske* is not a true repetitive (i.e., action that happens over and over again), but that the action has repeated perhaps once. Work with contemporary Mandan speakers has not settled the difference between these two formatives, and it may certainly be the case that it is a difference in stylistics rather than semantics.

4.3.2 Evidential and modal enclitics

Several of the grammars on Siouan languages that have been published in the last decade or so (e.g., Graczyk's (2007) grammar of Crow and Park's (2012) grammar of Hidatsa) have described much of what had been previously described by earlier scholars as tense markers as really being evidentials or modals. Re-examining similar markers in Mandan, we can make a similar case that many of the verbal endings that (Hollow 1970) and (Mixco 1997a) call tense markers are truly evidentials or modals. A list of these enclitics appears below.

(116) Evidential and modal enclitics in Mandan

4 Verbal morphology

/=aahka/	dynamic modal (ABLE)
/=a'shka/	possible modal (PSBL)
/=ishi/	visual evidential (VIS)
/=ka'ehe/	quotative evidential (QUOT)
/=kt/	potential modal (POT)
/=ootE/	indirect evidential (EVID)
/=oowąk/	narrative evidential (NARR)
/=o'xrE/	dubitative modal (DUB)
/=rash/	attitudinal evidential (ATT)
/=s/	definite evidential (DEF)

The following subsections illustrate the usage of these enclitics within the corpus. These are some of the most common post-verbal elements in Mandan, as most non-direct evidence is accompanied by some kind of evidential enclitic. Mandan is similar to Hidatsa in this respect (Park 2012: 220), though it is not clear if this extensive use of evidentials is a shared trait with Hidatsa or carry-over effect of one language influencing another due to hundreds of years of living closely and intermarriage between the two groups. While several of these enclitics appear extensively throughout the corpus (e.g., the narrative evidential =*oomak* and the potential modal =*kt*), there are some that scarcely occur (e.g., the possible modal =*a'shka*).

4.3.2.1 Dynamic modal enclitic: =*aahka*

The dynamic modal =*aahka* is homophonous with the retrospective aspectual =*aahka*. No data includes instances of both these markers in their respective roles being used on the same verb, however. It is unclear whether Mandan allows both manifestations of =*aahka* to appear simultaneously like other homophonous formatives (e.g., the polysemous *ki-* prefix, which can be iterative, middle voice, vertitive, etc.). The lack of L1 speakers at this point leaves any discussion of multiple =*aahka* marking as purely hypothetical, given the lack of such in the corpus. As previously discussed in §4.3.1.1), this enclitic is likely derived from some form of the term *áaki* 'be above, on top of.' We can see examples of the dynamic modal enclitic in the data below in (117).

(117) Examples of the dynamic modal enclitic =*aahka*

- a. *káare mishúykas ka'óotaahkani*
 kaare wí-shúyka=s ka-oot=aahka=rí
 NEG.IMP 1POSS-male's.younger.brother=DEF INS.FRCE-mix=ABLE=SS

4.3 Enclitic field

- kixawáaro'sh*
 ki-xwaa=o'sh
 MID-disappear=IND.M
 '[I said] don't let my brother get hurt, and he got hurt and died' (Hollow 1973a: 63)
- b. *íkixq̥uh-haa-pirák kapéeka'eheero'sh, numá'ke*
 i-kixq̥uh=haa#pirak ka-pee=ka'ehe(e)=o'sh ruwq̥'k=E
 PV.NUM-five=SIM#ten INS.FRCE-be.distributed=QUOT=IND.M man=sv
írupa óruxokaahka
 i-ru-pa o-ru-xok=aahka
 PV.INS-INS.HAND-pull? PV.IRR-INS.HAND-lift=ABLE
 'there were fifty were left, it is said, men who could lift a gun' (Hollow 1973a: 47)
- c. "*máa'yst niníiraahkaki*" éeheerak...
 waa-ut=t rj~rj=aahka=ki ee-hee=ak
 NOM-be.in.past=LOC R~walk=ABLE=COND PV-say=DS
 'if only [the child] could walk already,' he said and...' (Hollow 1973a: 160)

This modal almost always corresponds to the English modal 'can' or 'could' in the sense of conveying one's ability to perform an action or allow an action to come to pass.

4.3.2.2 Possible modal enclitic: =*a'shka*

Possibility in Mandan can be expressed through the use of =*a'shka* as an enclitic or a free modal *á'shka* 'maybe.' This formative is relatively rare in the corpus.

(118) Examples of the possible modal enclitic =*a'shka*

- a. *riréesika'shka ó'reeho'sh*
 ri-reesik=a'shka o-e-reh=o'sh
 2POSS-tongue=PSBL PV.IRR-PV-think=IND.M
 'he'll think that it might be your tongue' (Hollow 1973a: 189)
- b. *káni "tashká waheréki wawáruuto'xara'shka,"*
 ka=rj tashka wa-hrE=ki wa-wa-ruut=o'xrE=a'shka
 PROS=ss how 1A-CAUS=COND UNSP-1A-eat=DUB=PSBL

4 Verbal morphology

éerehoomako'sh

ee-reh=oowąk=o'sh

PV-think=NARR=IND.M

‘and how might I be going to eat if I do that?’ (Hollow 1973b: 46)

- c. *mi'shak, maní'o'na* *q'skarahara'shka*, *éwaharaani...*
 w~ishak wa-rj-o'=raq q'ska#ra-hrE=a'shka e-wa-hrE=rj
 1s-pro UNSP-1s-be=TOP be.near#2A-CAUS=PSBL PV-1A-CAUS=SS
 ‘me? you were the one who maybe did something, I thought and...’
 (Hollow 1973b: 238)
- d. *súkxiknak* *téewahere'shka*
 suk#xik#rąk tee#wa-hrE=a'shka
 child#be.bad#POS.SIT die#1A-CAUS=PSBL
wáa'iwapkaaxi'sh
 waa-i-wa-pkE=xi=o'sh
 NEG-PV.INS-1A-taste=NEG=IND.M
 ‘maybe me killing that no-good kid will not do me any good’ (Hollow 1973b: 132)
- e. “*nutámaanuks* *kirí* *á'shka*,”
 ru-ta-waaruk=s k-ri a'shka
 1A.PL-AL-male's.friend=DEF VERT-arrive.there PSBL
éehekereroomako'sh
 ee-he=krE=oowąk=o'sh
 PV-say=3PL=NARR=IND.M
 ‘I wonder if our friend got back,’ they said’ (Hollow 1973b: 214)

Generally, this enclitic triggers ablaut. There are only a few instances in the corpus where =*a'shka* does not result in ablaut, like in (118d). Most enclitics that trigger ablaut have historically featured nasal segments, but this is not the case with =*a'shka*. This word does bear similarity to the word *q'ska* ‘be near, correct,’ so it is possible that =*a'shka* is a phonologically reduced form that has lost its nasal feature as an enclitic, but the historical nasality has caused it to be classified as an ablaut-triggering enclitic. Furthermore, the mismatch in fricatives could be due to an increased fricative caused by the sound symbolism Mandan has.

Another use of this formative is as a free formative *á'shka* ‘maybe,’ as seen in (118e). Like the retrospective aspectual *áahka* ‘just,’ speakers may treat the possible modal as an enclitic or an unbound element, though when used as an unbound element, it is always postposed after the matrix verb. This use of *á'shka* is rarely observed in the corpus, and only appears in direct quotations, though it

4.3 Enclitic field

is common enough in spoken conversations. In (118e), the speakers are wondering aloud to themselves. Normally, almost every complete sentence in Mandan must be marked for the sex of the listener (i.e., a female listener or male listener). However, the possible modal seems to preclude the ability to have this allocutive agreement.

Examples of a question with a listener orientation and another no listener orientation appear below. The first question in (119a) above is directed to a specific male listener, and as such, it bears the male-oriented indicative enclitic *=o'sh*. The same is not true of the question in (119b), where the speaker is not addressing anyone, but wondering aloud ‘what time is it?’

(119) Direct versus indirect questions

Consulting with a Mandan speaker reveals that the sentence in (119b) can also mean 'I wonder what time it is.' When used this way, *á'shka* does not necessarily imply that the speaker is asking the question to anyone in particular, and with no listener selected, there can be no allocutive agreement marking on the clause.

4.3.2.3 Visual evidential enclitic: *=ishi*

In the corpus, most of the data come from traditional narratives. As such, very little of it is first-hand information. However, when a figure in the narrative is speaking out loud, or in the case of language consultants speaking extemporaneously on a topic that is not a traditional narrative, the visual evidential *=ishi* appears. This evidential is used to express that the information being reported come from personal, eye-witness testimony. Another use of this enclitic is to convey that some can tell that something is the case simply by looking at it: e.g., someone must be lost because they appear to be from the speaker's perspective. We can see examples of this evidential below.

(120) Examples of the visual evidential enclitic =ishi

4 Verbal morphology

- a. *q’sh keréehishikere’sh*
 q’sh k-rEEh=ishi=krE=o’sh
 be.thus VERT-go.there=VIS=3PL=IND.M
 ‘so, they clearly must have gone home’ (Hollow 1973b: 265)
- b. *mi’ti ríutakt ísukishi’re*
 wi’#ti ruutak=t i-suk=ishi=o’re
 stone#dwell be.far.away=LOC PV.DIR-exit=VIS=IND.F
 ‘he obviously must belong to the village over there’ (Hollow 1973b: 157)
- c. *kowóorooxikanashs ée*
 ko-wooroo#xik=rash=s ee
 3POSS.PERS-husband#be.bad=ATT=DEF DEM.DIST
wáa’o’nixishi’re
 waa-o’=rix=ishi=o’re
 NEG-be=NEG=VIS=IND.F
 ‘it must not be her no-good husband over there after all’ (Hollow 1973a: 133)
- d. *wáatishika’sh*
 waa-ti=ishi=ka=o’sh
 someone-arrive.there=VIS=HAB=IND.M
 ‘someone must be coming here’ (Hollow 1973a: 142)
- e. *ée shanahkere, ptíj ishí’sh*
 ee shrák=krE ptíj ishi=o’sh
 DEM.DIST be.around=only buffalo VIS=IND.M
 ‘nothing but round things over there, they must be buffalo’ (Hollow 1973b: 212)

In examples (120a) through (120d), we can see that =ishi serves to inform the listener that the speaker can attest to the veracity of the statement through visual evidence. In (120a), for instance, the speaker conjectures that the other people have gone home due to the fact that a visual inspection reveals that they are no longer there. Similarly, in (120c), the speaker can tell that the man she is looking at is not her relative’s husband, as she can tell by looking at him.

Like several other enclitics, there is a free form, *ishí*. There is no obvious Proto-Siouan origin for this evidential, so it is not clear whether this is a piece of inherited Proto-Siouan morphology or a Mandan innovation. Furthermore, internally reconstructing this formative is tenuous. One possible analysis is that it comes

4.3 Enclitic field

from Pre-Mandan *i-ši, where *ši is modern Mandan *shí* ‘good,’ and *i is a pre-verb. This construction could have been used peripherastically to emphasize that a statement has been visually attested. Over time, this verb could have lost its internal morphological boundaries (i.e., *i-ši > **iši) and then become analyzed as simplex verb, like we see in (120e). The Mandan verb complex is so elaborate that speakers could have begun to interpret this evidentiality-denoting verb as being a simple evidential enclitic, which is how =*ishi* typically is realized in the corpus. This process is reminiscent of Chafe’s (1999: 39) notion of florescence, which holds that particular features of a grammar may come to dominate the form that a language takes. In this sense, Mandan encodes so much information in its verb complex that elements that exist outside of it (e.g., auxiliary verbs) can come to be subsumed by it and reanalyzed as being part of the verb itself, rather than an auxiliary that accompanies a verb. Another possible origin is the Proto-Siouan locative *ši, and this locative became lexicalized and acquired verbal morphology in the form of the instrumental preverb *i*.

4.3.2.4 Quotative evidential enclitic: =*ka’ehe*

The corpus mostly consists of traditional narratives of the Mandan people. As such, most events that appear in the corpus are not first-hand information. One way for the speaker to indicate that the information being presented is reported information is to include the quotative evidential enclitic =*ka’ehe*. This marker is transparently composed of the habitual =*ka* and a prosodically weakened verb *éehee* ‘say.’¹⁷ Speakers recognize this element as meaning ‘say,’ and there are instances of it being realized with long vowels in precise speech.

We see similar morphology across Siouan. There are similarities with the Hidatsa reportative =*rahee* (Boyle 2007: 194), which looks to be made up of Proto-Siouan *yä-hee, where *yä is some kind of topic marker or demonstrative, and *hee is the verb ‘say.’ Crow marks quoted speech both morphologically and peripherastically, with the enclitic =*hcheilu* being made up of the indirect causative *hche* and the plural allomorph of the habitual aspectual enclitic =*ilu* cliticizing onto the verb or by adding *huuk* ‘they say’ at the end of the statement (Graczyk 2007: 397). Assiniboine has two functionally equal quotative markers: =*hýstá* and =*káya*, the latter being a combination of either the durative =*ka* or a distal demonstrative *ká* and the verb *yá* ‘say’ (Cumberland 2005: 357). Biloxi likewise has a construction derived from ‘they say’ plus the habitual aspectual enclitic,

¹⁷The *éehee* is so prosodically weak in the speech of most Mandan speakers that Kennard (1936:

19) transcribed it in superscript: e.g., (xama’kerka’^{ehe}) ‘they were small, it is said,’ which would be *xamahkerekā’ehe* in the present orthography.

4 Verbal morphology

=éetu=xaa (Dorsey & Swanton 1912: 189), though it also has *yeke*, which is an inferential marker that fulfills a similar role.

Languages across the entire Siouan language family have dedicated morphology or a periphrastic construction to denote quoted speech. However, the composition of the quotative or reportative enclitics are quite varied. As such, cannot conclusively say that there was a quotative marker in Proto-Siouan, but it is likely that we are seeing a case of parallel development, since the element most of these constructions have in common is some form of the word ‘say.’ Rankin (2010: 12) likewise notes the presence of quotative markers in most branches of Siouan, but he states that these markers “represent nice examples of parallel development, but, as such, they do not constitute evidence for subgrouping.” We can see examples of the quotative evidential enclitic in the data below.

(121) Examples of the quotative evidential enclitic =ka’ehe

- a. *Numá’k Máxanas réehak, Kinúma’kshis*
ruwá’k wáxraq=s rEEh=ak ki-ruwá’k#shi=s
 man one=DEF go.there=DS MID-man#be.good=DEF
wá’xokaa náateka’eeheero’sh
wa’-xok=E rąqE=ka’eehee=o’sh
 INS.PRCE-be.idle=sv stand.up=QUOT=IND.M
 ‘with Lone Man having gone, First Creator jumped up, it is said’ (Hollow 1973a: 2)
- b. “*háu, wá’to’sh,*” *éerehka’ehesj̥h*
hau w’-at=o’sh ee-reh=ka’ehe=sj̥h
 yes 1POSS-father=IND.M PV-think=QUOT=INTS
 “‘yes, it is my father,’ he thought, it is said’ (Hollow 1973a: 5)
- c. “*hóo,*” *éeheka’ehes*
hoo ee-he=ka’ehe=s
 yes PV-SAY=QUOT=DEF
 “‘yes,’ they said, it is said’ (Hollow 1973a: 49)
- d. *ú’shkana áahika’eheroo*
ú’sh=ka=rą aa-hi=ka’ehe=oo
 be.thus=HAB=TOP PV.TR-arrive.there=QUOT=DEM.MID
 ‘so, he took her there, it is said, then’ (Hollow 1973a: 70)
- e. *Rá’puse íkarapqtkereka’eeheerak,*
ra’-pus=E i-k-rapq=krE=ka’eehee=ak
 INS.HEAT-be.marked=sv PV.INS-MID-increase=3PL=QUOT=DS

4.3 Enclitic field

	<i>wakárahash</i>	<i>waréeho'sh</i>
	wa-ka-ra-hash	wa-rEEh=o'sh
	1A-INCP-INS.FOOT-slaughter	1A-go.there=IND.M
	'Speckled Arrow's [birds] have increased, it is said, and I am going to slaughter them' (Hollow 1973a: 148)	
f.	<i>ráahini tamáahs</i>	<i>kirúsheka'ehe</i>
	rEEh=rj̥ ta-waqh=s	ki-ru-shE=ka'ehe
	go.there=ss 3POSS.AL-arrow=DEF VERT-INS.HAND-hold=QUOT	
	'he went and took back his arrows, it is said' (Hollow 1973a: 16)	
g.	<i>máaxtik ókshuko'na</i>	<i>óshiriihaa</i>
	waqxtik o-kshuk-o'=raq	o-shriih=E=∅
	rabbit PV.IRR-be.narrow-be=TOP PV.LOC-be.scattered=sv=CONT	
	<i>ptéhkerek'a'ehe</i>	
	ptEh=krE=ka'ehe	
	run=3PL=QUOT	
	'it was the cottontails who were running scattered, it is said' (Hollow 1973a: 17)	

The majority of instances of *=ka'ehe* in the corpus involve no additional enclitic material after the quotative itself. We see this behavior in (121f) and (121g). When the quotative is not word-final, it is because an allocutive declarative marker is following it: e.g., the *=o'sh* we see in (121a). The quotative is also followed by the bound medial demonstrative *=oo* to emphasize some place or time in which the quoted event happened like in (121d), or it may be followed by the definite *=s* like in (121c) or intensive *=sjh* like in (121b) to highlight that the speaker is reporting information they have not personally witnessed, they can attest to the veracity of the claim nonetheless. Rarely, *=ka'ehe* appears on non-matrix verbs, as we can see in (121e), where the veracity of the initial clause is hearsay (i.e. the number of birds that Speckled Arrow has has increased), but the prososition in the matrix clause is not hearsay (i.e., 'I am going to slaughter them').

Like the verb *éehee* 'say,' the realization of the quotative varies somewhat. When word-final, the last vowel in the stem is short, but when taking additional morphology, the vowel is long. This difference mirrors the alternation between the vacillation between speakers treating the verb 'say' as having an underlying short vowel or a long vowel: i.e., /ee-he ~ ee-hee/.

4 Verbal morphology

4.3.2.5 Potential modal enclitic: =kt

The potential modal enclitic =kt is one of the most robustly-attested pieces of postverbal morphology across the Siouan language family. This Proto-Siouan modal enclitic *ktE has reflexes in Missouri Valley in the desideritive =hdi (Park 2012: 194), the potential ktA in Lakota (Ullrich 2011: 821), the future -kje in Hoocak (Helmbrecht & Lehmann 2006: 54), the potential -tte in Quapaw (Rankin 2005: 484), the optative -tE in Biloxi (Einaudi 1976: 31), and the ability modal and future marker te in Yuchi (Linn 2000: 291).

Mandan shares much in common with the various uses of the reflexes of *ktE in that =kt is extremely versatile as a modal. Its most common usage is to provide a future reading for an event or state, and we can see this use in the data below.

(122) Future readings for =kt

- a. *míuptos rushéktō'sh*
wíipto=s ru-shE=kt=o'sh
ball=DEF INS.HAND-hold=POT=IND.M
'she will take the ball' (Hollow 1973a: 86)
- b. *mí'shak hq'khaa íreehraherekto'sh*
w'íishak hq'k=haa i-rEh#ra-hrE=kt=o'sh
1POSS-PRO STND.POS=LOC PV.INS-go.there#2A-CAUS=POT=IND.M
'you will put it on after me' (Hollow 1973a: 109)
- c. *tewé úyte paskíjhki taptíjktō'sh*
t-we úy= E pa-skíjh=ki ta-ptíj=kt=o'sh
WH-INDF be.first=sv INS.PUSH-cut.open=COND AL-buffalo=POT=IND.M
'whoever opens it first, it will be his buffalo' (Hollow 1973b: 6)
- d. *wáa'iminirats qqwe, miníike,*
waa-i-w-ri=rat= s qqwe wi-ri=j=E
NOM-PV.INS-1A-2s-promise=DEF all 1POSS-son=sv
raká'ktō'sh
ra-ka'=kt=o'sh
2A-possess=POT=IND.M
'you will have everything I promised you, my son' (Hollow 1973a: 192)

Another common use of =kt is to express permissive deontic modality and matches up with such uses of English 'can.' The =kt here indicates that someone has permission to do something.

(123) Permissive deontic readings for =kt

4.3 Enclitic field

- a. *manakík'utekto'sh ókaxiipe*
 w-rq-kik'utE=kt=o'sh o-ka-xiip=E
 1s-2A-help=POT=IND.M PV.IRR-INS.FRCE-skin=SV
 'you can help me skin it' (Hollow 1973a: 41)
- b. *wá'aahuuki órara'kto're*
 waa-aa-huu=ki o-ra-ra'=kt=o're
 PART-PV.TR-come.here=COND PV.LOC-2A-make.fire=POT=IND.F
 'you can make a fire if he brings some' (Hollow 1973a: 120)
- c. *wíipe íwasehki rakéeka'ni*
 wiip(E) i-wa-sek=ki ra-keeka'=rj
 cornball PV.INS-1A-make=COND 2A-have=ss
raráahinistošh
 ra-rEEh=rj=t=o'sh
 2A-go.there=2PL=POT=IND.M
 'if I make cornballs, you can have them and go' (Hollow 1973b: 268)
- d. *ómaniitaa miní tú téki*
 o-wa-rj=taa wrj tu tE=ki
 PV.IRR-1A-walk=LOC water be.some STAND.UPRIGHT=COND
rahíjikto'sh
 ra-hij=kt=o'sh
 2A-drink=POT=IND.M
 'there will be some water where I walk and you can drink it' (Hollow 1973a: 114)

Another kind of necessitative deontic modality that *=kt* can express is one that conveys an action that one 'should' or 'should not' engage in per some set of rules, norms, and the like.

(124) Necessitative deontic readings for *=kt*

- a. *wá'a'oxikanashe wáarakaweheto'sh*
 waa-o-xik=rash=E waa-ra-ka-weh=t=o'sh
 NOM-PV.IRR-be.bad=ATT=SV NEG-2A-INS.FRCE-pick=POT=IND.M
 'you should not pick the ones that are no good' (Hollow 1973a: 216)
- b. *híhé, mí'shak wawákereeheto'sh*
 híhé w'~ishak wa~wa-k-rEEh=t=o'sh
 well 1s-PRO AUG~1A-VERT-go.there=POT=IND.M
 'well, I should really go home' (Hollow 1973a: 217)

4 Verbal morphology

- c. *kúhki* *ní'o'na* *raróoraa*
 kuh=ki rj-o'=raq ra-roo=E=∅
 come.back.here=COND 2s-be=TOP 2A-talk=SV=CONT
namáakekto'sh
 ra-waqkE=kt=o'sh
 2A-lie=POT=IND.M
 'when she comes back, you are the one who should be talking' (Hollow 1973a: 221)
- d. *wáa'inak rá'tere*
 waa-irák r'-at=re
 NEG-again 2POSS-father=DEM.PROX
rapkáhütinisto'sh
 ra-k-pa-hüt=rit=t=o'sh
 2A-MID-INS.PUSH-make.up.with=2PL=POT=IND.M
 'you (pl.) should never make up with your father' (Hollow 1973a: 194)

As the data in (124a) show, when the potential enclitic is present, a negative enclitic can be omitted so long as the negative prefix is present. The potential very rarely appears in negated propositions.

4.3.2.5.1 Allomorph /=t/

Mandan is the only Siouan language that has reduced Proto-Siouan *ktE to a consonant cluster without a syllabic nucleus. We never see it appear in word-final position; there is always some other enclitic following it: e.g., indicative allocutionary markers. Furthermore, this enclitic becomes a simple /=t/ when cliticizing onto a stem that ends in a consonant that is not /?/. Coda glottal stops are treated as being part of the syllable nucleus, and thus do not count as a consonant for the purpose of consonant cluster reduction. We can see this allomorphy at work below.

(125) Examples of the allomorph =t

- a. *nukeréehki* *warárusto'sh*
 ru-k-rEEh=ki wa-ra-rut=t=o'sh
 1A.PL-VERT-go.there=COND UNSP-2A-eat=POT=IND.M
 'let's go home and then you will eat' (Hollow 1973a: 87)

4.3 Enclitic field

- b. *hiré nuxkq̫hinisto'sh*
hire r̫-kxq̫h=r̫t=t=o'sh
now 1A.PL-move=2PL=POT=IND.M
'we will take off now' (Hollow 1973b: 82)
- c. *máatki nuxkq̫hto'sh*
w̫aq̫tki r̫-kxq̫h=t=o'sh
tomorrow 1A.PL-move=POT=IND.M
'we will move tomorrow' (Hollow 1973b: 48)
- d. *sé waharáa minikú'ktō'sh*
se wa-hrE w-r̫-kú'=kt=o'sh
be.red 1A-CAUS 1A-2s-give=POT=IND.M
'I might make it red for you' (Hollow 1970: 454)

We can see in the data above that the potential modal enclitic is realized as *=t* instead of *=kt* when following a consonant-final stem. Again, the one exception to the rule that the *=t* allomorph occurs after a consonant-final stem is a stem that ends in a glottal stop, as glottal stops are not treated phonologically as a consonant. Such glottal stops are considered part of the syllable nucleus instead. We see this behavior in (125d), where the verb *kú'* 'give' is followed by *=kt* and not *=t*. Another tendency that the *=t* allomorph has is that it triggers lenition in /t/-final stems, turning /t/ to [s] to prevent a surface [tt] cluster. This process has been described previously in §3.5.1.

4.3.2.5.2 Allomorphs */=kte/* and */=te/*

The potential enclitic typically has the phonetic shape */=kt/* in Mandan, as discussed above. However, in certain constructions, we see remnants of the full Proto-Siouan **ktE*, where a vowel will appear only before one particular enclitic. The *=kte* allomorph is exclusively found before a single formative: the different-subject switch-reference marker *=ak*. A consonant-final stem should yield [=ak] for this marker, but what we see instead is [=k], the allomorph used with stems that end in short vowels, and we observe */=kte/* or */=te/* instead.

(126) Examples of the allomorph *=kte*

- a. *ímate ikxq̫hkere'sh*,
i-w̫-te i-kxq̫h=krE=o'sh
PV.INS-1s-stand PV.INS-laugh=3PL=IND.M

4 Verbal morphology

- ówaxohkerektek
 o-wa-xok=krE=kte=ak
 PV.LOC-1A-swallow=3PL=POT=DS
 'they made fun of me, so I will swallow them' (Hollow 1973a: 149)
- b. *mí'mami'hs* *kawásukhereki*,
 w'í-wq-wí'h=s ka-wa'-suk#hrE=ki
 1POSS-PV.INS-1s-robe=DEF INS.FRCE-INS.PRCE-be.rinsed#CAUS=COND
kishíktek...
 ki-shi=kte=ak
 MID-be.good=POT=DS
 'if my robe is rinsed, it must be all right...' (Hollow 1973a: 17)
- c. *hakték* *súhkereseet* *tamáah*
 ha=kte=ak suk=krE=s=ee=t ta-wqáh
 PROV=POT=DS child=3PL=DEF=DEM.DIST=LOC 3POSS.AL-arrow
tóps *ká'hereroomako'sh*
 top=s ka'#hrE=oowqák=o'sh
 four=DEF possess#CAUS-NARR-IND.M
 'so, he gave his four arrows to the children' (Hollow 1973a: 31)
- d. *q̥qwena wáá'omiktek* *íraseko'sh*,
 q̥we=rä waa-o-wík=te=ak i-ra-sek=o'sh
 all=TOP NOM-PV.IRR-be.none=POT=DS PV.INS-2A-make=IND.M
Kinúma'kshi
 ki-ruwqák#shi
 MID-man#be.good
 'everything you do will be nothing, Royal Chief' (Hollow 1973b: 47)

While /=kt/ is generally the expected reflex of Proto-Siouan *ktE, these data demonstrate that there is a small vestige of the fully-realized Proto-Siouan *ktE in Mandan when accompanied by the different-subject switch-reference marker. Furthermore, this =kte allomorph is realized as =te when cliticized onto a stem that ends in a consonant, as we see in (126d). It is unclear if the loss of /k/ in *ktE was a regular process in Proto-Siouan or a Mandan-only innovation.

4.3.2.5.3 Allomorph /=kti/

Like the allomorph =kte, we see additional evidence of residual retention of the ablaut vowel in *ktE into modern Mandan with =kti. Mandan only possesses two ablaut grades: the e-grade and a-grade. The Dakotan branch plus Biloxi have a

4.3 Enclitic field

third: the i/ɪ-grade. This third grade has a very limited distribution, with it being triggered by just the intensifier =*xti* in Biloxi and the future *ktA* and conjunction *na* 'and' in Dakotan (Jones 1983a: 29). One of the only relics of the i/ɪ-grade ablaut in Mandan appears in the allomorph =*kti*, which itself only occurs before the conditional complementizer =*ki*.

(127) Examples of the allomorph =*kti*

- a. ó'haraani *kishiniihktiki*, kóoxq'taanashini
 o'#=hrE=r̥i ki-shrii̥h=kti=ki, kooxq'tE=rash=r̥i
 be#=CAUS=SS MID-be.cold=POT=COND corn=ATT=SS
 wahúharaani má'kekereroomako'sh
 wa-hu#=hrE=r̥i wá'kE=krE=oowák=o'sh
 UNSP-be.many#CAUS=SS lie.AUX=3PL=NARR=IND.M
 'when it got cold from there, they had lots of corn and they were there'
 (Hollow 1973b: 91)
- b. *xamáhe* *nurúshektiki*,
 xwáh=E r̥u-ru-shE=kti=ki
 be.small=sv 1A.PL-INS.HAND-hold=POT=COND
 ihekka'sh
 i-hek=ka=o'sh
 PV.INS-know=HAB=IND.M
 'when we take a little, he always knows' (Hollow 1973b: 116)
- c. óparashtaa *ishqataa* nákini
 o-prash=taa ishqá=taa r̥ák=r̥i
 PV.IRR-be.pointed=LOC across=LOC SIT.POS=SS
 rokirúherektiki, *nuréehka'sh*
 ro-kru#=hrE=kti=ki r̥u-rEEh=ka=o'sh
 1S.PL-be.called#CAUS=POT=COND 1A.PL-go.there=HAB=IND.M
 'we always go when he calls us across the ridge there' (Hollow 1973b: 151)
- d. *wará're ikarexwaheréktiki*,
 wra'=E i-ka-rex#wa-hrE=kti=ki
 fire=SV PV.INS-INS.FRCE-glisten#1A-CAUS=POT=COND
 máamihka'sh
 waa-wík=ka=o'sh
 someone-be.none=HAB=IND.M
 'there was never anyone there when I lit the fire' (Hollow 1973b: 203)

4 Verbal morphology

Unlike *=kt* or *=kte*, *=kti* does not lose its /k/ when added onto a consonant-final stem, as we see in (127a), where the verb *kishiníih* ‘get cold’ ends in an /h/. We should expect to lose the /k/ to avoid a CCC cluster, like in (125a) through (125c) above, but that is not the case. It is not clear if this is a rule restricted to /hkt/ sequences being permissible, or if this is an example of hyperarticulation on the part of the consultant.

4.3.2.6 Indirect evidential enclitic: *=ootē*

Mandan has several evidentials that deal with marking first-hand versus second-hand knowledge. The indirect evidential *=ootē* marks a statement as being true through inference. Hollow (1970: 474) describes this as a perfective aspect marker, while Kennard (1936: 17) calls it both a completive or evidential marker. It is more appropriate to call this marker an evidential, as it conveys information that the speaker can infer to be the case. As such, the speaker has indirect knowledge of the event that has occurred, rather than direct, first-hand information. We can see this behavior for *=ootē* below.

(128) Examples of the indirect evidential enclitic *=ootē*

- a. *nú'kas* *má'kahootē*
r'-uqka=s *wq'kah=ootE*
 2POSS-male's.old brother=DEF lie.AUX.HAB=EVID
ípke'sh
 i-pke=o'sh
 PV.INS-smell=IND.M
 ‘it smells like your brother must be here’ (Hollow 1973a: 143)
- b. *téehqzte* *wahaná'rootē'sh*
teehq-xte *wa-hraq'=ootE=o'sh*
 be.far.away-AUG 1A-sleep=EVID=IND.M
 ‘I must have slept for a really long time’ (Hollow 1973a: 145)
- c. *“i'aakitaā* *áareehkererootā't* *érehini...*
i-aaki=taa *aa-rEEh=krE=ootE=a't* *e-reh=rj*
 PV.DIR-be.above=LOC PV.TR-go.there=3PL=EVID=HYP PV-think=ss
 ‘he thought “they must have taken him upward” and...’ (Hollow 1973a: 172)
- d. *órataxe* *érootē*, *húurqmi*,
o-ra-tax=E *E=ootE* *huu=awj*
 PV.IRR-INS.MTH-make.loud.noise=sv hear=EVID come.here=CONT

4.3 Enclitic field

<i>minsweeruts</i>	<i>híroomako'sh,</i>
<i>wrjs#ee#rut=s</i>	<i>hi=oowąk=o'sh</i>
horse#feces#eat=DEF	arrive.there=NARR=IND.M
<i>súhkereseetaa</i>	
<i>suk=krE=s=ee=taa</i>	
child=3PL=DEF=DEM.DIST=LOC	
'the dog must have heard their cries coming along to where the kids were' (Hollow 1973a: 180)	

No previous researcher notes that the final vowel in */ootE/* is an ablaut vowel, as it rarely precedes ablaut-inducing enclitics in the corpus. It appears to have evolved from the medial demonstrative *oo* plus the Proto-Siouan stem augment **-tE*. We can see in (128c) that the conditional complementizer *=q't* triggers ablaut. The deleted vowel from *=q't* leaves a glottal stop to constrict the ablaut vowel [a:] to [a] to avoid a tautosyllabic [a:?] sequence, but the final vowel in *=ootE* otherwise behaves as expected for an ablaut vowel. Another piece of evidence of this vowel being an ablaut vowel is the fact that there is a special allomorph of *=roote* that only appears when followed by the conditional *=ki*, making this another relic of *i*-grade ablaut from Proto-Siouan.

(129) Examples of the allomorph *=ooti*

- a. *manakú'rootiki, róowa'oshi hú*
w-rq-kú'=ooti=ki roo#wa-o-shi hú
1s-2A-give=EVID=COND speak#1A-PV.IRR-be.good many
íminirats óraka'ro'sh
i-w-rj-rat=ss o-ra-ka'=o'sh
PV.INS-1A-2S-promise=DEF PV.IRR-2A-possess=IND.M
'when you give it to me, you will have many promises that I made to you' (Hollow 1973a: 191)
- b. *míihootiki, rétaa miiptos*
wíjh=ooti=ki re=taa wíjpto=s
woman=EVID=COND DEM.PROX=LOC ball=DEF
rushékto'sh
ru-shE=kt=o'sh
INS.HAND-hold=POT=IND.M
'if it is a girl, I will take this ball right here' (Hollow 1973a: 86)

While most of the data above reflects an action that happened in the past, the completion of the action is not what is being accentuated, but rather that the

4 Verbal morphology

speaker is expressing that the event has apparently or seemingly happened. Often, this enclitic is translated as ‘must’ or ‘must have’ in the corpus, which reflects that the speaker is marking some inferential knowledge. This can also reflect first-hand information where the speaker is witnessing something or someone unexpectedly, as we can see below.

(130) Examples of marking unexpected events

- a. *ní'o'roote'sh*
ri-o'=ootE=o'sh
2s-be=EVID=IND.M
'it is you' (Delores Sand p.c.)
- b. *ní'o'roote're*
ri-o'=ootE=o're
2s-be=EVID=IND.F
'it is you' (Delores Sand p.c.)

The data above are a kind of greeting in Mandan, where the speaker is expressing that they can tell it is the listener that they are speaking to. It is not necessarily that they are surprised to see the speaker, but that they may not initially have been sure who it was going to be. A true mirative can be expressed with the *=oomak* enclitic, as described below.

4.3.2.7 Narrative evidential enclitic: *=oomak*

This enclitic has traditionally been referred to in Mandan literature as the narrative past marker by both [Kennard \(1936: 18\)](#) and [Hollow \(1970: 474\)](#). They both describe *=oomak* as being used to describe events in the distant past, and is seen extensively in traditional narratives. However, Mandan and most other Siouan languages are not truly tense-marking languages. As such, what this enclitic marks is that the speaker is privy to second- or third-hand knowledge of the event being described.

(131) Examples of the narrative evidential enclitic *=oomak*

- a. *Numá'k Máxana nírqmi i'kahekoomaksjh*
ruwá'k wáxra ríj=awí i'-ka-hek=oowák=sjh
man one walk=CONT PV.RFLX-INCP-know=NARR=INTS
'Lone Man suddenly became aware of himself while walking along'
([Hollow 1973a: 5](#))

4.3 Enclitic field

- b. *Numá'k Máxana éehehi Kinúma'kshi ikirookereroomako'sh, ruwá'k wáxrá ee-he=rj ki-ruwá'k#shi i-ki-roo=krE=oowák=o'sh man one PV-say=ss man#be.good MID-talk=3PL=NARR=IND.M kotewé óratoore ko-t-we o-ratoo=E REL-WH-INDF PV.IRR-be.mature=SV*
 ‘Lone Man and First Creator argued about which one was older’ (Hollow 1973a: 1)
- c. *Kawóoxohkas óti óo ka-wV-o-xok=ka=s o-ti oo AGT-UNSP-PV.LOC-swallow=HAB=DEF PV.LOC-dwell DEM.MID ó'roomaks o'=oowák=s be=NARR=DEF*
 ‘the Swaller’s house was there’ (Hollow 1973a: 170)
- d. *ú'taahaa kó'ts ú'=taa=haa ko-at=s be.close=LOC=INS 3POSS.PERS-father=DEF wáahaaxikereroomako'sh waa-hE=xi=krE=oowák=o'sh NEG-see=NEG=3PL=NARR=IND.M*
 ‘that way, they did not see their father’ (Hollow 1973a: 209)

This evidential never appears word-finally, but almost always has an allocutive agreement marker like *=o'sh*. More sparingly, we see the definite marker *=s* or the intensifying complementizer *=sijh* in sentence-final position to highlight the fact that while the information is hearsay, the speaker is putting some kind of credence in it. During a visit to Fort Berthold in the spring of 2016, I discussed this issue with Indrek Park (p.c.), who, in his time living in Twin Buttes and working with the Nueta Language Initiative, has noticed that there is a parallel between Mandan *=oomak* and the narrative evidential in Hidatsa *=waree*: both languages can also use this evidential as a mirative.

(132) Mirative use of *=oomak* in Mandan

- a. *ní'o'roomako'sh
 rj-o'=oowák=o'sh
 2s-be=NARR=IND.M
 ‘oh, it is you’ (Park p.c.)*

4 Verbal morphology

- b. *rahúuroomako'sh*
 ra-huu=oowąk=o'sh
 2A-come.here=NARR=IND.M
 'ah, you have come' (Park p.c.)
- (133) Mirative use of =*waree* in Hidatsa
- a. *niháariwareeg*
 n-ihaari=waree=g
 2A-finish=NARR=SS
 'oh, you made some!' (Park 2012: 256)
- b. *ée, miihacúudiriawareec*
 ee wii-hacuudi-ria=waree=c
 oh 1s-slit-RFLX=NARR=IND
 'oh, I've cut myself somehow' (Park 2012: 256)

Examples of how this one enclitic can have analogous functions appear above, where this enclitic in both languages conveys a sense of surprise or sudden realization. The difference between the indirect evidential =*oote* and the narrative =*oomak* seems to be slight in the data above. As we can see in Park's (2012: 256) dissertation, the narrative =*waree* in Hidatsa has a very similar distribution to the Mandan =*oomak*. This may be a case of parallel development in both languages, where a particular evidential marker is able to play different roles. Another possibility is that Hidatsa has influenced Mandan so that the narrative marker in Mandan has taken on a more Hidatsa-like distribution due to the fact that the overwhelming majority of L1 Mandan speakers over the past century have also grown up in households containing fluent Hidatsa speakers.

4.3.2.8 Dubitative modal enclitic: =*o'xere*

The dubitative modal enclitic =*o'xere* is first described in Kennard (1936: 19), where the enclitic is analyzed as a kind of conditional that expresses wonder or doubt about whether or how an action can be committed. These translations are often accompanied by 'would,' as in 'where would we get to?' seen below in (134a). Kennard also says that there is a shortened form of =*o'xere*, =*o'x*, and that it is much more common, but it does not appear at all in his own transcribed narratives or in the corpus in general. Hollow (1970: 460) analyzes this enclitic as an inchoative aspectual instead, stating that it conveys a sense of an action that is about to happen. Examples of =*o'xere* from the corpus appear in (134) below.

4.3 Enclitic field

(134) Examples of the dubitative modal enclitic =o'xere

- a. *nuhínito'xere'sha?*
 r̥-hi=r̥t=o'xrE=o'sha
 1A.PL-arrive.there=2PL=DUB=INT.M
 'where would we get to?' (Kennard 1936: 19)
- b. *ú'st ó'haraani wáara'xuure*
 ú't=t o'#hrE=r̥ waa-ra'=xuu=E
 be.in.past=LOC be#CAUS=SS NOM-INS.HEAT-be.charred=sv
túk hijikere'xere'sh; máamiko'sh
 tu=ak hij=krE=o'xrE=o'sh waa-wík=o'sh
 be.some=DS drink=3PL=DUB=IND.M PART-be.none=IND.M
 'long ago they could not drink any coffee; there was none' (Hollow 1973a: 204)
- c. *Numá'k Máxana ókapqte*
 ruwa'k w̥axraq o-ka-paq=E
 man one PV.IRR-INS.FRCE-cultivate=sv
íwarooro'xere'sh
 i-wa-roo=o'xrE=o'sh
 PV.INS-1A-speak=DUB=IND.M
 'I am going to talk about Lone Man's origin' (Hollow 1973a: 5)
- d. *tashá waheréki wawáruto'xara'shka*
 tashka wa-hrE=ki wa-wa-rut=o'xrE=a'shka
 how 1A-CAUS=COND UNSP-1A-eat=DUB=PSBL
 'how can I go about eating one of those?' (Hollow 1973b: 32)
- e. *inák wiráse ítqqhqq tú*
 iraq wi-ras=E i-taq=häq tu
 another 1POSS-name=sv PV.INS-be.different=INS be.some
ó'xere'sh
 o'xrE=o'sh
 DUB=IND.M
 'I do not have another different name' (Hollow 1973a: 14)
- f. *rá'te túki ré'esh númi*
 r'-at=E tu=ki re-esh r̥=awí
 2POSS-father=sv be.some=COND DEM.PROX-SMLT 1A.PL=CONT

4 Verbal morphology

ó'xere'sh
o'xrE=o'sh
DUB=IND.M

'if you had a father, we would not be this way' (Hollow 1973a: 114)

In all the data above, the speaker is conveying a sense of doubt or wonder over whether the action can happen or could have happened. (Hollow 1970: 460) notes that *=o'xere* never co-occurs with the indirect evidential enclitic *=oote*, which likely stems from the fact that the former seems to indicate a lack of certainty to whether an action took place versus the latter seeming to mark that the speaker can infer that the action did happen. As such, there is some conjectural presupposition conveyed by both *=o'xere* and *=oote*, though *=oote* comes with a sense of certainty on the part of the speaker, while *=o'xere* does not.

Like several other modal and aspectual enclitics, there is a free form of the dubitative modal enclitic, as seen in (134e) and (134f). The enclitic itself seems to be composed of the verb *ó* 'be' plus */xrE/*. This second element resembles *xeré* 'be safe, out of danger,' which can be used peripherastically to modify a verb, as shown below.

- (135) Periphrastic use of *xeré* 'be safe'

tashkáharaa *ríikirukxqh*
tashka#hrE=Ø *rV-i-k-ru-kxah*
 how#CAUS=CONT 1A.PL-PV.INS-RFLX-INS.HAND-move
óxere'sha?
o-xrE=o'sha
PV.IRR-be.safe=INT.M
 'how else could we cross [the river] safely?' (Hollow 1973b: 269)

It is possible that this verb could have served to introduce dubitative propositions peripherastically in Mandan, and this construction gradually became associated more closely with the verb it modified until it became an enclitic associated with the copula *ó*, which is a common element in many enclitics associated with complementizers. This evolution from lexical verb to modal enclitic is likely how Mandan has acquired much of its rich enclitic field.

4.3.2.9 Attitudinal evidential enclitic: *=nash*

The attitudinal evidential enclitic *=nash* is one of the most common enclitics seen in the corpus. It has posed a challenge to past scholars in that its meaning is not

4.3 Enclitic field

easy to explain. Kennard (1936: 23) states that *=nash* adds a quality of vagueness to a stem, while Hollow (1970: 467) calls *=nash* a typifier, in that it indicates similarity with the named object, state, or action. Mixco (1997a: 35) describes this enclitic as an attitudinal marker, reflecting the attenuated force of the speaker's statements as merely speculative opinion. The work herein adheres to Mixco's terminology, as this enclitic does reflect some aspect of the speaker's attitude towards a proposition.

(136) Examples of the attitudinal evidential enclitic *=nash*

- a. *Kinúma'kshi* *éeheni* *Numá'k Máxana*
 ki-ruwɑ'k ee-he=rj̃ ruwɑ'k wɑxraq
 MID-man#be.good PV-say=ss man one
íwahékanashe *wakína'ni* *éewereho'sh*
 i-wa-hek=rash=E wa-kirɑ'=rj̃ ee-w-reh=o'sh
 PV.INS-1A-know=ATT=SV 1A-tell=ss PV-1A-think=IND.M
 'I want to tell about what I sort of know about First Creator and Lone
 Man' (Hollow 1973a: 1)
- b. *ú'st* *ówatik* *wáanixikanasho'sh*
 ú't=t o-wa-ti=ak waa-rj̃-xik=rash=o'sh
 be.in.past=LOC PV.IRR-1A-arrive.there=DS NOM-2s-be.bad=ATT=IND.M
 'I would have gotten there a long time ago and you are kind of bad at
 this' (Hollow 1973a: 152)
- c. *máakahoomaksjh*, *súk* *óhekxikanashkeres*
 wąqkah=oowąqk=sjh suk o-hek#xik=rash=krE=s
 lie.AUX.HAB=NARR=INTS child PV.IRR-know#be.bad=ATT=3PL=DEF
ú'shka *máakah*
 ú'sh=ka wąqkah
 be.thus=HAB lie.AUX.HAB
 'they were living there, those poor children were living so' (Hollow
 1973a: 203)
- d. *mamáhenashinista!*
 wą~wą-hE=rash=rj̃t=ta
 AUG~1s-see=ATT=2PL=IMP.M
 'you all have got to try to see for me' (Hollow 1973a: 35)
- e. *karóotiki* *kinúuxik* *túnashoomako'sh*
 ka=ooti=ki ki-ruxwik tu=rash=oowąk=o'sh
 PROV=EVID=COND SUUS-ghost be.some=ATT=NARR=IND.M
 'then he got kind of scared' (Hollow 1973b: 71)

4 Verbal morphology

- f. *maxópininashishi'sh*

wə-xopri=raqsh=ishi=o'sh

UNSP-be.holy=ATT=VIS=IND.M

'he must be kind of holy' (Hollow 1973b: 313)

- g. *péehanashtiki*, *qqwe óshiriihāa*

peeh=raqsh=ti=ki qaqwe o-shriih=E=Ø

be.high=ATT=POT=COND all PV.IRR-be.scattered=sv=CONT

íkiruxkekerekaroomako'sh

i-k-ru-xke=krE=ka=oowąk=o'sh

PV.INS-MID-INS.HAND-pluck=3PL=HAB=NARR=IND.M

'whenever he hollered, everyone would pull back and scatter' (Hollow 1973a: 45)

Evidentials may be used to specify the degree of precision or the degree of truth that a speaker wishes to bestow upon an utterance, in particular, that the speaker is unsure about the veracity of an utterance, wishes to hedge the precision or truth of an utterance, or simply because the speaker does not have a more precise way to articulating their point (Mithun 1986: 90, Aikhenvald 2005: 3). It is this use that =*nash* fills: it expresses some aspect of the speaker's attitude regarding how precise or how true the statement is. What is noteworthy about this evidential is that it can co-occur with other evidentials, as we see in (136e) and (136f) above. In (136e), the narrative evidential notes how the speaker came by the information (i.e., through hearsay or having heard it before), but the attitudinal questions how precise or sure they are about the proposition at hand. Similarly, in (136f), the visual evidential =*ishi* shows that the speaker can visually infer that the event has happened, but the =*nash* hedges whether the speaker believes how accurate or appropriate what is being said is. As such, this double evidential marking in Mandan is not contradictory: one evidential serves to inform how the speaker knows about the proposition, while =*nash* serves to deprecate or downplay some aspect of the proposition.

Both Crow and Hidatsa share cognates with Mandan =*nash*, where the approximative =*aachí* in Crow marks similarity or conveys a sense of 'kind of, sort of, like' to the affected verb or noun (Graczyk 2007: 44), while the compromise =*raci* in Hidatsa has a nearly identical usage as the attitudinal in Mandan. All these forms seem to be composed of Proto-Siouan *yą-se, where *yą is a topic marker or distal demonstrative pronoun and *se, which marks similarity. In both Mandan and Hidatsa, this enclitic is found often in casual conversations, and—at least in Mandan—is often chided as being informal or "slangy." Some speakers are

4.3 Enclitic field

more prone to use =*nash* more often than others, so its usage is highly subject to personal speech style rather than a language-wide tendency. The attitudinal =*nash* also serves to widen the category of a noun. Examples of =*nash* with nouns from the corpus appear below.

- (137) Use of =*nash* to extend the class of nouns

- a. *wáa'okṣhanash*
waa-o-kṣh=rash
NOM-PV.IRR-worry=ATT
'sneaky kinds of things' (Hollow 1973a: 80)
- b. *mashkáshkapkanashini* *katékanashini* *rúta*
wá-shka~shkap=ka=rash=rí katek=rash=rí rut=E=Ø
UNSP-DIST~prick=HAB=ATT=ss chokecherry=ATT=ss eat=sv=CONT
máakahoomako'sh
wáqkah=oowáqk=o'sh
lie.AUX.HAB=NARR=IND.M
'they had been eating rosehips and thing like that, and chokecherries and things like that' (Hollow 1973b: 279)
- c. *kóonashe*
koo=rash=E
squash=ATT=SV
'squash and things like that' (Hollow 1970: 467)
- d. *minísanashe*
wríš=rash=E
squash=ATT=SV
'horses and things like that' (Hollow 1970: 467)
- e. *makxéxanashini...*
wá-kxek=rash=rí
UNSP-throw.out=ATT=SS
'trash and stuff and...' (Hollow 1973a: 110)

This enclitic does not trigger ablaut, despite the fact it contains a nasal element. The reason why is not clear, especially since it seems to be an older element that is shared between Mandan and Crow-Hidatsa.

4.3.2.10 Definite evidential enclitic: =s

Previous works on Mandan have referred to =s as a preterite marker (Kennard 1936, Hollow 1970). Much of the discussion in this part of the chapter has dealt

4 Verbal morphology

with why Mandan is not a tense-marking language. Given that *=s* does not mark tense, it must have a different function.

The definite article in Mandan is *=s*, and is homophonous with the verbal enclitic. This homophony is not coincidental, as *=s* marks that the speaker is certain that an event has happened. As such, this enclitic marks definiteness on both nouns and verbs. We can see examples of this distribution of *=s* in the data in (138) below.

(138) Examples of the definite evidential enclitic *=s*

- a. *miníuke* “*riréesike* *manakú’ki*”
wi-rijk=E *ri-reesik=E* *w-rq-kú’=ki*
 1POSS-son=SV 2POSS-tongue=SV 1s-2A-give=COND
éepeso’sh
ee-w-he=s=o’sh
PV-1A-say=DEF=IND.M
 ‘my son, I said “will you give me your tongue?”’ (Hollow 1973a: 190)
- b. *Kinúma’kshiseena* *Numá’k Máxanas*
ki-ruwá’k#shi=s=ee=rá *ruwá’k wáxrá=s*
 MID-man#be.good=DEF=DEM.DIST=TOP man one=DEF
pahúhanashoomaks
pa-huh=rash=oowák=s
INS.PUSH-be.ahead=ATT=NARR=DEF
 ‘Old Man Coyote got ahead of Lone Man’ (Hollow 1973a: 9)
- c. *na’é*, *éexi wáarahere* *túso’re*
rá’e *eexi waa-ra-hrE* *tu=s=o’re*
 mother.voc belly NOM-2A-CAUS be.some=DEF=IND.F
 ‘mother, there is some paunch for you to eat’ (Hollow 1973a: 72)
- d. *waxtáani* *óxkqhe* *warúutekereso’sh*
wa-xtE=rj *o-xkáh=E* *wa-ruutE=krE=s=o’sh*
 UNSP-be.big=SS PV.IRR-move=SV UNSP-eat=3PL=DEF=IND.M
 ‘the travelers were really hungry’ (Hollow 1973b: 80)
- e. *wáa’qqwe minikú’kaso’sh*
waa-qáwe w-ri-kú’=ka=s=o’sh
 NOM-all 1A-2s-give=HAB=DEF=IND.M
 ‘I always give everything to you’ (Hollow 1973b: 98)

4.3 Enclitic field

- f. *reeharaana, irahekso're*
 rEEh#hrE=rq i-ra-hek=s=o're
 go.there#CAUS=IMP.F PV.INS-2A-know=DEF=IND.F
 'go ahead, you know how to do it' (Hollow 1973b: 181)

In all the examples above, the *=s* serves to emphasize an action that the speaker knows has happened. In the case of (138b), the presence of the narrative and the definite together indicate that, although the speaker heard that it happened that way from another source, the speaker can attest that it definitely happened that way. Similarly, in (138c), there is no past tense reading, and the speaker is informing their mother that something is indeed the case. The same reading is present in (138f), where the speaker is exhorting another person to do something that they know how to do, and that the speaker knows they know how to do.

It is true that this enclitic often appears on propositions that take place in the past, but that is also a side effect of the corpus consisting mostly of traditional Mandan narratives about cultural figures and their past deeds. When present in quoted speech, *=s* can be used for events in any time setting, provided that the speaker is certain about the truth value of what they are saying.

Mandan shares this definite marker with Crow *=sh* (Graczyk 2007: 156), and with Hidatsa *=sh* (Park 2012: 530). In Crow and Hidatsa, this definite marker can likewise be seen on definite events that have taken place in the past, similar to its use in Mandan, though *=sh* seems to imply some sequential relationship where the definite event has finished and a subsequent event begins. However, this enclitic is not required to give a past reading, *per se*, but indicates an event has completed or will be completed. In Mandan, this perfective reading is not inherent, as it serves mostly to emphasize how certain the speaker is of the veracity of an utterance.

4.3.3 Number enclitics

All Siouan languages have suffixes or enclitics to distinguish a singular subject from a plural subject (Parks & Rankin 2001: 106). Mandan is the only Siouan language besides Catawba to have dedicated postverbal marking for plural subjects and plural objects. Plural marking in Mandan for subjects and objects does not depend on what semantic role that argument plays in a proposition, but rather how that argument is involved in the discourse.

- (139) Plural enclitics in Mandan
 /=rit/ second person plural
 /=krE/ third person plural

4 Verbal morphology

These enclitics are explained in greater detail in the subsections below.

4.3.3.1 Second person plural: *=nit*

Whenever a second person plural argument is involved, the enclitic *=nit* appears on the verb. In addition to marking plurality for second person arguments, *=nit* is also used for first person plural marking. This behavior is due to the fact that the first person plural typically has an inclusive reading, and thus when the first person plural is used, a second person argument is also involved in the proposition by virtue of being grouped with the first person argument. Given this distribution, this enclitic marks plurality for speech act participants (i.e., both first person and second person arguments) rather than just for second person arguments.

Because this enclitic has historically been referred to as the second person plural marker, I continue to refer to it by this nomenclature, though the fact that I call it a second person plural marker should not be confused with the fact that it really is a speech act participant plural marker. We can see the behavior of this enclitic in the data below, where *=nit* appears with both first person plural arguments and second person plural arguments, regardless of what role said arguments play in a clause: i.e., agent or non-agent.

(140) Examples of the second person plural enclitic *=nit*

- a. *súkinite*, *matewé* *írasekinito'sha?*
suk=rít=E *wa-t-we* *i-ra-sek=rít=o'sha*
child=2PL=SV UNSP-WH-INDF PV.INS-2A-make=2PL=INT.M
'children, what are you all doing?' (Hollow 1973a: 28)
- b. *ósh*, *téehq* *óminitaa* *wamáakahinito'sh*
o'sh *teehq* *o-w-rít-taa* *wa-wáqkah=rít=o'sh*
ind.m be.far.away PV.LOC-1A-2s-be.with 1A-lie.AUX.HAB=2PL=IND.M
'gosh, I have been staying with you all for a long time' (Hollow 1973a: 31)
- c. *íshkanashaa* *írawaxaani*
i-shka=rásh=E=Ø *i-ra-waxE=rít*
PV.INS-be.a.while=ATT=SV=CONT PV.INS-2A-stop=ss
ranúunihinitki *tóopa ná'hki*
ra-ruurít=ki *toopa rä'k=ki*
2A-be.there.PL.DUR.AUX=2PL=COND four SIT.POS=COND

4.3 Enclitic field

4 Verbal morphology

When *=nit* appears, it is typically as a subject plural. Marking object plurality in Mandan is optional, so *=nit* appears to mark objects only sparingly. Since both first and second persons compete for the same marker, it can be unclear in isolation whether the *=nit* pluralizes the first or the second person argument in a proposition. We can see this ambiguity in (140h), where it is not immediately clear whether there is a singular second person acting upon more than two first persons, or if there are more than on second persons acting upon a pair of first persons.

Mandan distinguishes between first person plural and first person dual like other Siouan languages with dedicated first person plural prefixes, such as Lakota (Ullrich 2011: 761). In the same manner as other Siouan languages, this distinction is realized by first person plural bearing postverbal plural marking along with the first person plural prefix, while first person dual involves only the first person plural prefix and no additional marking following the verb. However, plurality is generally only marked on matrix verbs, so in situations where multiple clauses are chained together within the same sentence, only the matrix verb will bear *=nit*. This lack of plural marking on those verbs do not mark them as being dual rather than plural.

We can see examples of this dual marking below in (141), where the lack of *=nit* reflects the presence of a first person dual argument. Such arguments are typically interpreted as being inclusive in nature: i.e., the other speech act participant is also the addressee.

(141) Examples of dual marking without *=nit*

- a. *máahsi* *iip* *nutáshika'sh*
wáah#si *iip* *rú-ta-shi=ka=o'sh*
 arrow#feather tail.feather 1A.PL-AL-be.good=HAB=IND.M
 'we (du.) always like eagle tail feathers' (Hollow 1973a: 215)
- b. *nukípiiro'sh*, *nutápqqxe*
rú-ki-pii=o'sh *rú-ta-páqxE*
 1A.PL-SUUS-devour=IND.M 1A.PL-AL-potato
 'we (du.) at our potatoes up' (Hollow 1973a: 55)
- c. *na'é* *réehrohereso'sh*
ra'e *rEEh#ro-hrE=s=o'sh*
 mother.voc go.there#1S.PL-CAUS=DEF=IND.M
 'mother told us (du.) to go' (Hollow 1973a: 166)

In each of the sentences above, there is a first person dual subject or object, and the only morphological indication that the number is not plural is the lack of *=nit*.

4.3 Enclitic field

In many situations, it is not possible glean whether the first person argument is plural or dual when it is not a subject. Mandan often relies on context to fill in those kinds of details, and the language likewise relies heavily upon *pro*-dropping arguments, so listeners must be active to ascertain who is doing what to whom, or speakers must rely on their familiarity with traditional narratives to fill in gaps the speaker is leaving by omitting arguments.

Mandan is the only Siouan language to have a dedicated speech act participant plural marker. This enclitic likely developed from the Proto-Siouan second person stative marker **yi*-, which became duplicated as a postverbal element that combined with the Proto-Siouan stem augment *-tE. The presence of the stem augment suggests that a Pre-Mandan ***ri*tE may have been an unbound element at some point in its development before becoming reanalyzed as an enclitic. The second person plural marker is an ablaut-triggering enclitic, likely stemming from the fact it contains a nasal vowel.

4.3.3.2 Third person plural: =*kere*

The most common manifestation of plurality in the corpus is the third person plural marker =*kere* /=krE/. It has several cognates across the Siouan language family: Hoocąk uses /-ire/ to mark plurals for third person subjects (Lipkind 1945: 6), and Tutelo uses =*hele* /=hlE/ (Oliverio 1997: 41). The Catawban third person plural subject suffix -?i may also be a cognate, since certain verb paradigms have a -*hi* instead (Rudes 2007: 42). This variant suggests that Proto-Siouan could have had **hir*E as a third person plural marker, though the /k/ in Mandan is unexplained. Another possibility is that the *suus* marker **ki*- could have become associated with the **hir*E third person plural at some point in Pre-Mandan. Before stems beginning with sonorants or *h, the *suus* marker tended to syncopate the *i, becoming *k-, a tendency preserved in modern Mandan. Proto-Siouan *k, *kh, and *hk all collapsed into /k/ in Mandan, and short vowels tended to syncopate before a sonorant, so we could achieve the modern Mandan form if this enclitic underwent the following steps:

(142) Possible evolution of =*kere*

ki*-*hir*E > **k-*hir*E > *k-*hr*E > ****k-*r*E > =*kere* /=krE/

There is no posited third person plural marker in Rankin et al. (2015), but the presence of cognates across the Siouan language family suggests that Proto-Siouan had a dedicated third person plural marker. Alternatively, there was some

4 Verbal morphology

kind of periphrastic construction that expressed a third person subject in Proto-Siouan. In Mandan, this enclitic is used to mark both subjects and objects that are not speech act participants.

(143) Examples of third person plural enclitic =*kere*

- a. *kirusanáhanashini* réehkereroomaks
k-ru-srāh=rāsh=r̥j rEEh=krE=oowąk=s
RFLX-INS.HAND-abandon=ATT=ss go.there=3PL=NARR=IND.M
'they parted ways and went' (Hollow 1973a: 9)
- b. *kíihikaraani náakus* ikirookereroomako'sh
kiihi=krE=r̥j rąqku=s i-ki-roo=krE=oowąk=o'sh
meet=3PL=ss road=DEF PV.INS-REFLX-speak=3PL=NARR=IND.M
'they met and argued about the road' (Hollow 1973a: 24)
- c. *numá'kaaki ísek* áqwe kí'hkere'sh
ruwą'k-aaki i-sek áqwe kí'k=krE=o'sh
man-COLL PV.INS-make all finish=3PL=IND.M
'they were all finished making people' (Hollow 1973a: 13)
- d. *káni súhkeres* istámi kirúshaani
ka=r̥j suk=krE=s ista#wi ki-ru-shE=r̥j
PROV=ss child=3PL=DEF face#orb SUUS-INS.HAND-hold=ss
ímanastaa ikü'tekereroomako'sh
i-wrą=s=taa i-kü'tE=krE=oowąk=o'sh
PV.DIR-tree=DEF=LOC PV.DIR-throw=3PL=NARR=IND.M
'and then, the children took their eyes and threw them toward the tree' (Hollow 1973a: 29)
- e. *í'üqtahqkt* ikü'tekereroomako'sh
i-üqtahqk=t i-kü'tE=krE=oowąk=o'sh
PV.DIR-east=LOC PV.DIR-throw=3PL=NARR=IND.M
'he threw them to the east' (Hollow 1973a: 13)
- f. *wáarakaakirikaraanitinxo'sh*
waa-ra-k-aa-kri=krE=r̥j=r̥x=o'sh
NEG-2A-VERT-PV.TR-arrive.back.here=3PL=2PL=NEG=IND.M
'you did not arrive back here with them having started out with them'
(Hollow 1970: 447)

We see =*kere* used as an object marker in (143e) and (143f), but it is more common to omit the =*kere* when not used to mark a subject. Context plays a large

4.3 Enclitic field

role in how *=kere* is interpreted, as both (143d) and (143e) feature the same verb *ik̥'tekereroomako'sh*, where the meaning of the verb can be ‘they threw it,’ ‘they threw them,’ ‘he threw them,’ etc. The meaning is apparent when contextualized within the discourse, but separately, the dual use as subject and object plural marker can create ambiguous statements.

When not used in matrix clauses, there is a strong tendency to omit *=kere*, as we see in (143a) where both verbs involve the same subjects, but only the matrix verb is marked with *=kere*. When switch-reference markers are involved, there are far more instances of verbs without *=kere* than there are verbs that include third person plural marking. Again, much of the informational load is left to context within the discourse.

4.3.4 Negative enclitics: *=nix* and *=xi*

Negation in Mandan involves multiple exponents. As discussed in §4.1.2.5, the negative inflectional prefix *waa-* appears on a negated verb. In addition to that negation prefix, there are two different negation enclitics that must be used in Mandan: *=nix* and *=xi*. Both of these enclitics comes from Proto-Siouan negation markers. The Proto-Siouan negation enclitic is reconstructed as **-aši*, with the intial vowel become reanalyzed as part of the stem in many modern Siouan languages, where it triggers ablaut (Rankin et al. 2015).

Proto-Siouan and most modern Siouan languages have a fricative sound symbolism where an action or state can be increased or diminished depending on which fricative is used: e.g., *siire* ‘yellow,’ *shíire* ‘tawny,’ *xiire* ‘brown’ in Mandan (cf. §3.7). The enclitic *=xi* is an x-grade reflex of **-aši*. The enclitic *=nix* is actually a combination of a different Proto-Siouan negative marker, **-ri*, plus another negative marker, **-axi*: i.e., **-ri-aši* > ***-ri-xi* > *=nix*. The distribution of each of these enclitics appears below.

4.3.4.1 Allomorph */=ri_x/*

Kennard (1936: 23) states that *=nix* appears on any consonant-final stem, as well as on any vowel-final stem ending in a non-high vowel. Hollow (1970: 31) states that *=nix* is only for consonant-final stems. The distribution observed in the corpus is that *=nix* actually appears on any stem that does not end in a short vowel. Hollow analyzes all underlying heavy open syllables as having a /r/ at the end because he does not perceive the difference between long and short vowels, where [r] only arises through epenthesis at an enclitic boundary involving an open

4 Verbal morphology

heavy syllable.¹⁸ We can see this behavior for *=nix* below.

(144) Examples of the negative enclitic *=nix*

- a. *tí áakit ó'haraani háa náakaa*
 ti aaki=t o' #hrE=rí hE rąqkE=Ø
 dwell be.on.top=LOC be#CAUS=ss see sit.AUX=CONT
wáa'ootinixoomako'sh
 waa-oot=ríx=oowąk=o'sh
 NEG-mix=NEG=NARR=IND.M
 'looking from on top of the house, she was not in it' (Hollow 1973a: 126)
- b. *kotámiihseená inák miní hú*
 ko-ta-wíjh=s=ee=rąq irąk wrí hú
 3POSS.PERS-AL-male's.sister=DEF=DEM.DIST=TOP again water be.many
áaki'hini wáasukinixkereroomako'sh
 aa-ki'h=rí waa-suk=ríx=krE=oowąk=o'sh
 PV.TR-arrive.back.here=SS NEG-exit=NEG=3PL=NARR=IND.M
 'his sister also brought a lot of water and they did not go out' (Hollow 1973a: 200)
- c. *kowóorooxikanash ée wáá'o'nixishi're*
 ko-wooroo#xik=rąsh ee waa-o'=ríx=ishi=o're
 3POSS.PERS-husband#be.bad=ATT DEM.DIST NEG-be=NEG=VIS=IND.F
 'that one must not be her no-good husband' (Hollow 1973a: 133)
- d. *wáaku'nixishiso'sh*
 waa-kú'=ríx=ishi=s=o'sh
 NEG-give=NEG=VIS=DEF=IND.M
 'I knew he did not give it to him' (Hollow 1970: 441)
- e. *kashká'nik, wáateenixkaroomako'sh*
 ka=shka'rík waa-tee=ríx=ka=oowąk=o'sh
 PROV=DISJ NEG-die=NEG=HAB=NARR=IND.M
 'however, she would never die' (Hollow 1973b: 287)
- f. *máaminihijinixo'sh*
 waa-wrí#híj=ríx=o'sh
 NEG-water#drink=NEG=IND.M
 'he fasts [lit. he does not drink water]' (Hollow 1970: 303)

¹⁸Refer back to §3.6.1.2 for more discussion about why Hollow (1970) hypothesized stem-final /t/ and why that analysis does not hold.

4.3 Enclitic field

When it comes to determining whether to use *=nix* or *=xi*, *=nix* has a wider distribution: it appears after consonant-final stems, long vowel-final stems, and glottal stop-final stems. Of the two realizations of negativity in the enclitic field, *=nix* is the default negative enclitic in Mandan.

4.3.4.2 Allomorph */=xi/*

As discussed above, *=nix* is used in nearly every context to express negation on a proposition except for when a stem ends in a short vowel. This fact is somewhat obscured by the fact that both *=nit* and *=xi* are ablaut-triggering enclitics. We can see this behavior in the data below for those speakers whose Mandan treat negation as an ablaut-triggering process. Of Hollow's (1970) two main consultants, Mrs. Annie Eagle consistently ablauts /E/ and /EE/ before a negative enclitic, but Mrs. Otter Sage does not. This was previously discussed in §3.5.3.1. The data included below is restricted to examples that feature ablaut, as that is more common throughout the corpus across a greater amount of speakers.¹⁹

(145) Examples of the negative enclitic *=xi*

- a. *wáa'etaa* *ná'kak* *wáawahixi'sh*
waa-ee=taa *ra'k=ak* *waa-wa-hi=xi=o'sh*
NOM-be.far.off=LOC POS.SIT=DS NEG-1A-arrive.there=NEG=IND.M
'because he was sitting far off, I did not get there' (Hollow 1973b: 10)
- b. *wáaroskaaxi* *áakit* *ó'haraani*
waa-roskE=xi *aaki=t* *o'#hrE=rj*
NEG-jump.down=NEG be.on.top=LOC be#CAUS=SS
hq̥qkeroomako'sh
hq̥qkE=oowq̥k=o'sh
be.standing.AUX=NARR=IND.M
'he did not come down from on top of there and stayed there' (Hollow 1973b: 143)
- c. *nitámi'tis* *wáateehqxi'sh*
ri-ta-wi'#ti=s *waa-teehq=xi=o'sh*
2POSS-AL-stone#dwell=DEF NEG-be.far=NEG=IND.M
'your village is not far' (Hollow 1973b: 29)

¹⁹This omission of non-ablauting *=xi* data does not signify that there is anything incorrect about not ablauting before a negative enclitic, but it is unclear whether this lack of ablaut is due to idiolectal, familiolectal, or dialectal differences.

4 Verbal morphology

- d. *Kinúma'kshis* *shí máa'qke*
 ki-ruwɑ'k#shi=s shi waa'qk=E
 MID-man#be.good=DEF foot earth=sv
 wáahixiroomako'sh
 waa-hi=xi=oowąk=o'sh
 NEG-arrive.there=NEG=NARR=IND.M
 ‘Old Man Coyote’s feet did not touch the ground’ (Hollow 1973b: 49)
- e. *mi'shak maná'teki*, *wá'a'oraxaraaxi'sh*
 w'~ishak wa-rą'tE=ki waa-o-ra-xrE=xi=o'sh
 1s-PRO 1A-stand.up=COND NEG-PV.IRR-be.safe=NEG=IND.M
 ‘if I get up, you are not going to live’ (Hollow 1973b: 123)
- f. *wáa, ní'o'na* *máanitashixi* *á'shka?*
 waa rj-o'=rą waa-rj-ta-shi=xi a'shka
 uh 2s-be=TOP NEG 2POSS-AL-be.good=NEG PSBL
 ‘uh, was it you who did not like him?’ (Hollow 1973b: 237)

Because of its status as an ablaut-triggering enclitic, =xi often appears after phonetically long vowels despite the fact that it targets stems with underlyingly short vowels. Once a vowel ablauts, we do not see a switch from =xi to =nit instead. Mixco (1997a: 37) is the first scholar to suspect some connection between vowel lengthening and =xi, though he did not ascribe this lengthening to ablaut alone, which is the case.

4.3.5 Complementizer enclitics

Mandan typically requires that some element fill the complementizer spot within a syntactic structure for a complete utterance. I argue in Kasak (2019: 305) that Mandan has some kind of FILL C requirement, which accounts for the large amount of complementizer-level morphology by requiring that all clauses bear some kind of complementizer morphology. The lack of a complementizer can often signal false starts, shifts in the discourse, or that they have uttered some kind of sentence fragment. Detaching this work from a theoretical working model of the development of enclitic morphology in Mandan, we can at least note that the large amount of material that must appear in clause-final position strongly suggests that there was an emphasis placed in Pre-Mandan on ensuring that certain information was encoded into the structure of a sentence through overt morphology: e.g., indicating whether an utterance is a statement or a question, or whether a clause was a matrix clause or an adjunct clause, and so on and so forth.

4.3 *Enclitic field*

Furthermore, previous stages of Mandan must have had a similar requirement to shift information-carrying morphological items to the right edge of the clause, as we see vestiges of auxiliary verbs that have moved to superordinate positions within the clausal domain, creating ample space between the root verb and the complementizer to allow for numerous aspectual and other enclitics to develop. The evolution of these enclitics is explained below where a plausible account of their connection to Proto-Siouan or comparative Siouan morphology exists.

This requirement to have some element in the clause-final complementizer position also helps explain the distribution of the stem vowel /=E/, which [Kennard \(1936: 26\)](#) incorrectly calls an indefinite article and which ([Hollow 1970: 39](#)) deems to be a meaningless element that is purely optional. Under the analysis in [Kasak \(2019\)](#), this complementizer, and the other listed below, are certainly not optional.

The most common complementizers that appear in the corpus and in conversational Mandan involve allocutive agreement (i.e., marking agreement with the sex of the listener) or switch-reference marking (i.e., marking the clause as having the same or different subjects as the one that follows). Other complementizers exist, including those that carry some kind of aspectual or modal reading. Several complementizers here are only sparsely attested in the corpus, as they are more typically found in conversational speech and not in the kind of linguistic data that is found in the kind of register that comprises most of the corpus: i.e., narrative discourse. A list of the complementizers observed in the corpus and discussed within this chapter appears in (146) below.

(146) List of complementizer enclitics in Mandan

4 Verbal morphology

/=ak/	different-subject switch-reference marker (DS)
/=aq't/	hypothetical mood complementizer (HYP)
/=E/	stem vowel (SV)
/=haa/	simultaneous aspectual complementizer (SIM)
/=hak/	politeness marker (POL)
/=ki/	conditional complementizer (COND)
/=o'ra/	female-addressee interrogative marker (INT.M)
/=o're/	female-addressee indicative marker (IND.F)
/=o'sh/	male-addressee indicative marker (IND.M)
/=o'sha/	male-addressee interrogative marker (INT.M)
/=ra/	female-addressee imperative enclitic (IMP.F)
/=ri/	same-subject switch-reference marker (SS)
/=rik/	iterative aspectual complementizer (ITER)
/=rik'ku'k/	incredulitive complementizer (INCD)
/=shka'rik/	disjunctive complementizer (DISJ)
/=sjh/	intensive indicative complementizer (INTS)
/=so'rik/	causational complementizer (COMP.CAUS)
/=ta/	male-addressee imperative marker (IMP.M)

Most of the complementizers that appear in (146) are relatively rare in the corpus. Most clause-final marking contains switch-reference markers or allocutive agreement markers. As such, some of these complementizers have very few examples compared to others.

4.3.5.1 Allocutive agreement markers

Almost every sentence in Mandan requires that the sentence end with an allocutive agreement marker. The term “allocutive” was coined by Prince Bonaparte (1862: 19) to describe the kind of agreement in Basque that marked the sex or social status of the listener. One major distinction between the allocutive agreement in Mandan versus other Siouan languages is that Mandan uses allocutivity to agree with the sex of the listener, while other Siouan languages agree with the sex of the speaker. Most sentences are ungrammatical if there is no allocutive agreement marker on the matrix verb. We can organize these allocutive agreement markers by the sex of the speaker and the illocutionary force behind the utterance as shown on Table 3.6 below.

4.3 *Enclitic field*

Table 3.6: Mandan allocutive agreement markers

	Indicative	Interrogative	Imperative
Male	= <i>o'sh</i>	= <i>o'sha</i>	= <i>ta</i>
Female/Non-male	= <i>o're</i>	= <i>o'na</i>	= <i>na</i>

The non-imperative allocutive markers are made up of the copular ó’ ‘be’ plus a determiner, locative, or discourse particle that has come to be reanalyzed as carrying allocutive semantics. These enclitics are no longer decomposable by speakers are treated as discrete units. Given the FILL C constraint in Mandan, ó’ must have at one point been used as an auxiliary along with finite verbs. Inflectional morphology must have remained on the lexical verb, as there is no evidence in the corpus that this ó’ ever bore person marking. Over time, instead of being analyzed as an independent word, the copula became reanalyzed as being an integral whole with its corresponding allocutive marker.

When addressing a woman or a group of women (including one or more people who identify as *míirek* ‘two-spirit’), the female-addressee markers must be used. Thus, a more accurate assessment of these allocutionary markers is that they indicate that the listener is a non-male person or a group of non-male people. The male-addressee markers are used for speech directed at individual men, mixed groups, male animals, or tobacco plants. All female animals and plants that are not tobacco are addressed with the female-addressee markers. The allocutive agreement markers act as honorifics of a sort, showing respect to the listener by acknowledging their role in the speech act, even if the topics of the speech act do not involve them directly, *per se*.

The behavior of each allocutive agreement marker is explained in the following subsections.

4.3.5.1.1 Female-addressee interrogative marker: =*o'na*

The female-addressee interrogative marker serves to indicate that a question is being directed at a woman, a group of women, a non-male individual (e.g., a two-spirit), or a group of people that does not contain men. This enclitic appears to be a combination of the copula ó’ and the topic marker =*na*, historically speaking. Contemporary speakers do not decompose this enclitic into two elements. There is no known cognate with this allocutive agreement marking in any other Siouan language, though other Siouan languages have their own tactic for encoding sex in different illocutionary contexts. We can see the female-addressee interrogative marker in the data below.

4 Verbal morphology

(147) Examples of the female-address interrogative marker *=o'na*

- a. *ítewetaa* *raréeho'na?*
i-t-we=taa ra-rEEh=o'raq
PV.DIR-WH-INDF=LOC 2A-go.there=INT.F
'where are you going?' (Hollow 1973a: 103)
- b. *wáarapakiriiro'na?*
waa-ra-pa-krii=o'raq
something-2A-INS.PUSH-count=INT.F
'are you counting something?' (Hollow 1970: 457)
- c. *manakíkų'tekto'na?*
w-rą-kikų'tE=kt=o'raq
1s-2A-help=POT=INT.F
'will you help me?' (Hollow 1970: 457)
- d. *nuréeho'na?*
ru-rEEh=t=o'raq
1A.PL-go.there=POT=INT.F
'let's go' (Hollow 1970: 458)

Very few examples of this enclitic exist in the corpus, but it is obviously quite common in everyday speech. Most of the dialog in the corpus involves men speaking to other men or to mixed groups, which explains the paucity of natural data involving *=o'na*. Pedagogical materials, such as in Hollow et al. (1976) who have paradigms for learners, feature this and the other female-addressee markers heavily.

Note that Mandan has no dedicated first person plural imperative, so hortative constructions like 'let's go' in (147d) are one strategy of conveying first person plural imperative propositions by turning a suggestion or command into a yes-no question.

4.3.5.1.2 Female-addressee indicative marker: *=o're*

The female-addressee indicative marker is used when stating facts to a woman or a group of women. This marker is historically a combination of the verb *ó* 'be' and another element. This second element may be the proximal demonstrative *re*, which seems to be cognate with the Hidatsa focus marker *=ri* (Boyle 2007: 70), as well as Rankin's (2010) reconstruction of the Proto-Dhegihan female-speaker assertion marker **ðe*. The Biloxi focus marker *-di* is likewise cognate (Torres 2010: 39), as well as the indicative marker *-re(e)* in Catawba (Rudes 2007: 53). This wide

4.3 Enclitic field

range of cognates suggests that there was some element in Proto-Siouan that served to mark a topicalized or focused element or indicate the indicative. It is possible that the same element performed both duties, giving us the range of reflexes that we see across the Siouan language family. We can see this enclitic in use below.

(148) Examples of the female-addressee indicative marker *=o're*

- a. *ptamíihe*, *wawákte're*
w-ta-wíjh=E wa-wa-ktE=o're
1POSS-AL-male's.sister=SV UNSP-1A-kill=IND.F
'my sister, I killed something' (Hollow 1973a: 221)
- b. *wáa'iwakisekaa*, *maná'ke're*
waa-i-wa-ki-sek=E wa-rá'kE=o're
something-PV.INS-1A-ITR-make=SV 1A-sit.AUX=IND.F
'I am fixing something' (Hollow 1973a: 222)
- c. *míkaa*, *téero're*, *éeheerak*
wík=E=Ø tee=o're ee-hee=ak
be.none=sv=CONT die=IND.F PV-say=DS
'he died having said nothing' (Hollow 1973a: 63)
- d. *raríshaa*, *namá'kekto're*
ra-ru-shE ra-wá'kE=kt=o're
2A-INS.HAND-hold 2A-lie.AUX=POT=IND.F
'you should be taking them' (Hollow 1973a: 75)

This enclitic is uncommon in the corpus, as much of the corpus consists of traditional narratives involves male figures. Like the other non-imperative illocutionary markers, no other enclitic can appear after *=o're*; it is the final element in a matrix clause.

4.3.5.1.3 Male-addressee indicative marker: *=o'sh*

Of all the morphology present in the corpus, the male-addressee indicative marker *=o'sh* is one of the most frequent items to appear. It is used whenever speaking to a man, a group of men, or a mixed group. The reason this marker appears most often in the corpus is that the majority of scholars who have worked on Mandan have been men, and as such, their consultants have used male-addressee marking when speaking to them. It is interesting to note that Trechter's (2012b) data also features male-addressee marking despite the fact she is a woman, but Mr. Edwin

4 Verbal morphology

Benson seems to be telling his narratives not to her, but to people in general. This choice indicates that speakers have some pragmatic control over which allocutive agreement markers they use; the allocutive argeement is not restricted to those in earshot, else Trechter's data would feature mostly female-addressee morphology. We can see the behavior of =o'sh in the data below.

(149) Examples of the male-addressee indicative marker =o'sh

- a. *manáhinii ́qqwe tutúharaani*
wrəh#inj̪i ́qqwe tu~tu#hrE=r̪i
tree#grow all DIST~be.some#CAUS=ss
kí'hoomako'sh
ki'h=oowąk=o'sh
arrive.back.here=NARR=IND.M
'he made the springs all over the place and came back' (Hollow 1973a: 3)
- b. *numá'kaaki sikerekí, miní híjre*
ruwą'k-aaki si=krE=ki wr̪i híj=E
man-COLL travel=3PL=COND water drink=sv
óma'kekere'sh
o-wą'kE=krE=o'sh
PV.IRR-lie.AUX=3PL=IND.M
'there will be water there to drink when people travel' (Hollow 1973a: 4)
- c. *Numá'k Máxana ókapqte*
ruwą'k wąxrą o-ka-pąt=E
man one PV.IRR-INS.FRCE-cultivate=sv
íwarooro'xere'sh
i-wa-roo=o'xrE=o'sh
PV.INS-1A-speak=DUB=IND.M
'I am going to talk about Lone Man's origin' (Hollow 1973a: 5)
- d. *ímaataht waréeh íwateero'sh*
i-wąqatah=t wa-rEEh i-wa-tee=o'sh
PV.DIR-river=LOC 1A-go.there PV.INS-1A-like=IND.M
'I would like to go to the river' (Hollow 1973a: 35)

This enclitic, like the other non-imperative allocutive agreement markers, contains a fossilized ó 'be' plus another element. The /ʃ/ in the coda is a cognate with

4.3 Enclitic field

the declarative marker in Hidatsa, *=c* (Boyle 2007: 197). This element is also a cognate with the Tutelo assertion marker *-se* (Einaudi 1976: 121). All three languages show reflexes of a Proto-Siouan *-se. It is not clear if this declarative *-se is related to the similitive *-se, whose reflex is the fricative in the attitudinal *=nash* in Mandan, or if these were two homophonous elements. What is clear is that the geographical distance between the Tutelo of Virginia and the Mandan and Hidatsa of North Dakota make this this similarity too unlikely for it to be ascribed to contact.

4.3.5.1.4 Male-addressee interrogative marker: *=o'sha*

When asking a question of a man, a group of men, or a mixed group, the male-addressee interrogative marked *=o'sha* is required. It is similar in phonetic shape to the indicative marker for male addressees, and given the tendency to cease phonation towards the end of the word, the final vowel is sometime not as audible as the preceding vowel. Unlike the female-addressee markers, there is no oral-nasal contrast in the indicative and interrogative for male addressees. Examples of *=o'sha* appear in the data below.

(150) Examples of the male-addressee interrogative marker *=o'sha*

- a. *tashká reheré'sha*, *wáa'ireseke?*
tashka re-hrE=o'sha *waa-i-re-sek=E*
how 2A-CAUS=INT.M NOM-PV.INS-2A-make=sv
'how did you do it, what you made?' (Hollow 1973a: 3)
- b. *mashkáshkapka*, *riráse* *tashkáhaa éeheero'sha?*
wq-shka~shkap=ka *ri-ras=E* *tashka=haa ee-hee=o'sha*
UNSP-DIST~prick=HAB 2POSS-name=sv how=INS PV-say=INT.M
'tomato, how does one say your name?' (Hollow 1973a: 14)
- c. *matewé* *órarukq'ro'sha?*
wa-t-we *o-ra-ru-kq'=o'sha*
UNSP-WH-INDF PV.IRR-2A-INS.HAND-give=INT.M
'what will you give for it?' (Hollow 1973a: 29)
- d. *rahijkt'o'sha?*
ra-hij=kt=o'sha
2A-drink=POT=INT.M
'are you going to drink it?' (Hollow 1970: 454)

This enclitic seems to have a similar origin as the male-addressee indicative marker *=o'sh* in that it has a fossilized copular *ó'*, along with another element.

4 Verbal morphology

What is not clear is whether the /ə/ element at the end is historically one formative or two. That is, it is not clear if the interrogative originates from the indicative plus another element, or if the morphological material after /oʔ/ comes from a single formative.

If the interrogative was formed from the indicative, then the likely candidate for what the final vowel is could be the Proto-Siouan demonstrative *ʔa, which has reflexes as both a prefixing and suffixing element across the Siouan language family (Rankin et al. 2015). All /CʔV/ sequences in Mandan and Proto-Missouri Valley result in the glottal element undergoing metathesis with the following a vowel to create a /CVʔ/ sequence. This utterance-final glottal could have been lost due to its weak prosodic position in the utterance rendering it harder to perceive as phonation ceased, giving us the the modern interrogative marker =o'sha.

Rankin (2010) posits that the material after the fossilized copula is a cognate with the Lakota dubitative enclitics =so and =se. The fricatives match up if they are both descended from Proto-Siouan *se, but it is not clear what has caused the differences in the vowels. Further study is needed of cross-Siouan verbal and nominal morphology to determine cognates for non-lexical material.

4.3.5.1.5 Female-addressee imperative marker: =na

Unlike the indicative or the interrogative markers, the imperative =na has no fossilized ó 'be' as part of the enclitic. Phonetically, the female-addressee imperative marker is identical to the topic enclitic =na, but unlike the topic enclitic, the imperative triggers ablaut. It is not clear if the imperative marker shares a common origin with the topic enclitic, but it would be consistent with other Siouan clause-level morphology to appropriate determiners and locatives as complementizers and other utterance-level morphology.

Biloxi has a hortative *na* and a homophonous strong negative imperative *na*, though this enclitic does not encode features of the listener or speaker (Einaudi 1976: 91). Greer (2016: 222) reports that the polite command marker for female speakers in Chiwere is -ne and the direct command marker can be -re or -ræ. Both of last two these forms seem similar to the underlying phonological shape of the Mandan /=ra/, but it is unclear if the relationship between these markers is circumstantial or not. Furthermore, it is unclear what the relationship is between imperative =na and interrogative =o'na. We can see how =na is used in the data below.

- (151) Examples of the female-address imperative marker =na

4.3 Enclitic field

- a. *“húunitana!”* éeheroomako’sh
 huu=rit=rä ee-he=oowäk=o’sh
 come.here=2PL=IMP.F PV-say=NARR=IND.M
 ‘he said “come on!”’ (Hollow 1973b: 10)

b. *múupes* inák wó’kiharaana!
 wüupE=s iräk w-o’ki#hrE=rä
 cornmush=DEF again UNSP-be.cooked#CAUS=IMP.F
 ‘cook the cornmush again! (Hollow 1973b: 178)

c. *hiré máatahtaa réehmaharaana!*
 hire wäqtah=taa rEEh#wä-hrE=rä
 now river=LOC go.there#1s-caus=IMP.F
 ‘put me in the river now!’ (Hollow 1973b: 322)

d. *káare kék’na!*
 kaare ke’=rä
 IMP.NEG dig=IMP.F
 ‘do not dig!’ (Hollow 1973b: 305)

When negating an imperative, the negative imperative proclitic *káare* will typically appear in first position within a clause. No negation marking appears on the verb. Making the imperative plural simply requires the second person plural =*nit* before =*na*. The only element that can follow the imperative =*na* is the politeness marker =*hak*.

4.3.5.1.6 Male-addressee imperative marker: =ta

A command given to a man, a group of men, or a mixed group will involve *=ta*. It may appear with the politeness marker *=hak* when speakers wish to soften the command or give a more jocular exhortation.

- (152) Examples of the male-addressee imperative marker =ta

 - a. *mamáhenashinista*
wa-wa-he=rash=rit=ta
UNSP-1s-see=ATT=2PL=IMP.M
'you (pl.) have got to try to see for me' (Hollow 1973a: 35)
 - b. *shúqshuka ráahtha!*
shuqshuka rEEh=ta
be.direct go.there=IMP.M
'go straight ahead!' (Hollow 1973a: 35)

4 Verbal morphology

- c. *káare q'skaharaata*
 kaare a'ska#hrE=ta
 IMP.NEG be.near#CAUS=IMP.M
 'do not do it that way' (Hollow 1973a: 38)
- d. *íshüyühe qqwe rusháa makú'ta*
 i-shüyüh=E qqwe ru-SHE wä-kü'=ta
 PV.POSS-sinew=SV all INS.HAND-hold 1s-give=IMP.M
 'take all the sinew for me' (Hollow 1973a: 78)

The male-addressee imperative marker *=ta* is an ablaut-triggering enclitic, just like the female-addressee imperative marker *=na*. However, there is no over nasal element to this enclitic to explain why it triggers ablaut. Several researchers have raised possibilities over the origin of ablaut in Siouan, but all proposals to date have been very preliminary or simply do not have enough cross-linguistic data to support a strong conclusion about the morpho-phonological motivation behind the manifestation of ablaut in modern Siouan languages (Rood 1983, Jones 1983a, Rankin 1995). It is worth noting that these cursory studies on ablaut show that imperatives are one of the few conditions under which ablaut occurs across the Siouan language family. The Mandan *=ta* has the cognate *ta* 'male to male imperative' in Biloxi (Einaudi 1976: 88). What is not obvious is whether this element stems from the Proto-Siouan locative **ta(a)* or if it is a variant on a reduced form of the future or potential **ktE*.

4.3.5.2 Switch-reference markers

Several Siouan languages feature a system of switch-reference, including Crow (Graczyk 1987), Biloxi (Graczyk 1997), and Hidatsa (Boyle 2011). In a seminal work on the topic, Haiman & Munro (1983: ix) define canonical switch-reference as category on the verb where there is a morphological indication of whether the subject of that verb is identical with the subject of another verb. Mixco (1997b) identifies Mandan as a switch-reference language, though he states there is a distinction between realis and unrealis switch-reference marking. That point of view is not supported by the data, as there is separate unrealis marking elsewhere in the verbal complex. However, the data do corroborate Mixco's hypothesis that Mandan distinguishes between same-subject and different-subject clauses through switch-reference marking. As such, we can identify two switch-reference markers in Mandan: one that is used when the subjects of sequential clauses are the same and another that is used when the following clause has a different subject.

4.3 Enclitic field

- (153) Switch-reference markers in Mandan
- /=ak/ different-subject switch-reference marker
 /=ri/ same-subject switch-reference marker

The precise syntax and methods of interclausal agreement between switch-reference markers and a superior clause is beyond the scope of the work presented herein.

4.3.5.2.1 Different-subject switch-reference marker: *=ak*

The different-subject switch-reference marker is *=ak* appears whenever the subject of the following verb is different from the subject of the verb bearing *=ak*. These subjects can contain all the same features (i.e., identical number, person, and the like), but they will always be coindexed to different subjects. We can see examples of this below.

- (154) Examples of the different-subject switch-reference marker *=ak*

- a. óshik iwaséko'sh
 o-shi=ak i-wa-sek=o'sh
 PV.IRR-be.good=DS PV.INS-1A-make=IND.M
 'it_i would be good and I_j made it' (Hollow 1973a: 4)
- b. éheerak "kotewé nurátoora'shka éeheki,
 e-hee=ak ko-t-we rü-ratoo=a'shka ee-he=ki
 PV-say=DS REL-WH-INDF 1A.PL-be.old=PSBL PV-say=COND
 komíma'o'rak," éeheka'ehe
 ko-wi~wá-o'=ak ee-he=ka'ehe
 REL-AUG~1s-be=DS PV-say=QUOT
 'he_i said it and he_j said "if someone_k says who_l among us is the oldest,
 that person_j is me," it is said' (Hollow 1973a: 6)
- c. máamanapak wáakanaarósh, míihq't
 waa-wa-rap=ak waa=krqá=o'sh wíjh=q't
 UNSP-1A-dance=DS UNSP-sing=IND.M woman=DEM.ANAP
 'I_i danced and that woman_j sang' (Mixco 1997b: 224)
- d. ní'mahqpak wahé'sh
 ri-iwáqhap=ak wa-hE=o'sh
 2s-be.lost=DS 1A-see=IND.M
 'I_i see that you_j are lost' (Mixco 1997b: 233)

4 Verbal morphology

The most likely reason that *=ak* is used so extensively throughout Mandan discourse is that third person subjects come up quite often in traditional narratives, and there is no morphological marking of third person singular. As such, when multiple individuals are involved in the discourse, it can become confusing to keep track of who did what. When the listener hears *=ak* they know that the next action or state involves a different subject.

The different-subject switch-reference marker has cognates in Missouri Valley languages: *=ak/ =k* in Crow (Graczyk 2007), and *=ag/ =g* in Hidatsa (Boyle 2007). While these forms are all cognates, there is a semantic distinction: the different-subject marker in Mandan is the same-subject marker in both Crow and Hidatsa. This term may originate from the Proto-Siouan term **ake* ‘across, over.’ No other Siouan languages share this element as a switch-reference marker, so it is quite likely an innovation from a proto-language ancestral to both Mandan and Missouri Valley, used to signal some characteristic about continuity of a topic that became associated with a change in subject. If this proposed evolution from **ake* to *=ak* holds, that means that Mandan is more in line with the original semantics of **ake*, and that Missouri Valley Siouan altered the meaning to mean the opposite.²⁰

4.3.5.2.2 Same-subject switch-reference marker: *=ni*

In contrast to the different-subject switch-reference marker *=ak*, the same-subject switch-reference marker *=ni* indicates that the verbs being this complementizer shares the same subject as the following verb. Historically, the same-subject switch-reference marker evolved from the Proto-Siouan verb **rj* ‘be, exist.’ Clauses bearing switch-reference marking are more morphologically reduced than matrix verbs, so it is likely the case that switch-reference clauses in Mandan are not finite. Kennard (1936) first proposes that switch-reference markers are really participles, given the fact that speakers tended to translate them in English as adjunct clauses using participles. This analysis is not too far from the truth, given the origin of *=ni*.²¹

²⁰Reanalyzing an adposition to indicate can begin in languages by having quasi-switch-reference like in English, where the preposition ‘with’ can mark a non-finite clause as having a different subject than the matrix clause: e.g., *With her_i being out of the picture, she_j could finally breathe a sigh of relief.*

²¹Use of a non-finite ‘be’ is not unique to Mandan, as this is something that is possible in English. Quasi-switch-reference marking is used in English with a non-finite verb in an adjunct clause, where the subject of that clause is identical to the matrix clause: e.g., *(PRO_i) being such a healthy person, I_i always avoided ice cream.* It is possible that this kind of construction gave way to reanalysis as indicating that one clause must necessarily have the same subject as the

4.3 Enclitic field

This enclitic is one of the most common morphological items in the corpus, given that much of the corpus involves certain figures undertaking deeds or going on travels alone. We can see the behavior of *=ni* in the data below.

(155) Examples of the same-subject switch-reference marker *=ni*

- a. *Kinúma'kshi* *ishák maa'q'st* *íwahuure*
ki-ruwá'k#shi *ishak waa-q't=t* *i-wa-huu=E*
 MID-man#be.good 3PRO NOM-be.in.past=LOC PV.POSS-UNSP-bone=sv
rá'shotini *mákoomako'sh*
ra'-shot=rí *wák=oowák=o'sh*
 INS.HEAT-be.white=ss LIE.POS=NARR=IND.M
 ‘First Creator’s bones_i already turned white and they_i were lying there’ (Hollow 1973a: 1)
- b. *háki* *nuráahini* *ríxatinisto'sh*
ha-ki *rú-rEEh=rí* *rV-i-xat=rít=t=o'sh*
 PROV=COND 1A.PL-go.there=ss 1A.PL-PV.INS-inspect=2PL=POT=IND.M
 ‘so, we_i will go over there and we_i will look over it’ (Hollow 1973a: 11)
- c. *minís éena* *waharáani waptého'sh*
wrís ee=rá *wa-hrE=rí* *wa-ptEh=o'sh*
 horse DEM.DIS=TOP 1A-see=ss 1A-run=IND.M
 ‘I_i saw the horse and I_i ran away’ (Mixco 1997b: 5)
- d. *wáapshixini* *wáashotinixo'sh*
waa-pshi=xi=rí *waa-shot=ríx=o'sh*
 NEG-be.black=NEG=ss NEG-be.white=NEG=IND.M
 ‘it_i is not black and it_i is not white’ (Mixco 1997b: 5)

In each of the examples above, we can see that the subjects are coindexed. The only determining factor over using *=ni* or *=ak* lies in whether the following subject matching the current subject. It is perfectly possible for a subject to switch its reference and then switch it back to the previous subject. We can see an example of this phenomenon below.

(156) Switching between switch-reference markers

- | | | | |
|------------------------|----------------|--------------------------|--------------------------|
| <i>miníseena</i> | <i>ráahini</i> | <i>maná nákak</i> | <i>máapehaa</i> |
| <i>wrís=s=ee=rá</i> | <i>rEEh=rí</i> | <i>wrá</i> <i>rák=rí</i> | <i>wáape=haa</i> |
| horse=DEF=DEM.DIST=TOP | go.there=ss | tree | under=SIM go.there=IND.M |

following one over time.

4 Verbal morphology

réeho'sh
rEEh=o'sh

‘the horse passed beneath the tree [lit. the horse_i went and a tree_j stood there and the horse_i went under it_j]’ (Mixco 1997b: 226)

The horse in the above example is the subject of the initial verb *ráahini* 'went' and the matrix verb *réeho'sh* 'went' while the subject of the second verb *ná'kak* 'sit' is the tree. Even though the first and last verbs have coindexed subjects, the fact that there is an intervening subject necessitates the use of a different-subject switch-reference marker to indicate a transition from one subject to another. There is nothing about the construction in (156) that automatically tells the listener that the different-subject switch-reference marker is switching the reference back to the previous subject; it merely indicates that the same subject (i.e., the tree) is not the subject of the following verb. It is left to inference that the horse is the subject of the final verb, as it is equally plausible that a third subject could be involved. As such, the speaker and the listener are relying on the information that is already available in the discourse to both indicate and understand what subject is taking what action and when.

4.3.5.3 Hypothetical mood complementizer: $=q'tt$

The hypothetical mood complementizer is derived from the anaphoric determiner *q't* 'that.' Like many other Siouan languages, determiners and locatives are often reanalyzed as clause-level morphology. In this case, the hypothetical *=q't* indicates a kind of conditional reading where the speaker is expressing the conditions that could lead to an event or to mark contrary conditions. It is sparsely attested in the corpus. We can see examples of this enclitic below.

- (157) Examples of the hypothetical mood complementizer =q't

 - a. *kiríkereki*, *ókina'kara't*
kri=krE=ki o-kira'=krE=q't
arrive.back.there=3PL=COND PV.IRR=tell=3PL=**HYP**
'they would say so if they were to get back' (Kennard 1936: 20)
 - b. *róo* *wakxu̯hki* *ó'irahekq't*
roo wa-kxu̯h=ki o-i-ra-hek=q't
DEM.MID 1A-lie.down=COND PV.IRR-PV.INS-2A-know=**HYP**
'you would know it if I were to lie down here' (Hollow 1973a: 1)

4.3 Enclitic field

- c. *téehq̤t waréehq̤t*
 teehq̤t wa-rEEh=q̤t
 be.far=LOC 1A-go.there=HYP
 'I would go a long way' (Hollow 1973b: 146)
- d. *hiré tashká'eshkak q̤'ska rahereka'sha, mí'he*
 hire tashka-eshka=ak q̤'ska ra-hrE=ka=o'sha wí'h=E
 now how-SMLT=DS be.near 2A-CAUS=HAB=INT.M robe=sv
tq̤qhqq ní'hka't
 tq̤qhqq r'-iíh=ka=q̤t
 be.different=INS 2s-wear.about.shoulders=HAB=HYP
 'how come you are always doing it this way now, would you always
 cover yourself with a different robe?' (Hollow 1973b: 240)

In terms of usage, the hypothetical is often accompanied by a conditional complementizer *=ki*, creating a construction where a condition is raised and then what would hypothetically happen is proposed. The hypothetical can also appear without a conditional, but in those cases, there is some implied conditional, like in (157c), where the speaker is tied up, high above the ground and then looks down and wonders how far he would have to travel to get back down. The hypothetical can also be used independent of a conditional when soliciting reasons why someone does something, as we see in (157d). The speaker confronts the listener who is always wearing a different a different robe after he comes home from sneaking out all night, and remarks why is it that he always would be wearing a different robe.

The hypothetical complementizer triggers ablaut for most speakers, but as we can see in (157c), this is not the case for all speakers. As we have previously discussed with negation, it seems that not all Mandan speakers treat ablauting enclitics the same. There is also a tendency for the nasalization in *=q̤t* to be pronounced very weakly, and it may be that nasal-initial enclitics in Mandan tend to lose nasality when cliticized.

4.3.5.4 Stem vowel: *=e*

One of the largest outstanding issues with Mandan morphology has been the status of the [e] that appears word-finally on nouns and verbs alike; sometimes, it is there, and other times, it is not. Speakers have not been able to articulate a meaning for this ending. Kennard (1936: 26) says that it is an indefinite article, while Hollow (1970: 39) says that it has no meaning and can just be optionally added at the end of any consonant-final stem. Mixco (1997a: 15) just calls it a stem

4 Verbal morphology

vowel, and does not assign it any meaning and matches Hollow's opinion that it has no meaning of its own. However, when we start to match up the transcribed data with audio, a pattern begins to emerge. Namely, the stem vowel appears at the boundary of an intonational phrase, and there is a prosodic break between the item bearing the stem vowel and the rest of the utterance.

When working with learners, this piece of morphology is quite challenging to explain when it must appear and when it must not. When eliciting words for a word list, items ending in a consonant or a long vowel usually have a stem vowel at the end. When these words are placed in the context of a sentence, the stem vowel does not appear unless there is some prosodic break. This distinction resembles the issue of citation form versus stem forms in Crow. The citation form is used for free word forms when someone asks how to say something in Crow or give a one-word answer. The stem form is the form upon which all other morphology is added, and as such, citation forms are not common in daily discourse (Graczyk 2007: 30). The citation forms in Mandan are words bearing a stem vowel, because Mandan requires that some material be present in C. The stem vowel acts as a complementizer, serving to mark the edge of an intonational phrase if no other material is available (see the data in (159) below). In this way, we can tell the difference between a fragment in Mandan and a complete utterance, because the fragment would lack the stem vowel. In the data below, we see pairs of words that have no difference in meaning, but have differences in form. Stem forms (i.e., those that can be present without /-E/) are those that consist of just the stem and can be found within some kind of phrase structure. Citation forms (i.e., those that end in /-E/) are those that can be found in isolation.

(158) Stem versus citation forms

- a. *kók* ~ *kóke* 'pronghorn antelope'
- b. *ratáx* ~ *ratáxe* 'to cry out'
- c. *réeh* ~ *réehe* 'to go there'
- d. *músh* ~ *múshe* 'buttocks'
- e. *imáa* ~ *imáare* 'body'
- f. *ké'* ~ *ké're* 'to dig'

The stem vowel, appearing in the complementizer position, triggers epenthetic [r] when following a stem ending in a long vowel or a glottal stop (see discussion of hiatus resolution at phrasal boundary in §3.6.1.2). When looking across

4.3 Enclitic field

the language family, we see that this [r]-epenthesis is not solely a Nu'etaare innovation, but may ultimately be grounded in a similar process in Proto-Siouan.²² Numerous reconstructed stems in Proto-Siouan typically end in what Rankin et al. (2015) call a “common suffix,” *-re. This common suffix is almost exclusively found after long vowels in Proto-Siouan, and in the cases that it is not, there is debate over the vowel’s length. In most Siouan languages, this common suffix is not present, but in disparate branches of the family, we see that it survives and exists in contextually-dependent doublets much like Mandan.

Rankin (2010) remarks that Mandan has been difficult to contextualize within the Siouan language family because so much of its morphology can be attributed to Proto-Siouan rather than being an innovation in Mandan. In this respect, Mandan shows itself to be particularly conservative, morphologically-speaking. My proposal is that this common suffix represents a productive process in Proto-Siouan whereby there was some restriction on the environments where a long vowel could appear, and that this process is still productive in Mandan. Namely, there is a restriction against long vowels appearing at the right edge of some structural or prosodic domain, and as such, there is some epenthetic element that is generated to repair such illicit constructions. In Mandan, intonational phrases cannot end in a long vowel, which necessitates the insertion of the short stem vowel /-E/, as demonstrated in the example below.

- (159) Stem vowel insertion at the edge of intonational phrases
- Arikara kirúuhka'heero'sh, óhuure.*
 arikra kiruuh=ka'ehe=o'sh o-huu=E
 Arikara refuse=QUOT=IND.M PV.IRR-come.here=sv
 ‘The Arikara refused to come, they say’ (Hollow 1973a: 48)

Mandan allows the action being refused to be elided normally, so *Arikara kirúuhka'heero'sh* in of itself is a complete utterance that is better translated as ‘The Arikara refused to do so, they say,’ and the *óhuure* ‘to come’ is dislocated to the right as parenthetical information, indicating that it is an afterthought by the speaker. These two clauses are nested within different intonational phrases, and as such, the stem vowel is required with the right dislocated clause, and the presence of the stem vowel next to the long vowel triggers [r]-epenthesis.

This same process has fossilized in other Siouan languages where the form with the stem vowel has become reanalyzed as being a single morphological

²²As previously discussed by Carter (1991a), the Ruptaare dialect does not have [r]-epenthesis, but uses [?] -epenthesis for both word-internal hiatus resolution as well as at enclitic boundaries.

4 Verbal morphology

item: e.g., Proto-Siouan *sii(-re) ‘yellow’ becomes *shíli* in Crow and *círi* in Hidatsa, *síidi* in Biloxi, and *siri* ‘clear’ in Catawba. The Mandan reflex of this is either *síi* or *síire*, depending on its context. Further research is needed into other Siouan languages to confirm this, but given the strong tendency among Siouan languages to have some manner of morphological material following the verb in complete sentences, it is likely that these unexplained “optional” vowels are not really optional at all, and that this common suffix in Siouanist literature is not a suffix at all, but a phrasal enclitic that is filling the complementizer slot.

The presence of the stem vowel is an indicator of a prosodic break, most commonly associated with a topicalized element or a parenthetical element. We can see this in the White free translations of the

(160) Prosodic breaks and /=E/

- a. *Kjnúma'kshi éeheni Numá'k Máxana íwahekanashe*
 ki-ruwá'k#shi ee-he=rí ruwá'k wáxraq i-wa-hek=rásh=E
 MID-man#good PV-say=ss man one PV.INS-1A-know=ATT=SV
wakína'ni éewereho'sh
 wa-kíraq'=rí ee-we-reh=o'sh
 1A-tell=ss PV-1A-want=IND.M
 ‘I want to tell what I know about First Creator and Lone Man’ [lit.
 ‘what I know about First Creator and Lone Man, I want to tell it to
 you.’] (Hollow 1973a: 1)
- b. “*mí'miratooro'sh*,” *éeheerak, Kjnúma'kshi koratoore*
 wí'~wí-ratoo=o'sh ee-hee=ak ki-ruwá'k#shi ko-ratoo=E
 AUG~1s-be.elder=IND.M PV-say=DS MID-man#good REL-be.elder=SV
ée ó'roomako'sh
 ee o'=ooώqk=o'sh
 DEM.DIST be=NARR=IND.M
 ‘I am definitely the oldest,’ he said and First Creator was the one who
 was the elder.’ [lit. ‘I am definitely the oldest,’ he said, First Creator
 did, the elder one, he was the one.’] (Hollow 1973a: 2)
- c. *híj, tashká'sha, máa'qke írasek?*
 híj ta=shka=o'sha waa'qk=E i-ra-sek
 well WH=SMLT=INT.M earth=SV PV.INS-2A-make
 ‘well, how is it, the land you made?’ [lit. ‘well, how is it, the land, you
 made it...?’] (Hollow 1973a: 10)

In (160a), we see that the stem vowel marks the right edge of an intonational phrase. The literal translation of it does a better job capturing the more layered

4.3 Enclitic field

structure of the sentence in the sense that it is not just clearly subject-object-verb; we have a fronted element (i.e., ‘[what I know about First Creator,] I want to tell it’) rather than a subordinated element (i.e., ‘I want to tell [what I know about First Creator]’). We see a similar situation in (160b), where the the sentence ends with ‘he said, First Creator did, the elder one, he was the one,’ where we see First Creator topicalized, then we see ‘the elder one’ topicalized as well, followed by ‘he was the one.’ This style of speech does not conform one-to-one to academic English, rendering these kinds of subtleties of Mandan discourse structure opaque. The use of the stem vowel on ‘earth’ in (160c) and the fact that an enclitic-less *írasek* ‘you made it’ following it belies the fact that this sentence involves the speaker is trailing off when narrating this situation, after adding these afterthoughts to clarify the question being asked.

The stem vowel acts as a complementizer that is used as a last resort to indicate the end of a clause at the end of an intonational phrase. There is thus the difference between Mandan speakers producing so-called ‘citation forms’ during vocabulary elicitation that do not match the ‘stem forms’ used in actual speech most of the time. We can see more about how these citation forms manifest in Mandan discourse structure in chapter 6.

4.3.5.5 Simultaneous aspectual complementizer: *=haa*

As previously discussed in §4.3.1.2.2 above, many previous scholars have misanalyzed the ablauted stem vowel or the initial vowel in *=qmi* for *=haa*, the simultaneous aspectual complementizer. In reality, this enclitic is quite rare in the corpus. The paucity of times that *=haa* appears in the corpus lines up with the rarity of the adverbial subordinator or simultaneous marker *=haa* in Hidatsa (Park 2012: 530). Consultants will typically translate clauses marked with *=haa* as involving the English word ‘while.’ This formative has cognates across the Siouan language family, typically realized as *=ha* or *=hq*, though this particular enclitic clearly derives from the Proto-Siouan adverbializer, **-haa* (Rankin et al. 2015). The behavior of this enclitic is observed below.

(161) Examples of the simultaneous aspectual enclitic *=haa*

- a. *inák kináakahaa kináhka kawópqx,*
irąk ki-rąqkE=haa ki-rąk=ka ka-wopqx
again MID-be.new=SIM MID-POS.SIT=HAB INS.FRCE-stand.upright
Kjnúma'kshi, ishák maa'q'st iwahuure rá'shootini
ki-ruwa'k#shi ishak waa-u't=t i-wa-huu=E ra'-shoot=ri
MID-man#be.good 3PRO NOM-be.in.past=LOC 3POSS-UNSP-bone=SV INS.HEAT-be.white

4 *Verbal morphology*

mákoomako'sh

wąk=oowąk=o'sh

POS.LIE=NARR=IND.M

‘while becoming like new again, [his staff] was there, he put it up, First Creator, his bones already turned white and were lying there’ (Hollow 1973a: 1)

- b. *ú'shkaherek*, *kikínaakahaa*, “*mimiratooro'sh*,”
 ú'sh=ka#hrE=ak ki-ki-rąkE=haa, “wì~wì-ratoo=o'sh
 be.thus=HAB#CAUS=DS ITR-MID-be.new=SIM AUG~1s-be.mature=IND.M
éeheni...
 ee-he=rì
 PV-say=ss
 ‘having so done it, while it got new again, he said ‘I am the oldest’ and...’ (Hollow 1973a: 2)
- c. *xamáhaa* óxast ó'taaharaani
 xwąh=haa o-xat=t o'=taa#hrE=rì
 be.small=SIM PV.IRR-society=LOC be=LOC#CAUS=ss
kohúyxi'hoo
 ko-hüyü#xi'h=oo=rą
 3POSS.PERS-mother#be.old=DEM.MID=TOP
ł'pataxteka'sh
 ł'-pa-ta-xtE=ka=o'sh
 PV.RFLX-INS.PUSH-push-AUG=HAB=IND.M
 ‘while he was small, when they had society doings, she made him be in them and his grandmother was always really proud of him’ (Hollow 1973a: 64)
- d. *ímashute* *kú'shtaahaa* *íwataraakini*
 i-wąshut=E kú'sh=taa=haa i-wa'-traak=rì
 PV.INS-clothe=sv be.inside=LOC=SIM PV.INS-INS.PRCE-shut=ss
ká'ni *náakaa*
 ka'=rì rąkE=∅
 possess=ss sit.AUX=sv
 ‘her dress, while she had it inside, she sewed it on and she had it there’ (Hollow 1973a: 106)
- e. *íkú'taahaa* *makú'ta!*
 i-kú'tE=haa wą-ku'=ta
 PV.DIR-throw=SIM 1s-give=IMP.M

4.3 Enclitic field

'throw it to me!' (Hollow 1973a: 132)

- f. *weréxanash írapawehaa*
 wrex=rash i-ra-pa-weh=haa
 kettle=ATT PV.INS-2A-INS.PUSH-hold.up=SIM
híjmanaherekto're
híj#w-rq-hrE=kt=o're
 drink#1s-2A-CAUS=POT=IND.M
 'you should let me drink while you hold out the pail' (Hollow 1973a: 131)

It is easy to confuse this enclitic with the ablauted continuative in casual speech, given that they both end in a long /aa/, in particular when the stem ends with /h/ as is the case in (161c). This marker triggers ablaut in /E/- and /EE/-final stems as we see in (161e). The fact that /hh/ sequences in Mandan also simplify to [h] further obscures when a speaker is using /=haa/ versus an /h/-final stem that contains an ablauted /E/. The semantics of both these enclitics seem quite similar. One distinction is that /E/ with ablaut indicates a serial verb construction, while /=haa/ is often accompanied by an intonational shift or pause.

4.3.5.6 Politeness marker: *=hak*

Mandan speakers tend to utilize very explicit and transparent strategies when it comes to verbal communication. The way to say 'good-bye' in Mandan, for instance, is just to tell the people you are with that you are leaving: i.e., *waréeho'sh* or *waréeho're* 'I am going.' One of the few overt manifestations of politeness in Mandan can be seen with imperatives. When issuing commands or requests, speakers may use the politeness marker *=hak* after the imperative marker. This post-imperative enclitic is the closest equivalent to the word 'please,' which serves to soften a command or to make a request sound less pressing. We can see its usage in the data below.

(162) Examples of the politeness marker *=hak*

- a. *húutahak; manakíkú'tekto'sh*
 huu=ta=hak w-rq-kíkú'tE=kt=o'sh
 come.here=IMP.M=POL 1s-2A-help=POT=IND.M
 'come on, please; you can help me' (Hollow 1973a: 41)

4 Verbal morphology

- b. *waráahtahak!*
wa-rEEh=ta=hak
UNSP-go.there=IMP.M=POL
'go right on ahead!' (Hollow 1973b: 265)
- c. *makína'nahak*
wq-kirq'=raq=hak
1s-tell=IMP.F=POL
'please tell me' (Hollow 1970: 436)
- d. *káare pawéshinistahak*
kaare pa-wesh=rjt=ta=hak
IMP.NEG INS.PUSH-cut=2PL=IMP.M=POL
'please don't any of you cut it' (Hollow 1970: 436)

In the corpus, this enclitic is very rare, but it is not uncommon in daily conversations. The police marker *=hak* can be used to soften a command, to demonstrate friendliness, or show respect. Even when used when speaking to elders, *=hak* is not inherently used with formal register, so it is not the case that one must use *=hak* exclusively when using imperatives with people to whom you are showing respect. This enclitic is not used outside of imperatives, and there is no equivalent of 'please' when used with questions or entreaties. It is not clear what the origin of this enclitic is, though it is possibly related to the standing positional *hqk*. Another possibility is that it is related to the Proto-Siouan contrastive marker **ha*, which is also seen in the Mandan pro-verb *háki* 'but, however.'

4.3.5.7 Conditional complementizer: *=ki*

The conditional complementizer *=ki* is often translated as 'if' or 'when' in the corpus. Mixco (1997a,b) argues that this formative is a different-subject irrealis switch-reference marker. However, the *=ki* is used with both same-subject and different-subject clauses, so that analysis does not hold. The conditional complementizer is a reflex of Proto-Siouan definite article **kj*, which also serves as a subordinator. Mandan no longer uses a reflex of **kj* as a definite article, but it has continued to use it as a complementizer, though its semantics have changed to only be used in conditional clauses. We can see this use of *=ki* below.

- (163) Examples of the conditional complementizer *=ki*

4.3 Enclitic field

- a. *áakoteweki órookti óshik*
 aakotewe=ki o-rootki o-shi=ak
 shelter=COND PV.IRR-camp PV.IRR-be.good=DS
íwaseko'sh
 i-wa-sek=o'sh
 PV.INS-1A-make=IND.M
 ‘it would be good if they had a shelter for camping and I made it’
 (Hollow 1973a: 3)
- b. *numá'kshiki ráse núpo'sh, ótu'sh*
 ruwá'k#shi=ki ras=e rúp=o'sh o-tu=o'sh
 man#be.good=COND name=sv two=IND.M PV.IRR-be.some=IND.M
 ‘if he is a chief, then he has two names’ (Hollow 1973a: 14)
- c. *íinahki ó'q'ka'sh*
 i-rí-rák=ki o-q'=ka=o'sh
 PV.INS-2S-SIT.POS=COND PV.IRR-be.thus=HAB=IND.M
 ‘when you are out of sight, that will be enough’ (Hollow 1973a: 25)
- d. *Kinúma'kshi kasúhki súk hú'na miníxaa*
 ki-ruwá'k#shi ka-suk=ki suk hú=o'=rāq wríx=E
 MID-man#be.good INS.FRCE-exit=COND child be.many=be=top play=sv
máakaho'sh
 wáqakah=o'sh
 lie.AUX.HAB=IND.M
 ‘when Old Man Coyote peeked out, there were a lot of children who
 were playing there’ (Hollow 1973a: 28)
- e. *síkerekí miní kíikaraakere'sh*
 si=krE=ki wrí kiikraa=krE=o'sh
 travel=3PL=COND water look.for=3PL=IND.M
 ‘when they travel, they look for water’ (Hollow 1970: 451)
- f. *numá'kaaki éena máaskap*
 nuwá'k-aaki ee=rāq wáqskap
 man-COLL DEM.DIST=TOP meat
írukaperekiki, ptíi
 i-ru-kap=krE=kti=ki ptíi
 PV.INS-INS.HAND-lack=3PL=POT=COND buffalo

4 Verbal morphology

híherekaroomako'sh

hi#hrE=ka=oowąk=o'sh

arrive.here#CAUS=HAB=NARR=IND.M

‘whenever the people were hard up for meat, he always made the buffalo come’ (Hollow 1973b: 301)

As we can see in the data above for (163b) and (163e) and unlike the hypothetical modal enclitic, the conditional complementizer relies on temporal subordination. That is, it invoke a condition, and if met, the action or state in the superior clause does or would happen. Furthermore, this conditional is not restricted to irrealis propositions, as we see in (163e) and (163f), which describe situations that happen habitually or customarily.

4.3.5.8 Iterative aspectual complementizer: *=nik*

Mandan has several morphological markers of iterativity: the prefix *ki-*, the aspectual enclitic *=ske*, as well as the complementizer *=nik*. It marks a subordinated clause and typically is used with superior clauses expressing habits or customs. It can be roughly glossed as ‘when,’ ‘whenever,’ or ‘each time.’ We can see examples of *=nik* below.

(164) Examples of the iterative aspectual complementizer *=nik*

- a. *ruptáahaa* *súkinik, réehkaroomaksjh*
 ru-ptEh=haa suk=rík rEEh=oowąk=sjh
 INS.HAND-run=SIM exit=ITR go.there=NARR=INTS
 ‘he always leaves when he goes out turning around’ (Hollow 1973a: 88)
- b. *kirútiniitaanik, ɿ'sh hq'ke'sh*
 k-rut=ríjtE=rík ɿ'sh hq'kE=o'sh
 SUUS-eat=CEL=ITR be.thus stand.AUX=IND.M
 ‘that was the way it was when she would be nibbling at it’ (Hollow 1973a: 126)
- c. *oo íwaxekerekiki, órootkinik, ɿ'sh*
 oo i-waxE=krE=kti=ki o-rootki=rík ɿ'sh
 DEM.MID PV.INS-stop=3PL=POT=COND PV.IRR-camp=ITR be.thus
núunihkerekat
ruurjh=krE=ka=qat
 be.there.PL.DUR.AUX=3PL=HAB=HYP
 ‘whenever they stopped there, they were always there like that when

4.3 Enclitic field

they would camp' (Hollow 1973a: 203)

- d. *kimáto i'haraanik* *íruxaxqhka'sh*
 ki-wəto i'-hrE=rɪk i-ru-xa~xəh=ka=o'sh
 MID-bear PV.RFLX-CAUS=ITR PV.INS-INS.HAND-AUG~be.torn=HAB=IND.M
 'every time he changes into a bear, he always tears them up' (Hollow
 1973b: 156)

Like the conditional, there is a causal relationship between a clause bearing the *=nik* complementizer and its superior clause. The majority of the data show that *=nik* occurs when something usually or always happens. It can be used with both realis and irrealis proposition. Most instances of *=nik* involve the same subject for both the clause bearing *=nik* and the superior clause, but as we see in (164b), this complementizer is not like a switch-reference marker that depends on having or not having coindexed subjects.

It is likely that this complementizer is actually a combination of a reflex of Proto-Siouan *r̥i 'be, exist' and the habitual *=ka*, where the final vowel has been lost. This enclitic triggers ablaut in all possible instances in the corpus, which is to be expected, given the fact that it contains a nasal segment.

4.3.5.9 Incredulative complementizer: *=niku'k*

In his description of the incredulative in his grammar, Kennard (1936: 20) notes that this enclitic expresses disbelief about a proposition, real or imagined, on the part of the speaker. Hollow (1970: 473) amends this description by pointing out that a speaker can also use the incredulative to report second-hand information that the speaker does not believe or that an event has happened that is so surprising that the speaker cannot believe that it really happened and remains unconvinced. These descriptions encompass all the uses of the incredulative *=niku'k* found in the corpus.

In many cases, indicative propositions are rendered as rhetorical questions in English, expressions of dubious possibility, or outright statements of disbelief. The incredulative *=niku'k* is not necessarily speech directed at any listener in particular, and while it can be translated as a question in English, it is used exclusively in declarations in Mandan. This complementizer is not a subordinator, and a clause ending in *=niku'k* is a complete utterance in of itself. As the data above show, *=niku'k* does not trigger ablaut, despite the fact that it features a nasal segment. We can see some examples of this complementizer in the following data.

- (165) Examples of the incredulative complementizer *=niku'k*

4 Verbal morphology

- a. *ré'esh* *úkahanashe* *túkerenikü'k!*
 re-esh úk#ah=rash=E tu=krE=ríkù'k
 DEM.PROX-SIM hand#be.covered=ATT=SV be.some=3PL=INCD
 'there couldn't have been some of his fingernails' (Hollow 1973a: 150)
- b. *ináa, réhak* *ímahqapinikü'k!*
 iraq re=hák i-waqap=ríkù'k
 yikes.F DEM.PROX=STND.POS PV.INS-be.lost=INCD
 'yikes, I can't believe this one has gotten lost!' (Hollow 1973a: 172)
- c. *wáanuma'kaaki hínuš* *wakaráahkakerenikü'k*
 waa-nuwá'k-aaki hú=rú=s wa-kraah=ka=krE=ríkù'k
 NOM-man-COLL be.many=ANF=DEF UNSP-be.afraid=HAB=3PL=INCD
 'that bunch of people sure must have been afraid' (Hollow 1973a: 178)
- d. *wáa'q's* *kí'hinikü'k!*
 waa-qa's k'-uqh=ríkù'k
 NOM-be.near 3POSS.PERS-wife=INCD
 'who would marry someone like that?' (Kennard 1936: 20)

The most likely origin for the incredulative *=nikü'k* is a combination of the Proto-Siouan negative **r̥i* and the benefactive verb **k'u* 'give,' with the final /k/ coming from the habitual **ka* that has lost its final vowel. Another possibility is that the /kü'/element is not originally derived from the benefactive verb 'give,' but has is a reanalysis of the proposed Proto-Siouan dubitative or negative **ku~*kü*. We see evidence of a cognate in Hoocak *šgynj*, the weak dubitative, which is composed of all three proposed negative formatives **aši+kü+r̥i*. As we saw in §4.3.4.1, the ordering of negative exponents in Mandan is the reverse of that in Mississippi Valley: i.e., Mississippi Valley has PSi **aši-r̥i* > Proto-Mississippi Valley **šni*, but Mandan has PSi **r̥i-axi* > *=nix* /r̥ix/. Having a reflex of PSi **kusimkü* appear after **r̥i* would be consistent with what we see with respect to the ordering of negative Proto-Siouan reflexes in Mandan.

If the dubitative origin analysis above is correct, then this enclitic is noteworthy in that Mandan has no other reflexes of the dubitative element PSi **ku*. The dubitative marker in Proto-Siouan itself is sparsely attested in the Siouan language family. This PSi **ku~kü* appears only in Hoocak-Chiwere and as a stem involved in negative element in Biloxi (Rankin et al. 2015). While it is not necessarily the case that this incredulative enclitic goes back to Proto-Siouan, but it is plausibly reconstructable.

4.3 Enclitic field

4.3.5.10 Disjunctive complementizer: =shka'nik or =shka

The disjunctive complementizer in Mandan juxtaposes two propositions where proposition A is true despite proposition B. This complementizer has similar semantics as ‘but,’ ‘although,’ or ‘even though’ in English. The disjunctive can manifest in Mandan with one of two markers: the complex =shka'nik or the simple =shka. Neither Kennard (1936: 22) nor Mixco (1997a: 61) describe any functional difference between the two, and examination of the corpus corroborates this observation. One possibility is that the complex form has a stronger reading than the simple form, but no speakers have elaborated upon the difference. Examples of this complementizer appear below.

(166) Examples of the disjunctive complementizer =shka'nik

- a. *i'q'kanashoo* *ihaaxikshka'nik*, *kaxip*
i-qa'=ka=rash=oo *i-haaxik=shka'rìk*, *ka-xip*
 PV.DIR-be.near=HAB=ATT=DEM.MID PV.INS-not.know=DSJ INS.FRCE-skin
i'haraa *má'kahaa...*
i'-hrE *wà'kah=E=Ø*
 PV.REFLX-CAUS lie.AUX.HAB=SV=CONT
 ‘although they did not know exactly how to do it that way, they kept trying to skin it’ (Hollow 1973a: 197)
- b. *tópha* *kiná'shka, wáapaksqhe* *mikáa* *ná'kini...*
 top#ha *kirà'=shka waa-pa-ksàh=E* *wìk=E* *rà'k=rì*
 four#times tell=DSJ NOM-INS.PUSH-be.worried=sv be.none=sv SIT.POS=ss
 ‘even though he told it four times, he was not paying attention and..’
 (Hollow 1973a: 156)
- c. *q'shkashka'nik, óminikiri'ro'sh*
q'shka=shka'rìk o-w-rì-kri'=o'sh
 be.near=DSJ PV.IRR-1A-2s-defeat=IND.M
 ‘that may be so, but I will beat you’ (Hollow 1973b: 59)
- d. *úkereshka'nik, wáateenixka'sh*
u=krE=shka'rìk waa-tee=rìx=ka=o'sh
 wound=3PL=DSJ NEG-die=NEG=HAB=IND.M
 ‘they shot him, but he does not die’ (Hollow 1973b: 117)

The complex =shka'nik looks to be made up of several elements. This formative includes the simple disjunctive or similitive =shka, but we can see the presence of a glottal stop, which indicates an elided /o/ from the copula ó’ ‘be.’ The

4 Verbal morphology

final element that makes the last syllable is the iterative complementizer *=nik*. Historically, this enclitic seems to have been made up of /=*shka*=o’=*rɪk*/, suggesting that it was originally some kind of periphrastic construction in earlier stages of Mandan that has become analyzable as a single unit that is a discrete enclitic unto itself for modern speakers. It is not clear what the origin of the simple disjunctive *=shka* is, as it could itself be made up of multiple Proto-Siouan elements: e.g., the /*ka*/ could be the attributive PSi **ka* or even the habitual *=ka*. Likewise, it could be related to the manner marker PSi **ska*, though that would conflate the origin of the disjunctive marker with the similitive marker. Further examination of interclausal morphology across the Siouan language family is needed to determine if this element has roots in Proto-Siouan or if it is a Mandan innovation.

4.3.5.11 Intensive indicative complementizer: *=sɪh*

The allocutive agreement markers for indicative utterances, *=o’sh* and *=o’re*, occur on matrix verbs in the overwhelming majority of complete utterances in the corpus. However, if a speaker wishes to emphasize their point, they may choose to use the intensive complementizer *=sɪh* instead. This complementizer is homophonous and semantically similar to the intensifier suffix *-sɪh* described in §4.2.2.

Instead of intensifying the action or the state, as the suffix *-sɪh* does, the intensive complementizer intensifies the entire proposition. The use of this enclitic can indicate that the speaker wishes to emphasize their point, or that they are vouching for the veracity of the statement. Both Hidatsa and Crow have a similar clause-final element: *=sht* in Crow (Graczyk 2007: 394), and *=shd* in Hidatsa (Park 2012: 231). Both of these forms are reflexes of the Proto-Siouan augmentative *-xtE, whereas the intensive complementizer in Mandan comes from the Mandan verb *sɪh* ‘be strong.’ Several examples of the intensive complementizer appear in (4.3.5.11) below.

(167) Examples of the intensive indicative complementizer *=sɪh*

- a. *minís waká’kasɪh*
wrɪs wa-ka’=ka=sɪh
horse 1A-possess=HAB=INTS
'I used to have a horse' (Mixco 1997a: 27)

4.3 Enclitic field

- b. “*Okípa*” *wáa’eeheenixanashkasíh*
 okipa *waa-ee-hee=rjx=rash=ka=sjh*
 Okipa.ceremony *NEG-PV-say=NEG=ATT=HAB=INTS*
 ‘he never said “Okipa”’ (Mixco 1997a: 29)
- c. *máa’qk íxatanashini* *réehoomaksjh*
 waq’ak i-xat=rash=rj *rEEh=oowaqk=sjh*
 land *PV.INS-look.around=ATT=SS* *go.there=NARR=INTS*
 ‘he went looking around the land once’ (Hollow 1973a: 6)
- d. *tawáa’irukirihs*, *ishák*
 ta-waa-i-ru-kriih=s *ishak*
 AL-nom-PV.INS-INS.HAND-be..lined.up=DEF PRO
 náhka’ehesjh
 rak=ka’ehe=sjh
 SIT.POS=QUOT=INTS
 ‘his staff, it was right there, it is said’ (Hollow 1973a: 7)

This intensive indicative *=sjh* is able to co-occur with evidentials that indicate that the speaker does not have first-hand knowledge of the event in the utterance. However, in a similar way to the definite *=s*, speakers may use *=sjh* to proclaim the truth of the statement. In this way, the intensive indicative produces a stronger assertion than one involving the definite *=s*. This enclitic appears in the corpus rather sparingly. Mixco (1997a: 28) is the first to point out this formative, though he describes it as a combination of the definite *=s* and what he describes as a coordinating conjunction *hij*. In Mandan, *hij* is used as a hedge in discourse, similar to English ‘uh,’ ‘um,’ or ‘well.’ Mixco translates it as ‘and,’ but it is not a true coordinator or sentence connector. Hollow (1973a,b) recognized this and almost never transcribed *hij* in his narratives, which also carried over to him omitting all hedges and filler elements like *hij* from the corpus. The use of instrumentation like Praat allows us to see that there is frication at the end of this formative (Boersma & Weenik 2020). The presence of /h/ after the vowel indicates that it cannot be a series of enclitics, but a single element that comes from a reanalysis of the word *sjh* ‘be strong.’

4.3.5.12 Causal complementizer: *=so’nik*

The causal complementizer in Mandan is often used where ‘because’ or ‘since’ would be used in English. The enclitic *=so’nik* indicates that a subordinated proposition B has happened as a result of proposition A being the case. We can see examples of this subordinator in the data below.

4 Verbal morphology

(168) Examples of the causational complementizer =so'nik

- a. *wáashinashso'nik*, *q't* *kirúto'xere'sh*
waa-shi=rash=so'rik a't k-rut=o'xE=o'sh
NEG-be.good=ATT=COMP.CAUS DEM.ANAP MID-eat=DUB=IND.M
'since he is no good, he will not get to eat that' (Hollow 1973a: 43)
- b. *koshúykas* *míih*
ko-shuukas=s wíjh
3POSS.PERS-male's.younger.brother=DEF woman
áakiso'nik, *ílkxqhini...*
aa-ki=so'rik i-kxah=rí
PV.TR-arrive.back.here=COMP.CAUS PV.INS-laugh=ss
'since his brother brought a woman back, he was laughing at him and...' (Hollow 1973a: 73)
- c. *karóotiki*, *kú'hso'nik*, *má'keroomako'sh*
ka=oote=ki k'-uuh=so'rik wá'kE=oowąk=o'sh
PROV=EVID=COND 3POSS.PERS-wife=COND.CAUS lie.AUX=NARR=IND.M
'and so, because she was his wife, he stayed there' (Hollow 1973b: 28)
- d. *íwapashiriihso'nik*, *óshi'sh*
i-wa-pa-shriih=so'rik o-shi=o'sh
PV.INS-1s-INS.PUSH-think.about=COMP.CAUS PV.IRR-be.good=IND.M
'because I thought it over, it will be good' (Hollow 1973b: 210)

Clauses containing =so'nik cannot exist without a superior clause. That is, the causative complementizer introduces a reason for why the following proposition is the case. Without a superordinate clause, a clause bearing =so'nik is an incomplete utterance.

Like other complementizers, =so'nik appears to contain a fossilized remnant of the copula ó' 'be.' At some earlier stage in Mandan's development, this sequence was composed of three distinct elements: /s=o'=rjik/, where =s is the definite evidential, o' is 'be,' and =nik is the iterative complementizer. It is not clear how an iterative marker fits within the semantics of a causal subordinator like =so'nik, though it could be the case that =nik was at one point semantically broader and could be used for different kinds of subordination.

4.4 Formative ordering

Over the course of this chapter, I have described the range of morphology present on Mandan verbs. While Mandan has a large inventory of prefixes, suffixes, and

4.4 Formative ordering

enclitics, its relatives Crow and Hidatsa boast a larger array of verbal morphology, as does Mandan's more distant cousin, Lakota. Mandan has a greater amount of distinct verbal morphology than other Siouan languages, like Tutelo or Biloxi. It is not immediately clear why Mandan has a smaller morphological inventory (excluding allomorphy) than other Siouan languages; this inventory size could be restricted by the fact that I have had to rely on a corpus elicited by other researchers that consists of traditional narratives. It is quite possible other enclitics had existed in contemporary Mandan, but would only likely have come out in conversation, and as such, these potential verbal morphological items not reflected in the corpus or in this book. The lack of L1 Mandan speakers means that there will likely be verbal morphology that was simply never recorded and thus lost.

Earlier in this chapter, I stated that prefixes in Mandan always occur in a proscribed order. This order is typically described as being templatic, in that we can conceptualize each prefix fitting in a particular slot in a template. This template appeared in Table 4.1, which is repeated below.

Table 4.7: Prefix field in Mandan

11	10	9	8	7	6	5	4	3	2	1	0
REL	NEG	UNSP	1PL	PV.IRR	PV.LOC	1SG	2SG	SUUS	ITER	INS	STEM
					PV.INS		2PL	MID	INCP		
					PV.TR			RECP			

Nowhere in the corpus do we see exceptions to this template. Likewise, we see some suffixes appear in a proscribed order. For example, the intensifier suffix *-sijh* is always closer to the stem than the augmentative suffix *-xte*. Some suffixes, like the collective suffix *-aaki* is so restricted in its use that there are simply no other instances of another suffix occurring alongside it to gauge how they would be ordered. As such, it is difficult to make a complete template for the suffix field in Mandan without having an L1 speaker to render grammaticality judgments. Nonetheless, the fact that certain suffixes must appear in specific orderings with respect to one another (e.g., the augmentative must always follow the intensifier and never the other way around) is consistent with the suffix field also being templatic in nature.

In this discussion of templatic morphology in Mandan, it has been assumed that the template is immutable. This observation holds for prefixes and true suffixes, but not so for enclitics, which do not have the same fixed ordering. I argue that enclitic order reflects the semantico-syntactic configuration of a proposition

4 Verbal morphology

and that a change in enclitic order reveals the scopal relationships between that enclitic and its constituents.

In the examples below, we see two examples of Mandan sentences. The prospective aspectual enclitic *=naate* appears in both, but its ordering with respect to subject marking and negation is different. This aspectual enclitic is shown in bold, the subject enclitic is underlined, and the negative enclitic appears with a double underline. The purpose of highlighting these various enclitics is to show that their ordering with respect to one another. Given that I have argued above that the ordering of enclitics reflects the underlying structure (contrary to the ordering of affixes), the differing orders must therefore reflect differing underlying structures.

(169) Variable positioning of enclitics

- a. *wáa'okikashkaxinashanaatekere'sh*
waa-o-ki-kashka=xí=rásh=ráqtE=krE=o'sh
 NEG-PV.IRR-MID-be.same=NEG=ATT=PRSP=3PL=IND.M
 'they **almost** were not sort of the same' (Mixco 1997a: 30)
 Verb << Negation << Aspect << Subject
- b. *wáaraky'karaanitinixanaate'sh*
waa-ra-kú'=krE=rít=ríx=ráqtE=o'sh
 NEG-2A-give=3PL=2PL=NEG=PRSP=IND.M
 'you (pl.) **just about** did not give it to them' (Hollow 1970: 468)
 Verb << Subject << Negation << Aspect

In (169a), the negative enclitic appears immediately after the verb root and before the prospective aspectual enclitic, which in turn appears before the third person plural subject marker. This order indicates that the subject is more prominent in the structure than the aspectual, and that the negation is only scoping over the proposition (i.e., 'be the same'), giving us a statement along the lines of 'they almost were not the same'.

A drastically different enclitic order appears in (169b), where the prospective enclitic appears after all plural marking, both subject and object, as well as after the negation enclitic *=nix*. Just as we saw above, this enclitic order indicates what is scoping over what. The aspectual is farthest away from the stem, indicating that it is scoping over all other projections subordinate to it. Negation appears farther away from the stem than subject plural marking, which likewise signifies that the entire proposition involving the subject is being negated, not just the

4.4 Formative ordering

verb. Where as negation appeared as the first postverbal element in (169a), it appears much farther into the enclitic field in (169b). This enclitic order provides a reading closer to ‘it was almost not the case that you gave it to them.’ This reading is similar to the free translation that Hollow (1970: 468) provides, but differs slightly to emphasize that the prospective aspectual is scoping over the entire proposition, rather than just the act. This difference is subtle and could have been difficult to articulate, which is why it was not encoded as such in the transcribed data.

The data above show that order of enclitics in (169) above is far from random. Both the negation enclitic and the prospective aspectual enclitic in these examples illustrate where each of these functional projections are in the structure and over what they have scope. The fact that negation is marked immediately after the first but before subject marking in (169a) shows that negation appears low in the structure, scoping over just the verb, while its presence after the subject plural marker in (169b) means that negation is taking place much higher in the structure and has scope over not just the verb but the whole inflectional phrase. Similarly, the prospective aspectual enclitic in (169a) appears before the subject plural marker, which indicates that this aspect has scope over the verb but not the entire proposition. We can contrast this limited scope reading with a wide scope reading in (169b), where the aspectual enclitic appears after all person marking and negation, showing that it has scope over the entire proposition.

I argue in Kasak (2019) that enclitics in Mandan are neither ordered in a template nor ordered at a whim. Rather, the ordering of enclitics corresponds to the intended semantics of what kind of scope that enclitic has over the other elements in verbal complex. Some of the changes in enclitic order have very small effects on the reading by a speaker, much in the same way that altering the order of adverbs in English can affect their semantics in slight ways. We can see in the examples below in (170) how shifting the word *only* around in a sentence can change the meaning, sometimes subtly, and sometimes in a major way.

(170) Changing semantics through adverb placement

- a. I *only* want a cup of coffee.
- b. I want *only* a cup of coffee
- c. I want a cup of *only* coffee

In (170b), the placement of *only* indicates that there is something that I want, and the only thing it is is a cup of coffee. We can contrast this sentence with (170a), where I am justifying my reason for being somewhere: e.g., of all the reasons why

4 Verbal morphology

I am here at the coffee machine, I am only here because I want a cup of coffee, and not because I want to eavesdrop on my two coworkers sitting near it in the breakroom. Likewise, (170c) differs from the previous two examples in that I am establishing that I want a cup of something, and only coffee will do (i.e., not water, not tea, not juice, etc.). This slight change in word order in English is analogous of the effect that moving an enclitic around in Mandan has. In general, object plural markers are closer to the verb stem than aspectual enclitics are, subject plural markers are farther away from the stem than aspectuals are, and negation will usually occur between aspectuals and subject marking. However, as we see above in (170), small changes to this order can have an effect on the intended reading of an utterance.

5 Nominal morphology

This chapter focuses on the kind of morphology seen on nouns or associated with nominal elements. Unlike verbs, nominal elements in Mandan tend to bear minimal morphology. What morphology that does appear directly on nouns is typically that of possession marking, though there is a limited set of morphology that is shared between nouns and verbs.

The preponderance of grammatical descriptions of Mandan and of other Siouan languages are investigations of the array of formatives that appear on verbs. This makes sense, given the fact that verbs carry a much greater information load in Siouan languages than nouns do. However, this fine-toothed comb approach to the analysis of verbal morphology often resulted in minimalistic treatments of the affixal and enclitic morphology associated with nouns, including that of elements associated with nouns, such as postpositions.

This chapter aims to rectify this gap in the literature by describing aspects of nouns and morphology related to nouns. First, the chapter presents the processes by which nouns are formed or modified in §5.1, then how possession is marked in §5.2. Ways to refer to people directly are described in §5.3, as well as how free pronominal elements appear in §5.4. Quantifiers and numerals appear in §5.5. In §5.7, I give an overview of the postpositions that occur in Mandan in §5.6. I conclude this chapter by elaborating on how deictic elements express when or where something is, as well as verbs associated with deixis.

5.1 Noun derivation

There is often discussion at annual Siouan and Caddoan Languages Conferences regarding the status of nouns in Siouan languages. In many cases, what we might consider a noun in a Siouan language is ultimately derived from a verb or even is really a relative clause. Mandan is no exception to this generalization, as a large number of items that are treated as nouns in the syntax ultimately stem from some kind of nominalized verbal construction.

Putting more complicated morphology aside for the moment, there are certainly many lexical items in Mandan that are uncontroversially nouns. Such

5 Nominal morphology

nouns synchronically consist of an unanalyzable root, typically of one or two syllables. Stems longer than two syllables are usually the result of some historical compounding or combination of multiple morphological items, but no longer have any analyzable internal structure to modern speakers.

(1) Monosyllabic nominal roots in Mandan

- a. *á'p* 'leaf'
- b. *háp* 'day'
- c. *íi* 'blood'
- d. *múx* 'cellar, basement, cache'
- e. *xqh* 'grass, hay'

(2) Disyllabic nominal roots in Mandan

- a. *istúh* 'night'
- b. *kahót* 'prairie'
- c. *kíipsqq* 'painted turtle'
- d. *náaku* 'road, path, way'
- e. *páqhi* 'porcupine'

(3) Trisyllabic nominal roots in Mandan

- a. *hqáxuraa* 'bat (flying mammal)'
- b. *Ihqtu* 'Lakota, Yankton Sioux'
- c. *sháaxkuxke* 'peppermint'
- d. *wéehinuu* 'spring, springtime'
- e. *wíiratqq* 'enemy'

Like other Siouan languages, the two principal manners of adding new items to the Mandan lexicon is through morphological derivation and compounding. Morphological derivation is treated in §5.1.1, and compounding is addressed in §5.1.2.

5.1.1 Derivational morphology

The most common method of deriving a noun is through the addition of morphology before or after its root. This subsection elaborates upon the various morphological items involved in this process.

5.1 Noun derivation

5.1.1.1 Prenominal prefixes

The majority of nominal derivation takes place prefixally in Mandan. There is an overlap between these prefixes and those commonly employed in verbal morphology. Possessive prefixes have been omitted here, as they are discussed in greater depth in §5.2. A list of derivational prefixes appear below.

(4) List of prenominal morphology

/i-/	instrumental nominalizer
/ka-/	agentive marker
/ko-/	relativizer
/o-1/	irrealis nominalizer
/o-2/	locative nominalizer
/waa-/	nominalizer

The information that follows provides examples of how these particular morphological items are used in the corpus. Relevant morphology appears in bold in the data below.

5.1.1.1.1 Instrumental nominalizer *i-*

The instrumental nominalizer *i-* is homophonous with the instrumental preverb *i-* previously discussed in §4.1.1.4.1.4. Both intstrumental prefixes carry similar semantics, as they indicate that there is some argument that is being used to do an action. The main difference between these two *i-* prefixes is that this nominalizer acts to form a kind of relative clause that involves an instrument.¹ We can see examples of nominals formed with the instrumental nominalizer below.

(5) Examples of the instrumental nominalizer *i-*

- a. *ímashut*
i-wašhut
PV.INS-clothe
‘clothing’

¹Under the analysis that this nominalizer is really just another use of the instrumental preverb, the morphological glossing for such constructions will continue to use PV for preverb instead of making a separate abbreviation for its use as a nominalizer. These constructions are more accurately analyzed as headless relative clauses: i.e., the instrumental nominalizer + X is really ‘the thing with which one Xes or is Xed.’

5 Nominal morphology

- b. *ikate*
i-ka-te
PV.INS-INS.FRCE-pound
'cherry grinder pestle'
- c. *i'ah*
i-ah
PV.INS-be.covered
'skin, shell'
- d. *ihička*
i-hič=ka
PV.INS-drink=HAB
'pipe'²
- e. *ikatehere*
i-ka-te#hrE
PV.INS-INS.FRCE-pound#CAUS
'pemmican'
- f. *wa'ípteh*
wa-i-ptEh
UNSP-PV.INS-run
'automobile'

In all of the examples above, we see that the noun is the result of some relativized clause. For example, the data in (5a) is commonly just glossed as 'clothing' by Mandan speakers, but its meaning is closer to 'the thing with which one is clothed.' The other examples can likewise be broken down in this manner: i.e., (5b) is 'the thing with which one grinds,' (5d) is 'the thing with which one smokes,' and so on. Many noun in Mandan are derived through this instrumental nominalizer, and it is fully productive. Novel words, such as the word for 'automobile' [lit. 'the thing that runs with something'] in (5f), commonly make use of *i*.

Mandan is not unique in the Siouan family for employing this preverb in this way. [Graczyk \(2007: 48\)](#) describes the instrumental in Crow as having a similar behavior, we likewise see it in Lakota ([Ullrich & Black Bear 2016: 440](#)), and there are examples of nominalizations with *i*- in Tutelo as well ([Oliverio 1997: 146f](#)).

²Mandan speakers 'drink' smoke. There is no separate verb for the action of smoking tobacco.

5.1 Noun derivation

5.1.1.1.2 Agentive marker *ka-*

The agentive marker *ka-* is used with verbs to indicate that someone is the doer of an action. This prefix is seen almost exclusively on active verbs, where the addition of *ka-* is roughly equivalent to the English *-er* suffix. We can see examples of this prefix in

(6) Examples of the agentive marker *ka-*

- a. *karóore*
ka-roo=E
AGT-speak=sv
'a speaker' (Kennard 1936: 15)
- b. *karóokas*
ka-roo=ka=s
AGT-speak=HAB=DEF
'the speaker' (Kennard 1936: 15)
- c. *kakíkų'teka*
ka-kikų'tE=ka
AGT-help=HAB
'helper' (Hollow 1973a: 123)
- d. *karókahashka*
ka-ro-ka-hash=ka
AGT-1S.PL-INS.FRCE-slaughter=HAB
'the one who slaughters us' [lit. 'our slaughterer'] (Hollow 1973a: 146)
- e. *katánishkerek'a'na*
ka-ta-rjsh=krE#ka'=rą
AGT-AL-medicine=3PL#possess=TOP
'owner of medicine' (Kennard 1936: 15)
- f. *kamánapkeres*
ka-wa-rap=krE=s
AGT-UNSP-dance=3PL=DEF
'the dancers' (Kennard 1936: 15)
- g. *káakanake*
k-aaki#rąk=E
AGT-be.on.top#SIT.POS=SV
'a rider' (Kennard 1936: 15)

5 Nominal morphology

- h. *ka’i’qutkas*
 ka-i-qut=ka=s
 AGT-PV.ORD-be.first=HAB=DEF
 ‘the head, leader’ (Treichter 2012a: 249)

Many of these agentive constructions also feature the habitual marker *=ka*. We can see a minimal pair in (6a) and (6b), where the first example is a very generalized ‘speaker’: i.e., someone who is speaking. However, the use of the habitual *=ka* in (6b) indicates that this is an action this agent does habitually or regularly. Kennard (1936: 15) even qualifies this difference by adding that the data in (6b) refers to “one who holds that office.” Also note that *ka-* has an allophone /k-/ before stems beginning with long vowels, which we see in (6g). This syncope does not occur when added to stems beginning in short vowel, as we see in (6h).

Hollow (1970: 441) states that all instances of agentive *ka-* must be accompanied by the habitual *=ka*, which he calls a ‘nominal suffix.’ The data in Kennard (1934, 1936), as well as data he recorded in his own narratives later on (Hollow 1973a,b) show that most instances of *ka-* do coincide with *=ka*, but it is not a requirement: i.e., this is not a circumfix; it is a prefix and a possible enclitic that depends on the context of how regularly one does that action.

The origin of the agentive *ka-* seems to align with the Proto-Siouan distal pronoun **ka* ‘that one far away, there, then’ It likely functioned as a free element in earlier stages of development, eventually becoming associated with describing ‘that one’ person doing an action. Later, it became reanalyzed as being verbal morphology, only to eventually be associated with nominal morphology.

5.1.1.3 Relativizer *ko-*

The relativizer has been described previously in §4.1.2.6, where its use in verbal morphology is on display. While the relativizer *ko-* certainly co-occurs on verbs, it is treated syntactically as a noun and can take nominal morphology as well. It is common to see the definite article on nouns bearing *ko-*, and words with *ko-* can also act as nouns within a postpositional phrase. We can see examples of this verb-cum-noun status in the examples below.

(7) Examples of the relativizer *ko-*

- a. *ko’qutaahqkt ó’harani*
 ko-qutaahqk=t o’#hrE=r̩
 REL-east=LOC be#CAUS=SS
 ‘from one in the east’ (Hollow 1973a: 109)

5.1 Noun derivation

- b. *kotúkerekas*
 ko-tu=krE=ka=s
 REL-be.some=3PL=HAB=DEF
 'the ones that usually have some' (Hollow 1973b: 84)
- c. *komárootkis*
 ko-wq-rootki=s
 REL-1s-hit=DEF
 'the one who hit me' (Hollow 1970: 452)
- d. *koxamáhsjh*
 ko-xwqh-sjh
 REL-be.small-INTS
 'the really young one' (Trechter 2012a: 31)

The examples above feature morphology we associate with verbs, such as in (7c) 'the one who hit me,' where there is a first person stative marker. However, there is also a definite marker, showing that there is a specific person to whom the speaker is referring. The data in (7a) provides further support for *ko-* behaving as a nominalizer as the relativizer has converted a postpositional phrase *úytaahqkt* 'in the east' into a noun, which then can be part of another postpositional phrase that is headed by *ó'harani* 'from.' The fact that *ko'úytaahqkt* is able to be the complement of a postpositional phrase is evidence that it is not a verb anymore, but a nominal element that is able to be selected as a complement of a postposition.

5.1.1.4 Locative nominalizer: *o*-₁

Earlier in §4.1.4.1.8, I describe the use of the locative preverb. Much as we see in §5.1.1.1 about the relationship between the instrumental preverb and the instrumental nominalizer in this chapter, so too can we connect the locative preverb to the locative nominalizer. Nominalized constructions involving *o-* act as headless relative clauses that are treated as nouns.

- (8) Examples of the locative nominalizer *o*-
- a. *óraxkaps*
 o-ra-xkap=s
 PV.LOC-INS.FOOT-be.stuck=DEF
 'where he was stuck' (Hollow 1973a: 46)

5 Nominal morphology

- b. *ókiruskopka*
o-k-ru-skop=ka
PV.LOC-MID-INS.HAND-be.crooked=HAB
'the place where the river bends' (Hollow 1973a: 47)
- c. *ótah*
o-tah=t
PV.LOC-be.cool=LOC
'in the place where it is cool' (Hollow 1973a: 53)
- d. *ta'ósukanasha'shka*
ta-o-suk=rash=a'shka
AL-PV.LOC-exit=ATT=PSBL
'his place where he can come out' (Hollow 1973a: 98)
- e. *ómaniitaa*
o-wa-rij=taa
PV.LOC-1A-walk=LOC
'at the place where I walk' (Hollow 1973a: 114)
- f. *óranuunihinit*
o-ra-ruurih=rj=s
PV.LOC-2A-be.there.PL.AUX=2PL=DEF
'the place where you all are' (Hollow 1973a: 130)

Translations of words involving this nominalizer are often translated as 'where X happens' or 'the place where so-and-so Xed.' We can see examples of this above. The data in (8) have the same behaviors as those previously seen for the instrumental nominalizer *i*-, where any verbal morphology from the intended proposition has acquired nominal morphology on the edges of the word. For example, we can see in (8a) and (8f) that the speaker is indicating a specific place, so there is overt use of the definite article =s on this word, indicating that it is being treated as a noun. Likewise, we see postpositions applied to the nominalized element in (8c) and (8e), which is something we expect to be possible for nouns and not verbs.

5.1.1.5 Irrealis nominalizer: *o*-₂

The irrealis preverb *o*- is described in detail in §4.1.1.4.2, and like other preverbs, there is a nominalizer counterpart to it. It is something of a catch-all nominalizer, as it is used in a wide variety of situations. This irrealis nominalizer is a very common element in the corpus. Certain constructions involving *o*- make reference

5.1 Noun derivation

to a time (i.e., ‘the time when X happens or someone Xes’), but it appears to be a more generalized nominalizer: i.e., ‘that which Xes.’ We can see examples of *o-* in the data in (9) below.

(9) Examples of the irrealis nominalizer *o-*

- a. *ókso*
 o-kso
PV.IRR-spit
 ‘saliva’ (Hollow 1970: 121)

b. *ópuqse*
 o-puqse=E
PV.IRR-be.striped=sv
 ‘stripes, spots, pinto horse’ (Hollow 1970: 160)

c. *wáa’onaaka*
 waa-o-rąąka
 NOM-**PV.IRR-be.new**
 ‘something new, fresh’ (Hollow 1970: 165)

d. *óshikere*
 o-shi=krE
PV.IRR-be.good=3PL
 ‘the best ones’ (Hollow 1973b: 252)

e. *ó’ihekeshka*
 o-i-hek-eshka
PV.IRR-PV.INS-know-SMLT
 ‘the one that knew’ (Hollow 1973b: 257)

f. *Manápushek Óra’tak Mínaks*
 wrą#pushek o-ra’-tak wịrąk=s
 tree#juneberry **PV.IRR-INS.HEAT-be.ripe** orb=DEF
 ‘June’ [lit. ‘the month when juneberries are ripe’] (Hollow 1970: 161)

This nominalizer has a wide range of uses. It is not restricted to temporal readings, like the one we see in (9f). The *o-* is able to create nouns out of verbs like in (9a) where there is no locative or instrumental reading: i.e., the noun ‘saliva’ is literally ‘what one spits.’ We see that *o-* can also co-occur with another nominalizer, the *waa-*, which we see in (9c). The semantics of this are not exactly redundant, as the word ‘something new’ is better translated as ‘something that

5 Nominal morphology

would be new' or 'something that will be new.' See §5.1.1.6 for more information on the *waa-* nominalizer.

This irrealis nominalizer is cognate with the Hidatsa relative marker *aru-*, which has an allomorph *oo-* before stems beginning with /t/. Assuming that Mandan shares a more recent common ancestor with Hidatsa and Crow, it is likely the case that Hidatsa preserves an older system of nominalization that involves the irrealis marker, and that the Mandan irrealis marker has been influenced by the locative preverb *o-*, collapsing the length distinction between the two and creating homophony. Mandan also shares a cognate with Hidatsa in the form of the relativizer *ko-*, which is *agu-* in Hidatsa. Hidatsa has yet another allomorph *oo-* before /k/-initial stems, once again connecting Mandan *o-* to being a more general relativizer that also results in the ensuing relativized clause being treated as a noun in the syntax.

5.1.1.6 Nominalizer: *waa-*

The nominalizer *waa-* is related to the Proto-Siouan nominalizer **waa-*. As previously discussed in §4.1.2.4, this *waa-* does have a non-prefixal form that acts as an unspecified argument marker of sorts, often being translated as 'something,' 'someone,' or 'somewhere.' It seems to originate as an unbound formative, likely being a free pronominal in Proto-Siouan or Pre-Proto-Siouan. When used as a nominalizer, it can appear with either stative or active verbs, and it often behaves somewhat like a subject: i.e., 'something that Xes' or 'something with the quality X.'

(10) Examples of the nominalizer *waa-*

- a. *wáaxikxte*
waa-xik-xtE
NOM-be.bad-AUG
'something really bad' (Hollow 1973a: 46)
- b. *wáashootenea*
waa-shoot=ee=rq
NOM-be.white=DEM.DIST=TOP
'something white' (Hollow 1973a: 106)
- c. *wáa'isek*
waa-i-sek
NOM-PV.INS-do
'a job' (Trechter 2012a: 229)

5.1 Noun derivation

- d. *ptawáa’irokes*
p-ta-waa-i-roke=s
1POSS-AL-NOM-PV.INS-contain=DEF
'my container' (Treichter 2012a: 118)
- e. *tawáa’irukiriihs*
ta-waa-i-ru-kriih=s
AL-NOM-PV.INS-INS.HAND-be.lined.up=DEF
'his staff' (Hollow 1973a: 7)
- f. *wíikapus*
wV-i-ka-pus
NOM-PV.INS-INS.FRCE-be.lined.up
'pencil, pen' (Hollow 1970: 159)
- g. *wóopashe*
wV-o-pa-shE
NOM-PV.IRR-INS.PUSH-grasp
'offering of corn' (Hollow 1970: 229)
- h. *wáa’atxi’hs*
waa-at#xi’h=s
NOM-father#be.old=DEF
'the President' (Hollow 1970: 317)
- i. *ósu* ~ *wóosu*
o-su wV-o-su
PV.LOC-be.a.hole NOM-PV.LOC-be.a.hole
'hole' ~ 'post hole' (Hollow 1970: 131)

Before preverbs, the nominalizer *waa-* has an allomorph /wV-/, which has the effect of lengthening short vowels. There are no recorded instances of *waa-* appearing before the transitivizer preverb *aa-*, so it is unclear if *waa-* would have an allomorph /w-/, similar to what have have seen previously in the description of the unspecified argument marker in the previous chapter.

In each of the words above in (10), each word can be parsed as literally meaning 'something does does the active verb' or 'something that has this quality.' We can see this in (10d), 'my container,' where the Mandan word means 'my something with which one stores things.'

In addition to being used with verbs, *waa-* can combine with other nouns. We see this in (10h), where the word *átxi’h* 'grandfather' [lit. 'old father'] takes the nominalizer and the definite article. This word is translated as 'the President [of

5 Nominal morphology

the United States]’ in the context of Hollow’s (1970) dictionary, but this term is also used as a metonym for the United States government.³ Thus, *waa-* is not purely a nominalizer in the sense that it turns a verb or clause into a noun, but it can also turn nouns into nouns that often have a more abstract connection to their stems, as we see in the case of ‘grandfather’ being the root of ‘government.’ We see a similar process in (10i), where the word for ‘hole’ is *ósu*, but a larger, deeper post hole is *wóosu*, consisting of *waa-* plus *ósu*. Thus, while this nominalizer can turn a non-abstract noun into an abstract noun, the resulting noun does not inherently need to be abstract.

5.1.1.2 Postnominal suffixes

Much like the prenominal domain, the morphology found in the postnominal domain in Mandan has a considerable overlap with that of the postverbal domain. There are several suffixes and enclitics that appear on nouns that play similar roles on nouns. Most of the suffixes discussed in §4.2 are really nominal suffixes rather than verbal suffixes. Those suffixes are restated below, plus some additions that are exclusively found on nouns and other nominal elements.

(11) List of postnominal morphology

<i>-aaki</i>	collective 1 (COLL)	(see §5.1.1.2.1.1)
<i>-esh</i>	similitive 1 (SMLT)	(see §5.1.1.2.3.1)
<i>-eshka</i>	similitive 2 (SMLT)	(see §5.1.1.2.3.2)
<i>-oshka</i>	emphatic (EMPH)	(see §5.1.1.2.2)
<i>-sha</i>	collective 2 (COLL)	(see §5.1.1.2.1.2)
<i>-sih</i>	intensifier (INTS)	(see §5.1.1.2.4)
<i>-xte</i>	augmentative (AUG)	(see §5.1.1.2.5)

5.1.1.2.1 Collective suffixes: *-aaki*, *-sha*, *-shka*

There are really two competing collective suffixes in Mandan. Each of these suffixes is very restricted in where they can appear.

5.1.1.2.1.1 Collective 1: *-aaki*

The first collective suffix *-aaki* is attested with a single stem: *numá’k* ‘person, man.’

³Other Indigenous people have a similar connection in their language between the term for ‘grandfather’ and the government, specifically the United States government (cf. Lakota *thunjkášilayapi* ‘U.S. government, President of the U.S.’ [lit. ‘grandfathers, ancestors’]).

5.1 Noun derivation

(12) Collective 1 examples

- a. *numá'kaaki máamikoomako'sh*
ruwá'k-aaki waa-wík=oowák=o'sh
person-COLL some-be.none=NARR=IND.M
'there were no people' (Hollow 1973a: 178)
- b. *áakinuma'kaaki*
aaki#ruwá'k-aaki
be.above#person-COLL
'Native American(s)' (Treichter 2012b: 220)⁴
- c. *ómahq numá'kaaki*
owáháq ruwá'k-aaki
Omaha person-COLL
'Omaha tribe' (Hollow 1970: 431)

This suffix *-aaki* originates from the stative verb *áaki* 'be above.' This verb appears in compounds where it serves to intensify another stative verb, but this pattern does not seem to be productive in modern Mandan. Furthermore, *áaki* serves as the initial element in all such compounds.

(13) Compound with *áaki*

- áakana'ro'sh*
aaki#rā'=o'sh
be.above#ache=IND.M
'he is sick' (Hollow 1970: 168)

It is possible that the collective *-aaki* could have been used metaphorically to describe a large number in the past. This suffix is not otherwise productive in modern Mandan.

5.1.1.2.1.2 Collective 2: *-sha*

This collective suffix comes from the Proto-Siouan collective **-sa*. This suffix is restricted to numerals. It is often accompanied by an English translation along the lines of 'X of them' or 'all X of them,' the latter especially being the translation used with the collective *-sha* co-occurs with the directional preverb *i*.

⁴This word for 'Native American' is a contraction of the term *máá'qk áaki numá'kaaki* 'people on the land.' This term is cognate with the Hidatsa term for Native American (*awa'yaagaaruxbaaga* 'people on the land,' and is similar to terms for indigenous peoples found in nearby languages: e.g., Lakota *ikčé wičáša* 'ordinary people.'

5 Nominal morphology

(14) Examples of collective *-sha*

- a. *núupsha*
r̥uŋp-sha
two-COLL
'both of them, two of them, twins' (Hollow 1970: 481)
- b. *kixq̥uhsha*
kixq̥uh-sha
five-COLL
'five of them' (Hollow 1970: 481)
- c. *náaminisha*
raawri-sha
three-COLL
'three of them' (Hollow 1970: 481)
- d. *nunáaminisha shí'sh*
ru-rraawri-sha shi=o'sh
1A.PL-three-COLL be.good=IND.M
'the three of us are good' (Hollow 1970: 481)

This collective suffix often co-occurs with the ordinal preverb *i-*.

(15) Collective suffix with ordinal preverb

- a. *ítoopsha* *ihaa'aakit*
i-toop-sha i-haa#aaki=t
PV.ORD-four-COLL PV.DIR-cloud#be.above=DIR
keréehkereroomako'sh
krEEh=krE=oowąk=o'sh
go.back.there=3PL=NARR=IND.M
'all four of them returned to heaven' (Hollow 1973a: 175)
- b. *ínuupsha* *tasúke* *túkerek*
i-ruŋp-sha ta-suk=E tu=krE=ak
PV.ORD-two-COLL 3POSS.AL-child=sv be.some=3PL=DS
'both of them had children' (Hollow 1973a: 111)
- c. *ínuupsha* *ráse* *ísekwahere'sh*
i-ruŋp-sha ras=E i-sek#wa-hrE=o'sh
PV.ORD-two-COLL name=sv PV.INS-make#1A-CAUS=IND.M
'I gave both of them their names' (Hollow 1973a: 64)

5.1 Noun derivation

The collective *-sha* is sometimes accompanied by the suffix *-shka*. This suffix serves to emphasize the collective reading. This suffix comes from the Proto-Siouan suffix **-ska*, which historically a similitive marker. Traces of this **-ska* can be seen in other productive suffixes, like the emphatic *-oshka* or the similitive suffix *-eshka*, or on the interrogative word *tashká* ‘how,’ where *tá* is ‘what.’ The collective suffix can appear with this emphatic *-shka*

(16) Examples of intensified collective suffixes

- a. *ínuupshashkana* *húpe* *ké'ka'rak*
 i-rúup-sha-shka=rá *hyp=E* *ke'ka'ak*
 PV.ORD-two-COLL-INTS.COLL=TOP shoe=sv keep#have=DS
kú'kerek
ku'=krE=ak
give=3PL=DS
 ‘both of them kept shoes for him’ (Hollow 1973a: 109)
- b. *ítoopshashka* *Máarepaaxu* *í'q'taa*
 i-toop-sha-shka *wáq=E#paaxu* *i-q'taa*
 PV.ORD-four-COLL-INTS.COLL eagle=sv#nose PV.DIR-be.closer=LOC
minípashú'ni *réehkereroomako'sh*
wrj#pa-shu'=rj *rEEh=krE=oowák=o'sh*
 water#INS.PUSH-thresh.with.feet=ss go.there=3PL=NARR=IND.M
 ‘the four of them were swimming toward Eagle Nose’ (Hollow 1973b: 295)
- c. *óo* *ó'harani* *numá'kaaki* *húkeres* *sheréekini*
 oo *o'#hrE=rj* *ruwá'k-aaki* *hú=krE=s* *shreek=rj*
 DEM.MID be#CAUS=ss person-COLL many=3PL=DEF war.whoop=ss
tóopshashka *kaháshkereroomako'sh*
toop-sha-shka *ka-hash=krE=oowák=o'sh*
 four-COLL-INTS.COLL INS.FRCE-be.disintegrated=3PL=NARR=IND.M
 ‘from there, the whole lot of people war whooped and slaughtered all four of them’ (Hollow 1973b: 255)

The intensified collective /-sha-shka/ can appear with or without the ordinal preverb *i*. The presence of the preverb does not seem to alter the reading, though it seems to serve to intensify the collective meaning, with the English quantifier ‘all’ often being added to the English translation given by consultants.

5 Nominal morphology

5.1.1.2.2 Emphatic: *-oshka*

The emphatic suffix *-oshka* is historically derived from the free adverbial *óshka* ‘even,’ which itself seems to be composed of *ó* ‘be’ plus the Proto-Siouan similitive **ska*. It is added to nouns to indicate that there is some kind of emphasis on a noun. This differs from the topicalizer enclitic *=na* in that this emphasis marker *-oshka* is most often associated with information that conveys a contrast or surprise, while the *=na* topicalizer serves to bring some entity into the foreground or to remind the speaker of a previous topic.

- (17) Examples of the emphatic suffix *-oshka*

- a. *kí'hini* *tewé'oshka* *wáaka'kina'nix*
 ki'h=rj t-we-oshka waa-ka'#kirq'=rjx
 arrive.back.here=ss WH-INDF-EMPH NEG-possess#tell=NEG
 'she got back and did not tell anyone' (Hollow 1973a: 79)

b. *hi'óshka* *imikshka*
 hi-oshka i-wj̥k-shka
 tooth-EMPH PV.ORD-be.none-INTS.COLL
 'he had hardly any teeth' (Hollow 1973a: 181)

c. *máaxtikoshka* *wáateerehererootiki,*
 wáaxtik-oshka waa-tee#re-hrE=ooti=ki
 jackrabbit-EMPH some-kill#2A-CAUS=EVID=COND
rá'sitnuharani *nuriúusto'sh*
 ra'-st#rj-hrE=rj rj-ruut=t=o'sh
 INS.HEAT-be.roasted#1A.PL-CAUS=SS 1A.PL-eat=POT=IND.M
 'when you kill some jackrabbits, we will roast them and eat it' (Hollow 1973a: 195)

d. *wá'a'oshkanashe* *máatahe* *wahíroote'sh*
 waa-oshka=rash=E wáatah=E wa-hi=ootE=o'sh
 NOM-EMPH=ATT=SV river=SV 1A-arrive.here=EVID=IND.M
 'it is a good thing that I must have gotten to the river' (Hollow 1973a: 36)

There is a difference between this suffix and the free word *óshka* ‘even’ in that the suffix triggers an epenthetic [?] when attached to a vowel-final stem. The word *óshka* ‘even,’ however, requires no such word-level phonological process and can occur after pauses, indicating that it is not a prefix but a word.

5.1 Noun derivation

- (18) Example of *óshka* as a free word

<i>ko-tuhrij̥i=rū=s</i>	<i>u'taa</i>	<i>óshka</i>
3POSS.PERS-mother-in-law=ANF=DEF	be.close=LOC	even
<i>kiná'roomako'sh</i>		
<i>kir̥a'=oo-waqk=o'sh</i>		
tell=NARR=IND.M		

'he even spoke to his mother-in-law' (Trechter 2012a: 182)

We can see the adverbial *óshka* 'even' in (18) above have semantic scope over the entire proposition, not just over the noun phrase. The speaker is expressing shock that this action would even happen, given the fact that it is a taboo in traditional Mandan customs for a man to speak directly to his mother-in-law. Trechter (2012a: 182) remarks in a footnote that this is an indicator that the speaker is quite upset for him to be willing to flout this taboo to speak directly to his mother-in-law. Namely, the semantic scope of this sentence gives the reading 'he *even* spoke to his mother-in-law,' not 'he spoke *even* to his mother-in-law' or 'he spoke to *even* his mother-in-law.'

This suffix also features heavily in a set of free pronominals in Mandan, but more on that will be addressed in the section on pronouns below in §5.4.

5.1.1.2.3 Similitive suffixes: *-esh* and *-eshka*

There are two similitive suffixes used on nouns in Mandan: *-esh* and *-eshka*. Of the two, *-eshka* is better attested in the corpus.

5.1.1.2.3.1 Similitive 1: *-esh*

As previously described in §4.2.3, this term grants a similitive reading to a word. It can also have an almost diminutive reading, as it can be used in references to small amounts of things.

- (19) Examples of the similitive *-esh* with nominals

a. <i>iirapsi'esh</i>	<i>máakeroomako'sh</i>
<i>ii#ra-psi-esh</i>	<i>waqkE=oo-waqk=o'sh</i>
blood#MUT-be.black-SMLT	be.lying.AUX=NARR=IND.M
'a bit of blood that had gone black was there'	(Hollow 1973a: 132)

5 Nominal morphology

- b. *réshka'esh* *ká'nashki*
 reshka-esh ka'=rash=ki
 this.way-SMLT possess=ATT=COND
 'whatever caused this' (Trechter 2012a: 182)

This marker is most often found on verbs and adverbs, not nouns or other nominal elements. It is not clear if this limited distribution reflects the rarity of this formative in conversational speech, or if it is uncommon in all registers.

5.1.1.2.3.2 Similitive 2: *-eshka*

The verbal counterpart to the similitive *-eshka* has been discussed previously in §4.2.3.2. On verbs, this suffix conveys a sense that the action was done in a manner like that of the verb in question. For nouns, however, the similitive has an abstracting effect on the stems onto which they suffix. Examples of this suffix appear below in (20).

(20) Examples of the similitive *-eshka* with nominals

- a. *hápe tóopeshkak* *káare ímaatiht* *súkinista!*
 hap=E toop-eshka=ak kaare i-waqatih=t suk=rít=ta
 day=sv four-SMLT=DS NEG.IMP PV.DIR-outside=LOC exit=2PL=IMP.M
 'don't go outside for four days!' (Hollow 1973a: 199)
- b. *wáamatawe'eshka* *éemanate'sh*
 waa-wa-tawe-eshka ee-w-rá-tE=o'sh
 NOM-1s-not.good-SMLT PV-1s-2A-say.2SG=IND.M
 'you said something bad about about me' (Hollow 1973b: 88)
- c. *óruteshka* *áarupani*
 o-rut-eshka aa-ru-pE=rí
 PV.IRR-eat-SMLT PV.TR-INS.HAND-grind=SS
káakeropxekerekktiki
 k-aa-k-ropxE=krE=kti=ki
 VERT-PV.TR-SUUS-enter=3PL=POT=COND
 'they took only what they needed to eat and brought it back into the house' (Trechter 2012a: 19)

Much like the other similitive *-es*, the *-eshka* suffix tends to be found more often on verbs. When applied to nouns, this suffix can indicate something reminiscent of the verb or noun in the root, but it can also convey a diminutive or limiting

5.1 Noun derivation

sense, as we see in (20a), where the speaker is telling the listener to not go out for four days. Perhaps a more likely translation than the one given by Hollow is to not go out for ‘about’ four days or for ‘something like’ four days. Likewise, we see *-eshka* used (20c) to describe a quantity of food that was ‘just enough.’

5.1.1.2.4 Intensifier: *-sijh*

Like the verbal intensifier described in §4.2.2, the nominal intensifier has the effect of creating nouns that have a intense or prototypical quality. It is relatively uncommon in the corpus, and seems to be associated with coloring a word to have some kind of emotional meaning on the part of the speaker: i.e., the speaker is judging something, expressing surprise or admiration at something, and so forth.

(21) Examples of the intensifier suffix *-sijh*

- a. *shehéksijh*
shekek-*sijh*
coyote-INTS
‘a liar’ (Hollow 1970: 206)
- b. *ijstasijh*
ijsta-*sijh*
middle.of.forehead-INTS
‘the middle of the forehead’ (Hollow 1973a: 131)

While the word *shehék* ‘coyote’ is often used synonymously with ‘liar’ in Mandan, the use of the intensifier in (21a) conveys more of the sense of ‘a real liar’ or a liar in a stronger sense of the word. Likewise, we see *-sijh* used in (21b) after *ijsta* ‘middle of forehead’ to convey that the speaker is referring to the very middle of the forehead or ‘smack-dab’ in the middle of the forehead. In English, speakers rely on extraneous description to convey the sense of intensification that *-sijh* does as a suffix.

5.1.1.2.5 Augmentative: *-xte*

Like the nominal intensifier, the nominal augmentative is not as common as its verbal counterpart. It can be difficult at times to identify whether a speaker is using *-xte* or is just using the stative verb *xté* ‘be big.’ Listening for intonational breaks, pauses, and word-level phonological processes like primary stress help to discern the augmentative from a word that is being described as being ‘big.’

5 Nominal morphology

We can see several examples of the augmentative below, where the prosody of these words excludes the chance of them really being just *xté*; the data in (22) are truly *-xte*.

(22) Examples of the augmentative suffix *-xte*

- a. *miníxuxtekere*
wri#xu-xtE=krE
water#be.shallow-AUG=3PL
'large shallow lakes' (Hollow 1973a: 11)
- b. *mi'xteseena*
wɪ'-xtE=s=ee=rɑ
rock-AUG=DEF=DEM.DIST=TOP
'that big rock' (Hollow 1973a: 18)
- c. *hóxte haráni*
ho-xtE hrE=rɪ
voice-AUG CAUS=SS
'he really hollered' (Hollow 1973a: 46)
- d. *mi'tixtes tanúma'kshikere kihkaráaroomako'sh*
wɪ'#ti-xtE=s ta-ruwɑ'k#shi=krE kihkraa=oowɑk=o'sh
rock#dwell-AUG=DEF AL-man#be.good=3PL look.for=NARR=IND.M
'he looked for the village's chiefs' (Hollow 1973b: 105)

The augmentative can appear on nouns without the English word 'big' in the accompanying translations from Mandan consultants, like we see in (22d). There are also augmentatives used to convey a sense of entirity in (22c), where the translation of 'he really hollered' would more accurately be translated as 'he did it with his whole voice.' We can make the same generalization about the *-xte* in (22d), where the protagonist of a narrative is looking for the chiefs for the entire village.

5.1.2 Compounding

Many words in Mandan are derived from the concatenation of affixal morphology. Compounding, however, is another common process for deriving new words. Nominal compounds fall into two general classes: noun-noun compounds and noun-verb compounds. Primary stress occurs on the initial noun in the compound, even if the result would be a single, light syllable bearing primary stress

5.1 Noun derivation

contrary to the expected stress pattern in Mandan as outlined in §3.6.4.2. However, this pattern is within the bounds of expected Mandan stress assignment once internal word boundaries are taken into account. Primary stress is thus one metric for determining a true compound versus a noun phrase that contains other lexical material.

5.1.2.1 Noun-noun compounds

Noun-noun compounds in Mandan typically are head-final: i.e., the defining element is the final noun in the compound. We can see examples of noun-noun compounds in the data below.

(23) Examples of noun-noun compounds

- a. *pó'i'ahe* 'fish scale' ← *pó* 'fish' + *i'ahe* 'skin, scale, covering'
- b. *húysiropxi* 'cowboy' ← *húysi* 'leggings' + *ropxi* 'leather, hide, skin'
- c. *páqxekaruutka* 'beetle, potato bug, ladybug' ← *páqxe* 'potato, sunchoke' + *karúutka* 'eater'
- d. *máanuxikpa* 'skull' ← *máanuxik* 'ghost + *pá* 'head'
- e. *manárokpuse* 'lynx' ← *manárok* 'forest' + *púse* 'cat'
- f. *minísaakanahka* 'saddle' ← *minís* 'horse' + *áakanahka* 'seat, chair'
- g. *wará'ireexikri* 'kerosene' ← *wará'* 'fire' + *íreex* 'light' + *íkiri* 'grease, oil'
- h. *Éexixtenuma'kaaki* 'Arapaho' ← *éexi* 'belly' + *xté* 'be big' + *numá'kaaki* 'people'

Most noun-noun compounds in Mandan consist of two parsable nouns. There are some words in Mandan, however, that appear to be older compounds than some of those listed above in (23). Several compounds that were formed prior to or just at the advent of the reservation period have slightly different phonological characteristics than many of the compounds seen today. In these older compounds, there is a predictable process whereby stems that end in a short vowel will undergo apocope when the following word begins with a vowel. We can see examples of these older compounds below.

- (24) a. *Mí'tuutaahqkas* 'Mitutanka' (the southernmost Mandan settlement visited by Lewis and Clark) ← *mítí* 'village' + *úytaahqk* 'east' + *=ka* 'habitual aspectual' + *=s* 'definite article'
- b. *istíkirus* 'wash basin' ← *istá* 'face' + *íkirus* 'tub, shower, soap'

5 Nominal morphology

- c. *maná'p* 'leaves, tea' ← *maná* 'tree' + *á'p* 'leaf'
- d. *shúupikiri* 'bone marrow' ← *shúupa* 'shinbone' + *íkiri* 'grease, lard, oil'

These apocopated compounds are in the minority within the corpus. This pattern of deleting the final vowel to prevent hiatus in a compound or serial verb construction is observed in other Siouan languages, such as Crow (Graczyk 2007: 50), Hidatsa (Park 2012: 315), and Lakota (Ullrich & Black Bear 2016: 533), *inter alios*. This lack of apocope in contemporary Mandan compounds appears to reflect a change in the phonology of Mandan from an earlier stage of development that happened sometime in the late nineteenth century, given the paucity of such compounds in neologisms that entered the language around that time that exhibit no evidence of apocope: e.g., 'barrel' is *miní íroke* [lit. 'water container'], not **miníroke*. This lack of apocope suggests that this compound entered the lexicon after this apocope rule for compounds was lost in Mandan. Another possibility is that this rule was already in the process of being lost well before the Mandan people came into contact with Europeans and that only certain high-frequency compounds retained the older system of deleting final short vowels on the first noun to avoid hiatus.

5.1.2.2 Noun-verb compounds

We can contrast this with noun-verb compounds, where compounds are head-initial: i.e., the noun is qualified by the verb. In these kinds of compounds, the verb is stative and has a quasi-adjectival use.

(25) Examples of noun-verb compounds

- a. *áapxase* 'red-winged blackbird' ← *áapxa* 'wing' + *sé* 'be red'
- b. *qsexaa* 'moose' ← *qse* 'horn' + *xáa* 'be spread out'
- c. *wá'txi'hs* 'my grandfather' ← *wá't* 'my father' + *xí'h* 'be old' + =s definite article
- d. *hápxik* 'storm' ← *háp* 'day' + *xík* 'be bad'
- e. *shúthqshka* 'mountain lion' ← *shút* 'tail' + *háshka* 'be long'
- f. *íkirisii* 'butter' ← *íkiri* 'grease, lard, oil' + *síi* 'be yellow'
- g. *írupasanak* 'pistol' ← *írupa* 'gun, rifle, firearm' + *sanák* 'be short, round'
- h. *kóoxte* 'pumpkin' ← *kóo* 'squash' + *xté* 'be big'

As previously discussed in §3.6.4.2, primary stress is used to disambiguate between a true compound and a noun with a stative verb used in an adjectival manner. For example, the word for 'butter' in (25f) is literally 'yellow lard,'

5.2 Possession

and there a single primary stress in the entire compound: i.e., *ikirisii*. A speaker can disambiguate between this compound for butter and a description of some yellow-colored grease or oil with primary stress on both words: i.e., *ikiri síi* ‘yellow grease’ or ‘yellow oil’.

5.2 Possession

Mandan does not have gender on nouns in the sense many languages of the Indo-European or Afro-Asiatic language families do. There is a lexical distinction, however, between whether a noun can be alienable or inalienable in terms of how it is possessed. This quality is lexically determined, and it is not always predictable. The possession class of every noun must be learned. Nichols (1988: 561) notes that these terms are standard usage among many Americanist linguists, but their definitions can be highly variable. For the purposes of this book, I define alienable as a noun that can in some what—physically or metaphorically—be separated from its possessor. An inalienable noun is one where a noun must be inherently possessed by someone.

Inalienable nouns tend to be body parts and kin. Alienable nouns tend to be all other kinds of nouns. These, however, are tendencies, as there are examples of nouns we would expect to be inalienable that bear alienable marking, and *vice versa*, we also have nouns that we could conceive of as not being inherently possessed that do not take alienable marking. This system is inherited from Proto-Siouan, as Parks & Rankin (2001: 108) remark that all Siouan languages distinguish between alienable and inalienable possession.

5.2.1 Inalienable possession

Inalienable possession consists of a closed set of nouns that have a particular pattern for showing possession. These nouns consist almost entirely of body parts and kinship terms, but there are several items of material culture that also fall under this noun class.

There are two inalienable possession paradigms for consonant-initial stems: one that occurs before stems beginning /w/, /r/, and /h/ followed by an oral front vowel (i.e., the resonant paradigm) and all others (i.e., the default paradigm). Vowel-initial stems also have two paradigms: one for those beginning with a high vowel (i.e., the high paradigm), and one for all others (i.e., the non-high paradigm). We can see how possession-marking works in the words *shí* ‘foot, feet,’ *réesik* ‘tongue,’ *éekhuu* ‘sternum,’ and *istá* ‘face’ in Table 5.1 below.

5 Nominal morphology

Table 5.1: Inalienable possession paradigms

	Default	Resonant	Non-High	High
1SG	<i>mishí</i>	<i>wiréesik</i>	<i>wé'khuu</i>	<i>mí'sta</i>
2SG	<i>nishi</i>	<i>riréesik</i>	<i>ré'khuu</i>	<i>ní'sta</i>
3SG	<i>shí</i>	<i>réesik</i>	<i>éekhuu</i>	<i>istá</i>
1DU	<i>nushí</i>	<i>nuréesik</i>	<i>réekhuu</i>	<i>núusta</i>
1PL	<i>nushínite</i>	<i>nuréesikinite</i>	<i>réekhuunite</i>	<i>núustanite</i>
2PL	<i>nishinite</i>	<i>riréesikinite</i>	<i>ré'khuunite</i>	<i>ní'stanite</i>
3PL	<i>shíkere</i>	<i>réékhukere</i>	<i>éekhuukere</i>	<i>istákere</i>

We can see much similarity between the distribution of possessive prefixes on the table above and the verbal pronominal prefixes previously seen in §4.1.2. The default singular prefixes resemble stative prefixes, except for the first person plural possessive, *nu-*, which is identical to the active prefix. As expected, given Mandan having no dedicated third person singular marking. The English translations of these kinds of words in a narrative are often given as general nouns, though the implication is that in Mandan, it is understood that these nouns belong to someone mentioned in the discourse. A table summarizing these possession markers appears below, with the possession markers depicted in underlying representation.

Table 5.2: Inalienable possessive marking

	Default	Resonant	Non-High	High
1SG	/wí-/	/wi-/	/w'-/	/w̥-/
2SG	/r̥í-/	/ri-/	/r'-/	/r̥-/
3SG	/Ø-/	/Ø-/	/Ø-/	/Ø̥-/
1DU	/ru̥-/	/ru̥-/	/rV-~/r-/	/ru̥-/
1PL	/ru̥- =r̥it/	/ru̥- =r̥it/	/rV- =r̥it/~/r- =r̥it/	/ru̥- =r̥it/
2PL	/r̥i- =r̥it/	/ri- =r̥it/	/r'- =r̥it/	/r̥-/ =r̥it/
3PL	/Ø- =r̥it/	/Ø- =krE/	/Ø- =krE/	/Ø- =krE/

The singular resonant prefixes in Table 5.2 all have oral vowels instead of nasal vowels, which preserves the underlying /w/ and /r/. Likewise, we see a contrast between /w'-/ 1POSS, /r'-/ 2POSS, and /r(V)-/ 1PL.POSS for nouns belonging to the non-high vowel paradigm, but underlying nasals for /w̥-/ /r̥-/ and /ru̥-/ respectively. The first person plural possessive for words in the high vowel paradigm have the further peculiarity of causing the initial vowel of the stem to undergo

5.2 Possession

apherisis and lengthening the /u/ of the prefix. This process results in a word like /ru-ista/ 'our faces' becoming *núusta* instead of **nu’ista* or **rísta*. This replacement of the first syllable by /ru-/ even extends to nouns that begin with heavy open syllables: e.g., /ru-ji’ta’ke/ 'our foreheads' Ø *núuta’ke*. Vowel-initial nouns that start with a preverb will be declined in a manner identical to how first person active pronominals are: i.e., /rV-i-washut/ 'our clothing' Ø *ríimashut*. representation.

The second and third person possessive forms all bear their respecting plural enclitics on the table above: i.e., =*nit* for second person plural and =*kere* for third person plural. Plural marking on nouns is quite uncommon and seen as unnecessary if the plurality of a noun is inferred or if it has been previously established. We can see plurality marked on the verb *namáakahinitak* 'you (pl.) reside, live' in the sentence below in (26), for example. The presence of the second person plural enclitic =*nit* indicates that the speaker is taking the fact that he is addressing a group of men into account. In the second sentence, the noun *nitásuknuma’k* 'your young men' bears no plural marking whatsoever; neither the plurality of the noun itself (i.e., 'young men') nor the plurality of the possessor (i.e., 'your (pl.)') are reflected on the noun.

- (26) Lack of plural marking on nouns in a narrative context

<i>Róo</i>	<i>róotaa</i>	<i>namáakahinitak,</i>	<i>shí’sh.</i>
roo	rV-o=taa	ra-waqkah= <i>rijt</i> =ak	shi=o’sh
DEM.MID 1A.PL-PV.LOC=LOC 2A-sit.AUX.HAB=2PL=DS be.good=IND.M			
<i>Tashká’nik,</i>	<i>nitásuknuma’k,</i>	<i>koxamáhanash</i>	<i>máakahe,</i>
tashka=shka’rik	<i>rijt-a-suk#ruwá’k</i>	ko-xwáh=rash	waqkahE
how=DISJ	2POSS-AL-child#man	REL-be.small=ATT	those
<i>óxkakere’sh.</i>			
o-xka=krE=o’sh			
PV.LOC-be.foolish=3PL=IND.M			

'It is good that you (pl.) live together with us here. However, your (pl.) young men, especially those ones who are small, they are foolish.' (Trechter 2012a: 205f)

No plural marking is typically realized on a noun bearing a first person plural possession prefix. Speakers confirm that one can do so, but it is superfluous in almost any context, given the fact that the first person plural prefix itself indicates plurality. One could add the =*nit* enclitic to such nouns to disambiguate between a dual inclusive and a general first person plural reading, but again, speakers have indicated that such a situation is rare enough to warrant only producing

5 Nominal morphology

forms without a plural enclitic in daily speech and in narratives. This is also the case with marking first person plurality on verbs with the *=nit* enclitic; such plural marking may occur a few times within a narrative to reaffirm that the speaker is referring to a group of individuals rather than just a pair consisting of the speaker and addressee, but it is more common to see first person plural verbs without plural marking beyond the first person plural prefix itself. The same symmetry appears to be the case with possessive constructions.

Hollow (1970) makes note of whether a noun belongs to the inalienable class of nouns or not in his dictionary. I encourage the reader to examine that work to explore what kinds of nouns fall into which class. An itemization of all nouns that belong to the inalienable noun class is beyond the scope of the present book. However, the majority of nouns in Mandan fall under the class of alienable nouns. It is especially worth noting that words that are originally inalienable can have an alienable counterpart whose semantics differ. We can see an example of such a doublet in the data in (27) below.

(27) Alienable-inalienable doublet featuring the same root word

- a. Inalienable: *éexi* ‘his/her stomach, paunch’
- b. Alienable: *ta’éexi* ~ *téexi* ‘his/her tripe’

The inclusion of the alienable *ta-* prefix on the word for ‘stomach’ changes it to become something that is no longer indelibly possessed by an individual (i.e., ‘one’s own stomach’). Instead, the alienable prefix changes the meaning of the word to some kind of foodstuff. We see the same relationship between the word *siipe* ‘his/her intestines,’ where the alienable version *tasíipe* is ‘his/her sausage.’

A less common manifestation of inalienable possession is through the use of the possessive preverb *i-*, which was described earlier in §4.1.1.4.1.6. Proto-Siouan had a third person possessive marker **i-*, though it usually only shows up in compound-like constructions in Mandan. The possessed noun will follow the possessor, and the possessed noun bears the *i-* prefix, as seen in the data below.

(28) Examples of *i-* marking inalienable possession

- a. *imáa íwahuu ná’re*
iwa#i-wa-hu#ra’=E
 body
 ‘rheumatism’ [lit. ‘the body’s bones ache’] (Hollow 1970: 96)

5.2 Possession

- b. *ré’ihj*
rE#i-hj
penis#PV.POSS-hair
'male pubic hair' (Hollow 1970: 175)
- c. *pó íshüt*
po#i-shüt
fish#PV.POSS-tail
'fish tail' (Hollow 1970: 241)
- d. *tí íwasjh*
ti#i-wa-sjh
dwelling#PV.INS-UNSP-be.strong
'lodge pole' (Hollow 1970: 250)
- e. *pshíjxaa ímiihka*
pshíjxaa#i-wíjh=ka
sage#PV.POSS-woman=HAB
'female sage plant' (Hollow 1970: 286)
- f. *matómiihka*
wáto#wíjh=ka
bear#woman=HAB
'female bear' (Hollow 1970: 286)

Using the possessive preverb seems to not be obligatory, as we see in (28e) and (28f), where both nouns describe the female of a species, but the possessive preverb is only appears in (28e). There is a slight difference in how these two constructions are read: i.e., the translation of (28e) is 'female sage plant,' but a more faithful translation to what the *i*- is doing here is 'sage plant's female.' We can contrast this with the construction in (28f), which is a true compound: i.e., 'bear female.'

Finally, though there is no third person possessive prefix in most cases, for the set of words classified as kinship terms, there exists a specific third person possessive prefix, *ko*- . This prefix is highly restricted, and it is not generalized to nouns referring to people. This prefix is reconstructable not just to Proto-Siouan, but it also has cognates in Catawban and Yuchi, indicating that this is a very old piece of morphology indeed. This **ko*- is analyzed as a noun classifier of sorts, having reflexes in nouns having to do with people (Kasak 2016: 24ff). This classifier contrasted with Proto-Siouan **wi*- and **wa*-, which were used for non-human animals and all other nouns, respectively. In Mandan, it is no longer productive,

5 Nominal morphology

and knowing whether a noun can take this *ko*- possessive marker is lexically determined. See §5.3.3 in the following section of this chapter for more examples of its usage in Mandan.

5.2.2 Alienable possession

The vast majority of nouns are alienable. Functionally, this means that Mandan distinguishes from nouns that have a general reading versus those that are overtly possessed. These nouns all bear the alienable possession marker *ta*-, along with person marking to show who possesses the noun. This *ta*- prefix is a direct descendent from Proto-Siouan *-hta, which was also a possession marker. This alienable possession marker in Proto-Siouan would combine with the other possession prefixes, resulting in a sequence that marked a noun as both possessed and also alienably possessed.

Unlike the unalienable possession prefixes shown in the previous subsection, there is far less variability in how alienable possession marking manifests itself on Mandan nouns. The pattern is always a person marker, then the alienable possession marker *ta*-, then the noun itself. The *ta*- marker has an allomorph with vowel-initial stems, where the /a/ is replaced by the vowel onto which the prefix concatenates, resulting in either /tV-/ for stems beginning with short vowels or /t/- for stems beginning with long vowels or those with /?/ codas. In fast speech, speakers will refrain from blending the vowels on the *ta*- with the following vowel, causing a glottal stop to be inserted between the vowels via the kind of epenthesis we saw previously in §3.6.2.1. We can see examples of alienable possession in the table below using the following words as exemplars: *súk* ‘child,’ *óminik* ‘bean,’ and *tiire* ‘blood.’

Table 5.3: Alienable possession paradigms

	Default	Short Vowel	Long Vowel
1SG	<i>ptasúk</i>	<i>ptóominik</i>	<i>ptíire</i>
2SG	<i>nitásuk</i>	<i>nitóominik</i>	<i>nitiire</i>
3SG	<i>tasúk</i>	<i>tóominik</i>	<i>tiire</i>
1DU	<i>nutásuk</i>	<i>nutóominik</i>	<i>nutíire</i>
1PL	<i>nutásukinite</i>	<i>nutóominikinite</i>	<i>nutíinite</i>
2PL	<i>nitásukinite</i>	<i>nitóominikinite</i>	<i>nitiinite</i>
3PL	<i>tasúhkere</i>	<i>tóminihkere</i>	<i>tíkere</i>

The pronominal prefixes for the second person and first person plural all mirror the distribution we saw in §5.2.1, where the second person possessor is iden-

5.2 Possession

tical to the stative *ni-*, and the first person plural possessor is identical to the active *nu-*. We again see the second person plural enclitic =*nit* on the second person plural for alienably possessed nouns, and the third person plural =*kere* on the third person plural. Like with the nouns that fall under the inalienable possession noun class, overtly marking the plurality of the possessor is rare in the corpus, especially in situations where the plurality of the possessor has been established in the discourse and is such understood by the interlocutors. A summary of the possessive markers from Table 5.3 appears below in underlying notation.

Table 5.4: Alienable possessive marking

	Default	Short Vowel	Long Vowel
1SG	/p-ta-/	/p-tV-/	/p-t-/
2SG	/r̥i-ta-/	/r̥i-tV-/	/r̥i-t-/
3SG	/Ø-ta-/	/Ø-tV-/	/Ø-t-/
1DU	/r̥u-ta-/	/r̥u-tV-/	/r̥u-t-/
1PL	/r̥u-ta- =r̥it/	/r̥u-tV- =r̥it/	/r̥u-t- =r̥it/
2PL	/r̥i-ta- =r̥it/	/r̥i-tV- =r̥it/	/r̥i-t- =r̥it/
3PL	/Ø-ta- =krE/	/Ø-tV- =krE/	/Ø-t- =krE/

We can see that the first person singular prefix for alienable possession is neither *wa-* nor *ma-* nor *mi-*, and it does not conform to any first person singular marker we have encountered before in Mandan. This prefix is the result of a historical sound change, where some more familiar prefix, perhaps /wɪ-/ or /wə-/̥, routinely underwent syncope before the *ta-* marker, resulting in a /w-ta-/ sequence. The /w/ assimilated the stop features of the following plosive, becoming a /p/. This is a very well-attested diachronic process in other Siouan languages: e.g., Proto-Siouan *wi-htee ‘bison’ > Mandan *pt̥i* and Lakota *pt̥é* ‘bison’.

The third person singular personal possessive prefix *ko-* likewise occurs with alienable possession marking, as there are certain kinship terms that are not treated as inalienable. See §5.3.3 for more information on how this prefix is used in Mandan.

5.2.3 Summary of possession

Possession is predominantly prefixal in nature in Mandan. When number enclitics occur, they most often occur to disambiguate or to introduce the plurality of a possessor into the discourse. When there is a plural possessor and a plural possessee, it is more common to see plural marking for the possessor. However,

5 Nominal morphology

plural marking for both can occur, as we see below. In (29a), we see double plural marking: once to mark the plurality of the possessor and again to mark the plurality of the possessee. Plurality of the possessee will always be closer to the stem than the plurality of the possessor. It is also possible to have only plurality of the possessee marked on the noun, as we see in (29b).

(29) Multiple plural marking in possessive constructions

a. *nutúutkerenits*

r̥-tuut=krE=r̥it=s
1PL.POSS-son-in-law=3PL=2PL=DEF

‘our (pl.) sons-in-law’ (Hollow 1970: 477)

b. *Ptasúhkheres*

wáaxte ísehkere’sh,
p-ta-suk=krE=s waa-xtE i-sek=krE=o’sh
1POSS-AL-child=3PL=DEF NOM-be.big PV.INS-do=3PL=IND.M

numá’kaakinite!

ruw̥a’k-aaki=r̥it=E=∅

person-COLL=2PL=SV=VOC

‘My children did something terrible, people!’ (Hollow 1973a: 178)

The word *ptasúhkheres* ‘my children’ bears the third person plural =*kere*, indicating that the possessee is plural. There are numerous instances of words like this in the corpus where the plural marking is omitted, especially if the possessee has been referenced several times and listeners are assumed to remember that the possessee is plural.

5.3 Direct address

When referring directly to an individual, Mandan employs a variety of strategies. These kinds of strategies are outlined in this section. We can see how Mandan treats personal names in §5.3.1, in particular what kinds of morphology we often see associated with personal names versus other nouns. I discuss how vocatives also factor into personal names and other nouns or noun phrases used as means of direct address. Lastly, I provide a list of kinship terminology in Mandan in §5.3.3 and discuss some aspects of how the Mandan people have traditionally referred to each other based on marriage and clan relationship.

5.3 *Direct address*5.3.1 **Personal names**

Mandan treats personal names as a separate class of nouns in the sense that they are often topicalized with the topic marker *=na* or otherwise dislocated in the sentence as foregrounding or backgrounding of information. Such topicalized or shifted names are often parenthetical or placed into their own intonational phrases. These prosodic breaks cause many names to end in the stem vowel /=E/ to show that the name is a complete utterance. These nouns are often accompanied by the definite article *=s*, given the fact that personal names are typically composed of one or more words, and a speaker wishes to disambiguate between some common noun and a person whose name happens to be a common noun.

- (30) a. *Werók Waatashe*
 wrok#waatash=E
 male.buffalo#metal=sv
 ‘Iron Buffalo’ (a.k.a. Edwin Benson)
- b. *Náaku Hús*
 rąqku#hų=s
 road
 ‘Many Roads’ (a.k.a. Mattie Grinnell)
- c. *Xaráte Ptéhe*
 xratE#ptEh=E
 wolf#run=sv
 ‘Running Wolf’ (a.k.a. Joseph Packineau)
- d. *Numá’k Máxanas*
 ruwą’k#wąxrą=s
 man#one=DEF
 ‘Lone Man’ (cultural figure)
- e. *Kók Kí’s*
 kok#ki’=s
 pronghorn#pack.on.back=DEF
 ‘Packs Antelope’ (cultural figure)

It is common for speakers to vacillate between adding the definite marker *=s* and omitting it, especially if the name keep coming up in discourse. Speakers have commented that one should add the definite marker, as it sounds better to them, but the corpus reveals that proper names are marked with *=s* less than half

5 Nominal morphology

the time. It is unclear if this propensity to omit the =s from personal names extended to most of the Mandan-speaking community prior to the loss of L1 speakers, or if this propensity to leave off the =s is restricted to the few individuals who have contributed to the narratives that make up this corpus.

This behavior of treating personal names as definite is extended to other proper nouns, such as locations, social organizations, months, or holidays. We can see examples of definiteness marking in the data below, where these proper nouns always appear with =s in the corpus.

(31) Examples of place names in Mandan

- a. *Tíirupa* *Pshíi Wóoni's*
tV-i-rupa pshii wV-o-ri'=s
AL-PV.INS-fire.arrow be.flat UNSP-PV.LOC-shoot=DEF
'Twin Buttes' [lit. 'The Place Where He Shot His Gun Flat'] (Hollow 1970: 92)
- b. *Máatahkshuks*
wqatah#kshuk=s
river#be.narrow=DEF
'Little Missouri River' [lit. 'The Narrow River'] (Hollow 1970: 123)
- c. *Mí'oxats*
wí'#o-xat=s
stone#PV.LOC-society=DEF
'Stone Club Society' [lit. 'The Stone Society'] (Hollow 1970: 133)
- d. *Wará'shút Pasqhs*
wra'#shút#pasah=s
fire#tail#creek=DEF
'Grand River (in South Dakota)' [lit. 'The Ashes Creek'] (Hollow 1970: 137)
- e. *Súk Wáakapus* *Óreeh* *Mínaks*
suk waa-ka-pus o-rEEh wírak=s
child NOM-INS.FRCE-make.marks PV.IRR-go.there month=DEF
'September' [lit. 'The Month When Children Go to School'] (Hollow 1970: 159)
- f. *Rá'ska Hágxopinixtes*
ra'ska#hap#hopri#xE=s
summer#day#be.holy#be.big=DEF
'Independence Day' [lit. 'The Big Summer Holiday'] (Hollow 1970: 169)

5.3 Direct address

Much like personal names, proper nouns also tend to end in the stem vowel /=E/ whenever they do not end in a definite =s. For locations, there is a strong tendency to treat it as a separate intonational phrase and then follow it with some manner of resumptive deictic marker.

5.3.2 Vocatives

When talking about someone, it is considered proper for Mandan speakers to include the definite article =s. Speaking directly to someone, however, necessitates an intonation phrase for a vocative element. Nouns treated as vocatives that do not end in a short vowel will have a stem vowel /=E/ added to the end of it. We can assume that the stem vowel is added to words that end in a short vowel, but the hiatus resolution of /VV/ sequences described in §3.6.1.3 will cause the stem vowel to be deleted. The final vowel in a vocative is lengthened and the intonation of this element involves a rising and then falling pitch on the right boundary of the final element of the noun phrase. This treatment of vocatives is similar to how Hidatsa treats the prosody of vocatives (Park 2012: 461).

Plural vocatives bear the second person plural marker =nit to clarify if the speaker is addressing one person or multiple people. We can see examples of vocatives observed in the corpus below.

(32) Examples of vocatives in Mandan

- a. *Mú'KAA!* *Máamaku'ta!*
 w'-uŋka=∅ waa-wq-kq'=ta
 1POSS-elder.brother=voc some-1s-give=IMP.M
 'Older brother! Give me some!' (Hollow 1973a: 139)

b. *SúkiniTEE!* *Matewé* *írasekinito'sha?*
 suk=rít=E=∅ wa-t-we i-ra-sek=rít=o'sha
 child=2PL=SV=VOC UNSP-WH-INDF PV.INS-2A-do=2PL=INT.M
 'Children! What are you doing?' (Hollow 1973a: 28)

Vocatives usually appear in the form of kinship terms, which are described below in §5.3.3. It is more common to address someone by how you are related to them than to use their proper name when addressing them. The overt use of someone's proper name is more typical when talking about someone rather than talking to them.

5 Nominal morphology

5.3.3 Kinship terminology

Family and clan relations are important features of traditional Mandan life. Bowers (1950: 37ff) gives a lengthy description of the different ways that family, moieties, and clans play a role in shaping the identity of a Mandan person. Kinship terms constitute a distinct class of nouns within Mandan in that they display some possession morphology that is unique to this class of nouns: i.e., the use of the third person personal possession prefix *ko-*.

Many of these kinship terms are inherited from Proto-Siouan, though certain terms have been adapted to fit the cultural norms of how the Mandan people organize their family structure. The data below are adapted from the information in Bowers (1950: 40ff) and Mixco (1997a: 45). Certain terms are used by speakers of a particular sex, and as such, the table below identifies whether this term is used by a particular sex, and if so, how it might differ between sexes. Relationships to a man are denoted with the ♂ symbol, relationships to a woman are denoted with the ♀ symbol, and relationships that do not depend on the sex of a person are denoted with the Ⓛ symbol.

(33) List of kinship terms in Mandan

a. ‘mother’ (♀)

	SG	DU	PL
1	<i>mihūṣ</i>	<i>nuhūṣ</i>	<i>nuhūṣnits</i>
2	<i>nihūṣ</i>		<i>nihūṣnits</i>
3	<i>kohūṣ</i>		<i>kohūṣkeres</i>

b. ‘father’ (♂)

	SG	DU	PL
1	<i>wá’ts</i>	<i>ráatinit</i>	<i>ráat</i>
2	<i>rá’ts</i>		<i>rá’tinit</i>
3	<i>kó’ts</i>		<i>kó’tkeres</i>

c. ‘older brother’ (♂)

	SG	DU	PL
1	<i>mú’kas</i>	<i>núukas</i>	<i>núukanit</i>
2	<i>nú’kas</i>		<i>nú’kanit</i>
3	<i>kú’kas</i>		<i>kú’kakeres</i>

d. ‘younger brother’ (♂), ‘any brother’ (♀)

	SG	DU	PL
1	<i>mishūṣkas</i>	<i>nushūṣkas</i>	<i>nushūṣkanit</i>
2	<i>nishūṣkas</i>		<i>nishūṣkanit</i>
3	<i>koshūṣkas</i>		<i>koshūṣkakeres</i>

5.3 Direct address

e. 'older sister' (♀)

	SG	DU	PL
1	<i>minúuks</i>	<i>nunúuks</i>	<i>nunúukinits</i>
2	<i>ninúuks</i>		<i>ninúukinits</i>
3	<i>konúuks</i>		<i>konúuhkeres</i>

f. 'younger sister' (♀)

	SG	DU	PL
1	<i>ptáqkas</i>	<i>nutáqkas</i>	<i>nutáqkanits</i>
2	<i>nitáqkas</i>		<i>nitáqkanits</i>
3	<i>kotáqkas</i>		<i>kotáqkakeres</i>

g. 'any sister' (σ)

	SG	DU	PL
1	<i>ptamíih</i>	<i>nutámiih</i>	<i>nutámiihinit</i>
2	<i>nitámiih</i>		<i>nitámiihinit</i>
3	<i>kotámiih</i>		<i>kotámiihkere</i>

h. 'grandmother' (♂), 'mother-in-law' (♀)

	SG	DU	PL
1	<i>mihúuxi'hs</i>	<i>nuhúuxi'hs</i>	<i>nuhúuxi'hs</i>
2	<i>nihúuxi'hs</i>		<i>nihúuxi'hinit</i>
3	<i>kohúuxi'hs</i>		<i>kohúuxi'hkeres</i>

i. 'grandfather' (♂), 'father-in-law' (♀)

	SG	DU	PL
1	<i>wá'txi'hs</i>	<i>ráatxi'hs</i>	<i>ráatxi'hinit</i>
2	<i>rá'txi'hs</i>		<i>rá'txi'hinit</i>
3	<i>kó'txi'hs</i>		<i>kó'txi'hkeres</i>

j. 'daughter' (♀)

	SG	DU	PL
1	<i>minúuhqks</i>	<i>nunúuhqks</i>	<i>nunúuhqkinits</i>
2	<i>ninúuhqks</i>		<i>ninúuhqkinits</i>
3	<i>konúuhqks</i>		<i>konúuhqhkeres</i>

k. 'son' (♂)

	SG	DU	PL
1	<i>miníks</i>	<i>nuníks</i>	<i>nuníkinits</i>
2	<i>niníks</i>		<i>niníkinits</i>
3	<i>koníks</i>		<i>koníhkeres</i>

5 Nominal morphology

- l. ‘grandchild’ or ‘daughter-in-law’ (♀)

	SG	DU	PL
1	<i>ptawíihqks</i>	<i>nutáwíihqks</i>	<i>nutáwíihqkinits</i>
2	<i>nitáwíihqks</i>		<i>nitáwíihqkinits</i>
3	<i>kotáwíihqks</i>		<i>kotáwíihqkeres</i>

- m. ‘sister’s child’ or ‘sister’s daughter’s child’ (σ)

	SG	DU	PL
1	<i>ptúuhqks</i>	<i>nutúuhqks</i>	<i>nutúuhqkinits</i>
2	<i>nitúuhqks</i>		<i>nitúuhqkinits</i>
3	<i>kotúuhqks</i>		<i>kotúuhqkeres</i>

- n. ‘wife’ (♀)

	SG	DU	PL
1	<i>mú'hs</i>	<i>núuhs</i>	<i>núuhinits</i>
2	<i>nú'hs</i>		<i>nú'hinits</i>
3	<i>kú'hs</i>		<i>kú'hkeres</i>

- o. ‘husband’ (♂)

	SG	DU	PL
1	<i>mí'wooroos</i>	<i>ríiwooroos</i>	<i>ríiwooroonits</i>
2	<i>ní'wooroos</i>		<i>ní'wooroonits</i>
3	<i>kowóoroos</i>		<i>kowóorookeres</i>

- p. ‘husband’s brother’ (♀)

	SG	DU	PL
1	<i>misíks</i>	<i>nusíks</i>	<i>nusíkinits</i>
2	<i>nisíks</i>		<i>nisíkinits</i>
3	<i>kosíks</i>		<i>kosíhkeres</i>

- q. ‘wife’s brother’ or ‘sister’s husband’ (σ)

	SG	DU	PL
1	<i>wóowakihs</i>	<i>nuwóokihs</i>	<i>nuwóohihinits</i>
2	<i>wóorakihs</i>		<i>wóorakihinits</i>
3	<i>kowóokihs</i>		<i>kowóokihkeres</i>

- r. ‘son-in-law’ or ‘father-in-law’ (σ)

	SG	DU	PL
1	<i>ptúuqts</i>	<i>nutúuqts</i>	<i>nutúuqtinits</i>
2	<i>nitúuqts</i>		<i>nitúuqtinits</i>
3	<i>kotúuqts</i>		<i>kotúuqtkeres</i>

5.3 Direct address

s. 'son-in-law' (♀)

	SG	DU	PL
1	<i>ptaró'hqkas</i>	<i>nutáro'hqkas</i>	<i>nutáro'hqkanits</i>
2	<i>nitáro'hqkas</i>		<i>nitáro'hqkanits</i>
3	<i>kotáro'hqkas</i>		<i>kotáro'hqkakeres</i>

t. 'brother's wife' (♂)

	SG	DU	PL
1	<i>ptaró'hqkamiihs</i>	<i>nutáro'hqkamiihs</i>	<i>nutáro'hqkamiihinitis</i>
2	<i>nitáro'hqkamiihs</i>		<i>nitáro'hqkamiihinitis</i>
3	<i>kotáro'hqkamiihs</i>		<i>kotáro'hqkamiihkeres</i>

u. 'husband's sister' or 'brother's wife' (♀)

	SG	DU	PL
1	<i>ptúus</i>	<i>nutúus</i>	<i>nutúunits</i>
2	<i>nitúus</i>		<i>nitúunits</i>
3	<i>kotúus</i>		<i>kotúukeres</i>

v. 'mother's brother' (♂)

	SG	DU	PL
1	<i>ptawáratoos</i>	<i>nutáwaratoos</i>	<i>nutáwaratoonits</i>
2	<i>nitáwaratoos</i>		<i>nitáwaratoonits</i>
3	<i>kotáwaratoos</i>		<i>kotáwaratookeres</i>

w. 'father's sister' (♀)

	SG	DU	PL
1	<i>ptúuminiks</i>	<i>nutúuminiks</i>	<i>nutúuminikinitis</i>
2	<i>nitúuminiks</i>		<i>nitúuminikinitis</i>
3	<i>kotúuminiks</i>		<i>kotúuminihkeres</i>

x. 'mother-in-law' (♂)

	SG	DU	PL
1	<i>ptúuhiniks</i>	<i>nutúuhiniks</i>	<i>nutúuhinikinitis</i>
2	<i>nitúuhiniks</i>		<i>nitúuhinikinitis</i>
3	<i>kotúuhiniks</i>		<i>kotúuhinihkeres</i>

This list consists of terms given to [Bowers \(1950\)](#) by Mandan consultants during his trips to Fort Berthold between 1929 and 1931.⁵ None of the same speakers worked with [Hollow \(1970\)](#) by the time he came to Fort Berthold in the late 1960s

⁵The Mandan individuals who contributed to Bowers' (1950: 4) section on kinship terms in the Mandan language were White Calf, Crows Heart, Ben Benson, Bear on the Flat, Foolish Woman, Little Owl, Scattercorn, Mrs. Good Bear, Calf Woman, Mrs. Owen Baker, and Front Woman.

5 Nominal morphology

to compile a dictionary of the Mandan language as his doctoral dissertation at the University of California, Berkeley. There are some differences in how Hollow interprets some kinship terms versus how Bowers does, and it is not clear if these differences are due to certain terms having multiple uses or if there was a change in how the organization of the family unit in Mandan occurred for speakers born in the twentieth century versus those with whom Bowers had worked, the majority of whom were born during the middle of the nineteenth century. The following terms differ from those given above in (33).

(34) Differences in kinship terms observed in Hollow (1970)

a. ‘husband’ (♂)

	SG	DU	PL
1	<i>miweróos</i>	<i>nuweróos</i>	<i>nuweróonits</i>
2	<i>niweróos</i>		<i>niweróonits</i>
3	<i>koweróos</i>		<i>koweróokeres</i>

b. ‘sister-in-law’ (σ)

	SG	DU	PL
1	<i>ptaró'hqkas</i>	<i>nutáro'hqkas</i>	<i>nutáro'hqkanits</i>
2	<i>nitáro'hqkas</i>		<i>nitáro'hqkanits</i>
3	<i>kotáro'hqkas</i>		<i>kotáro'hqkakeres</i>

c. ‘mother’s brother’s wife’ (σ)

	SG	DU	PL
1	<i>ptaró'hqkamiihs</i>	<i>nutáro'hqkamiihs</i>	<i>nutáro'hqkamiihinitis</i>
2	<i>nitáro'hqkamiihs</i>		<i>nitáro'hqkamiihinitis</i>
3	<i>kotáro'hqkamiihs</i>		<i>kotáro'hqkamiihkeres</i>

d. ‘father-in-law’ (σ)

	SG	DU	PL
1	<i>pta'iwaratookas</i>	<i>nutá'iwaratookas</i>	<i>nutá'iwaratookanits</i>
2	<i>nitá'iwaratookas</i>		<i>nitá'iwaratookanits</i>
3	<i>kotá'iwaratookas</i>		<i>kotá'iwaratookakeres</i>

The word for ‘husband’ in (34a) as given in Hollow (1970: 306) is supposedly the general Nuu’etaare form. He contrasts this word with ‘husband’ in (33o), where *kowóoroos* is supposed to be the Nuptaare dialectal version of the word. This statement does not appear to be accurate, as the supposedly Nuptaare form is the term used for ‘husband’ in the corpus in over 90 per cent of all instances of the term ‘husband.’ It is likely that Hollow (1970) switched the two dialectal versions, given the fact that almost all consultants who worked with both Bowers

5.3 Direct address

(1950) and Hollow (1970) self-identified as Nuu'etaare speakers. Another possibility is that the Nuptaare version of the word 'husband' is preferred for some other reason, such as an attempt to exoticize the events being described in some narratives as having happened long ago, when there was more dialectal variety in the Mandan language during the period of time when the different villages had their own speech varieties.

Hollow (1970: 244) identifies *kotáro'hqkas* as 'sister-in-law' in (34b), but Bowers (1950: 40) equates it with 'son-in-law.' Bowers's (1950) consultants note that the term *ró'hqka* means 'young person' or 'young one.' As such, this term may not strictly be a kinship term in as much as it is an epithet for younger in-laws. Likewise, we see the term *kotáro'hqkamiihs* listed as 'brother's wife' in (33t), but as 'mother's brother's wife' in (34c). There does not seem to be a conflict between the translations for these words, because they both appear to refer to a woman who has married a man who is part of one's mother's clan. As such, a more apt description of this term is any woman who marries into one's clan.

The term for 'father-in-law' in (34d) is the form most commonly seen in both Hollow (1970, 1973a) and Trechter (2012a). The word *kotá'iwaratookas* is perhaps used to disambiguate between *kotíyuts*, which can mean both 'father-in-law' and 'son-in-law.' Bowers (1950: 55) reports that *kotá'iwaratookas* should never be used to refer to a father-in-law whose clan is different than one's own. Therefore, it is likely that this term is more specific to refer to men who are part of one's own clan but who are also their father-in-law. The term *kotíyuts* may be more closely aligned with a more generalized word for men who marry into one's clan or men into whose clan one marries. Using *kotá'iwaratookas* clears up any confusion over whether one is referring to their wife's father or her brother.

In addition to having slightly different forms based on what relation the speaker has to the relative being discussed, certain kinship terms have a suppletive form when used as a vocative. These suppletive forms appear below.

(35) Vocative forms of kinship terms

- a. *ná'e* 'mother!'
- b. *taté* 'father!'
- c. *náxi'hs* 'grandmother!'
- d. *tatáxi'hs* 'grandfather!'
- e. *ró'hqka* 'son-in-law!' or 'young one!'
- f. *ratóore* 'mother's brother!'

5 Nominal morphology

In addition to these vocative terms, it is also common for older women to use *warátookaxi’he* ‘old man’ when addressing their older husbands, and likewise, older men often call their older wives *rokqák* ‘old woman’.

5.4 Pronouns

In §4.1.2, I described a variety of inflectional prefixes that I referred to as pronominals. These prefixes are not pronouns in the strictest sense, but agreement markers. It is not clear that Mandan has “true” pronouns that refer to individual persons in the sense that they are stand-alone elements that are neither personal pronouns nor proforms Bhat (2004). We can divide pronouns and pronoun-like elements into two classes: what I shall call independent pronouns and interrogative pronouns. Independent pronouns are addressed in §SubSecIndependentPronouns, and I describe interrogative pronouns in §5.4.2 below.

5.4.1 Independent pronouns

There are certainly elements in Mandan that speakers translate into English with an English pronoun, but these elements are doing more than indicating the person or number of the argument to which the speaker is referring. The so-called pronouns in Mandan really serve as discourse elements that can topicalize an argument, reinforce an argument, or remind the listener of an argument. Where pronoun-like words occur in Mandan, they are clause-level elements that affect the information structure of an utterance. For the sake of ease, I shall refer to them as independent pronouns in the sense that are free syntactic words that carry the semantics of identifying some individual or individuals in the discourse, but it is still worth reminding the reader that they are not pronouns in the same sense that English pronouns are pronouns. Mandan independent pronouns are never obligatory, nor are they predictable where in a sentence they will appear.

There are three words in Mandan that I refer to as independent pronouns:

Table 5.5: Independent pronouns in Mandan

	Emphatic	Contrastive	Relativizing
1SG	<i>mí’shak</i>	<i>mí’o’rak</i>	<i>mí’o’na</i>
2SG/2PL	<i>ní’shak</i>	<i>ní’o’rak</i>	<i>ní’o’na</i>
3SG/3PL	<i>ishák</i>	<i>í’o’rak</i>	<i>í’o’na</i>
1PL	<i>núushák</i>	<i>núu’o’rak</i>	<i>núu’o’na</i>

5.4 Pronouns

The bare forms of the pronouns refer to third person entities. Independent pronouns in Mandan are not marked for number, sex, or any other property of the referents aside from person. The only distinction for number in pronouns relates to first person marking, and this is grounded in the fact that there are unique pronominal prefixes for first personal singular and first person plural. This is not the case for second or third person, given that plurality is typically realized in the form of enclitics like *=nit* and *=kere*, respectively.

5.4.1.1 Emphatic pronoun: *ishák*

The most common form of independent pronoun is the emphatic pronoun. It is most often translated as just 'X,' 'even X,' or 'X Xself,' where X is the person: e.g., *mí'shak* 'I,' 'I myself,' or 'even I.' The emphatic pronoun can also be used as explicit possession: e.g., *mí'shak* 'mine'

(36) Examples of the emphatic pronoun

- a. *Numá'kshi Karáaha ishák rás ótu*
ruwá'k#shi kraah=E=Ø ishak ras o-tu
man#be.good be.afraid=sv=Ø PRO name PV.IRR-be.some
kiná'mahere'sh
kirá'#wá-hrE=o'sh
tell#1s-CAUS=IND.M
'Afraid to be Chief himself told me to tell the name he has' (Hollow 1973a: 64)
- b. *weróohkeres réehkerek, ishák, kotúqts,*
wrook=krE=s rEEh=krE=ak ishak ko-tuqt=s
buffalo.bull=3PL=DEF go.there=3PL=DS PRO 3POSS.PERS-son-in-law=DEF
kisúkini...
ki-suk=rj
VERT-exit=ss
'With those buffalo bulls having gone, he, her son-in-law, went back out and...' (Hollow 1973a: 119)
- c. *Réeharata, ní'shak!*
rEEh#hrE=ta r̃-ishak
go.there#CAUS=IMP.M 2POSS-PRO
'It is your turn, you!' [lit. 'you go, you!'] (Hollow 1973a: 160)

5 Nominal morphology

- d. *Mí'shak* *máa'qk íwasek* *pshíiwahaani...*
w[~]-ishak *waa'qk i-wa-sek* *pshii#wa-hrE=rj*
 1SG.POSS-PRO land PV.INS-1A-make be.flat#1A-CAUS=SS
 'I myself, the land that I made, I made it flat and...' (Hollow 1973a: 4)
- e. *Mí'shak* *inqk ptanqaku'sh*
w[~]-ishak *irqk p-ta-rąaku=o'sh*
 1SG.POSS-PRO again 1SG.POSS-AL-road=IND.M
 'It's my road too' (Hollow 1973a: 24)
- f. *Ratóore,* *ní'shak inák éetekto'sh*
ratoo=E=Ø *r*[~]-ishak *irqk ee-te=kt=o'sh*
 be.mature=sv=voc 2POSS-PRO again PV-say.2SG=POT=IND.M
 'Elder, even you should say say it' (Hollow 1973a: 30)
- g. *Manáhinií ret,* *ní'shak*
wrahrjj *re=t* *r*[~]-ishak
 spring DEM.PROX=LOC 2POSS-PRO
nitáwookisita!
rj-ta-wV-o-ki-si=ta
 2POSS-AL-NOM-PV.IRR-MID-command=IMP.M
 'the this one in the spring [water], you take him as a slave' (Hollow 1973a: 158)

The emphatic pronoun is typically used to reinforce a subject, as we see in (36a), (36b), (36d), and (36f). We can also see the emphatic pronoun used as a possessive in (36e), where the Mandan consultant said that *mí'shak* means 'mine' in this context. The emphatic pronoun in (36c) seems to be used in a vocative sense. Lastly, the *ní'shak* in (36g) is ambiguous whether it is truly indicating a subject or an indirect object: i.e., 'you take him as a slave' versus 'take him as a slave for yourself.' Either possibility results in the emphatic pronoun being co-referential with the subject. No instances of emphatic pronouns being used as direct objects or playing other roles are attested in the corpus. As such, emphatic pronouns appear to be restricted to emphasizing the subject of a clause or a possessor that is co-referential with a clause-final noun that is possessed, as we see in (36e).

5.4.1.2 Contrastive pronoun: *i'o'rak*

The contrastive pronoun by its very nature requires some contrast between the subject of one clause and the one in which the contrastive pronoun occurs. It appears to be composed of the possessive preverb *i-*, plus the copula *o'* 'be' with

5.4 Pronouns

the different subject marker =*ak*. As such, this is not a pronoun in the strictest sense, given the fact it is composed of a verb and other clausal morphology, but its distribution and treatment by speakers is pronominal in nature.

Translations of this pronoun in English often appear as ‘X is the one,’ ‘as for X,’ or ‘X, however.’ The contrastive pronoun can also be rendered into English with an independent pronoun alone, but there will be some accompanying prosody to act as a cue for contrast. Rather than relying on prosody to convey this contrastive reading, Mandan has overt pronouns, as we see below.

(37) Examples of the contrastive pronoun

- a. *Kiwáa’o’nixinash* *papshíikiniko’re.*
 ki-waa-o’=r̥ix=r̥ash pa-pshiik=r̥ik=o’sh
 MID-NEG-be=NEG=ATT INS.PUSH-push=ITER=IND.F
Ní’orak, *rapaákxu̯hki*
r̥~i-o’=ak *ra-pa-kxu̯h=ki*
 2POSS-PV.POSS-be=DS 2A-INS.PUSH-lie.down=COND
miníreet *ókipxe’re.*
wr̥i=ee=t *o-ki-pxE=o’re*
 water=DEM.DIST=LOC PV.IRR-VERT-stumble=IND.F
 ‘He will not be able to push you off. You, however, if you push him down on the water, he will land’ (Hollow 1973a: 105)
- b. *Ní’o’rak,* *wáa’ihute* *résh* *ruháaro’sh*
r̥~i-o’=ak *waa-i-hüt=E* *resh* *r̥u-haa=o’sh*
 2POSS-PV.POSS-be=DS NOM-PV.INS-burst=sv like.this 1A.PL-try=IND.M
 ‘you are the one, [it is your] fault we are like this’ (Treichter 2012a: 50)
- c. *Káni* *ní’o’rak* *nipáaxu* *kshúkanashini*
 ka=r̥i *r̥~i-o’=ak* *r̥i-paaxu* *kshuk=r̥ash=r̥i*
 prov=ss 2POSS-PV.POSS-be=DS 2POSS-nose be.narrow=ATT=ss
óraptehe *tú* *ó’xere’sha?*
o-ra-ptEh=E *tú* *o’xrE=o’sha*
 PV.IRR-2A-run=sv be.some DUB=INT.M
 ‘And as for you, your nose is kind of narrow, so how could you even run at all?’ (Hollow 1973b: 59)
- d. *Kotewé* *nurátoora’shka?* [...] *Komí’ma’o’rak!*
 ko-t-we *r̥u-ratoo=a’shka* *ko-w~i-w̥a-o’=ak*
 REL-WH-INDF 1A.PL-be.mature=PSBL REL-1POSS-PV.POSS-1s-be=DS
 ‘Who of us could possibly be older? [...] I am the one [who is]!’ (Hollow 1973a: 6)

5 Nominal morphology

The contrastive pronoun has a very limited distribution, as it only arises in a back and forth between speakers. Such situations are not common in the corpus, which are ultimately comprised of traditional narratives where dialog is limited and the narrators often paraphrase what is said instead of giving full quotes of what the figures in the narrative are saying to each other. In conversation, these kinds of pronouns are more common than in the corpus. This pronoun is most often found for second person, as it is associated with interpersonal arguments over who did what, and it occurs in propositions where the speaker is assigning blame or accusing the listener. When used for the first person, this pronoun is directly contradicting something the listener has just said.

In (37d), we see double first person singular marking. One exponent of the first person singular feature is the *ma-*, which is the subject of the verb ó’ ‘be.’ The preverb *i-* converts this verb into a nominal element, which then takes the first person singular possessive prefix /w~-/-. This is a rare manifestation of multiple exponence in Mandan. Other Siouan languages, such as Crow, have similar constructions where pronoun-like constructions can be added to words that already bear person marking.

(38) Multiple exponence in Crow pronouns

- a. *hinne ahpaaquéesh koon Akbaatatdía iláak hilásheek,*
hinne ahpaaquéesh koon ak-baatách-día ilíi-ak hilía-shée-k
this cloud-DET source REL-everything-make speak-ss this-say-DECL
“hinne biiwalaakbacheék”
hinne bii-ba-dáaka-bacheé-k
this 1PRO-1POSS-child-man-DECL
‘God spoke from this cloud and said this: “this is my son”’ (Graczyk 2007: 61)
- b. *éehk biiwachuukák*
eehk bii-ba-chuuká-k
DEM.MID 1PRO-1POSS-younger.brother-DECL
‘that one is my younger brother’ (Graczyk 2007: 61)

The Crow pronouns co-occur with other person marking in the data above, similar to how the possessive plus preverb combination works in Mandan in (37d). Looking at multiple narratives in Crow (e.g., *Medicine Horse 1987*), this phenomenon appears more often in Crow than it does in Mandan. Given the fact that the corpus consists of mostly traditional narratives rather than actual conversation, it is unclear how common this double marking of personhood in

5.4 Pronouns

Mandan is outside of the domain of recounting of the domain of the narrative. Recordings of dialogs in Mandan may exist at the library at Nueta Hidatsa Sah-nish College in New Town, ND, but access to such recordings has been restricted to outside availability as of this writing.

5.4.1.3 Relativizing pronoun: *i'o'na*

The relativizing pronoun is like the contrastive pronoun in that it is really a verbal construction consisting of the possessive preverb *i*-, the verb *ó* 'be,' and the topic marker *=na*. When this pronoun is used, it carries the meaning of 'It is X who,' where it precedes a verb or is immediately postposed after the matrix verb in a sentence. These pronouns are mostly attested in the [Hollow \(1970\)](#) dictionary and in the Mandan grammar by [Kennard \(1936\)](#), where Kennard states that

(39) Examples of relativizing pronoun

- a. *mí'o'na* *wáa'eepe* *mikó'sh*
 w[~]-o[~]=raq *waa-ee-pe* *wík=o'sh*
1SG.POSS-PV.POSS-be=TOP **NOM-PV-say.1SG** **be.none=IND.M**
 'I am the one who did not say anything' (Hollow 1973b: 244)

b. *hiré núu'o'na* *q'skanuhhere'sh*
 hire *nuu-o[~]=raq* *a'ska#rú-hrE=o'sh*
 now **1PL.POSS-PV.POSS-be=TOP** **that.way#1A.PL-CAUS=IND.M**
 'Now we are the ones who did it that way' (Hollow 1973b: 176)

c. *i'o'na* *téeharani...*
 i-o[~]=raq *tee#hrE=rí*
PV.POSS-be=TOP **die#CAUS=SS**
 'he was the one who killed her...' (Hollow 1973a: 178)

d. *mí'shak, maní'o'na* *áskaraha'rkha*
 w[~]-ishak *wa-r[~]-i-o[~]=raq* *áaska#ra-hrE=a'shka*
1SG.POSS-PRO UNSP-2POSS-PV.POSS-be=TOP **that.way#2A-CAUS=PSBL**
éewaharani...
 ee-wa-hrE=rí
PV-1A-CAUS=SS
 'Me, I thought you were the one who maybe did something...' (Hollow 1973b: 238)

In each of the examples of the relativizing pronouns above, the subject is the element that is relativized. This pronoun is used sparingly in the corpus, and

5 Nominal morphology

it seems to be more common in speakers born in the mid nineteenth century than in speakers born in the twentieth century. The data in (39d) contain a rare example of multiple pronouns being used within the same sentence. The emphatic pronoun is used first to topicalize the subject of the matrix clause, while the relativizing pronoun is the subject of a subordinate clause. The second person pronoun in (39d) also bears the unspecified argument marker /wa-/, which seems to amplify the uncertainty the speaker has over who was the one who did the action in question.

5.4.2 Interrogative pronouns

While the personal pronouns described in §5.4.1 above are somewhat marginal in the corpus, the interrogative pronouns in Mandan are quite common. Where English has *wh*-words, Mandan has *t*-words. These words all derive from the Proto-Siouan interrogative *ta(a). All interrogative pronouns in Mandan are derived from this same root, manifesting either was /ta/ or just /t/. A list of these interrogative pronouns appears below.

(40) List of interrogative pronouns

<i>tá</i>	‘what’ (said in surprise)
<i>tewé</i>	‘who’
<i>kotewé</i>	‘who, what, which’
<i>watewé</i>	‘what’
<i>tewét~tewétaa</i>	‘where’
<i>tashká</i>	‘how’
<i>tashká’eshka</i>	‘how (reason)’
<i>tashká’hqq</i>	‘how (means)’
<i>táhqq</i>	‘how (instrument)’
<i>tashkák</i>	‘why’
<i>ta’qq</i>	‘how many’
<i>taxkó</i>	‘when’
<i>tákaki</i>	‘when’

The simple *tá* is never used as part of a true question; it is more of an exclamation or reaction to something that someone has said or done. The remaining interrogative pronouns are used in asking questions or substituting for arguments or adjuncts in a sentence.

5.4 Pronouns

5.4.2.1 Interrogative ‘who’: *tewé*

This interrogative pronoun is the most common one used for replacing an entire noun phrase. It is not used as a relativizer. It is underlyingly /t-we/, where the /-we/ is some element inherited from Proto-Siouan that may have indicated indefiniteness.⁶ We can see examples of this interrogative pronoun in the data below.

(41) Examples of *tewé* ‘who’

- a. *tewéna* q’teroo máatihtaa réeho’xere’sha?
 t-we=rä q’t=roo wäqtih=taa rEEh=o’xrE=o’sha
 WH-INDF=TOP DEM.ANAP=DEM.MID outside=LOC go.there=DUB=INT.M
 ‘Who would even want to go there, outside?’ (Hollow 1973b: 108)
- b. *tewé* ó’rak ówokahqq...?
 t-we o’=ak o-woka=häq
 WH-INDF be=DS PV.LOC-follow=SIM
 ‘who is it that is following...?’ (Hollow 1973a: 66)
- c. *tewé* úyte paskijhki taptijkto’sh
 t-we úyE pa-skijh=ki ta-ptij=kt=o’sh
 WH-INDF be.first INS.PUSH-slash=COND AL-bison=POT=IND.M
 ‘when someone slashes it first, it will be his buffalo’ (Hollow 1973b: 6)

This pronoun is able to bear the topic marker =*na*, as we see in (41a), emphasizing the person who would do such a thing, rather than the action itself. This interrogative pronoun, like all other interrogative pronouns can be used as a kind of indefinite pronoun, as we see in (41c). The *tewé* in the aforementioned sentence is rendered into English as ‘someone’ or ‘somebody’ though the sentence can also be translated into English as ‘when whoever it is slashes it first, it will be his buffalo.’ This is an alternative to using the alternative reading of the prefix *waa-* or its free form *wáa* as discussed in §4.1.2.4.4. It is unclear what the pragmatic difference is between these two elements, and the corpus does not yield enough instances of contrast between the two to draw adequate conclusions. One suspicion is that the interrogative pronouns, when used as indefinite

⁶We see another instance of Proto-Siouan *-we in the reconstruction for the possessive *i-hta-we, where some Siouan languages use forms with reflexes of *-we when describing a nominalized version of a possessive: e.g., Lakota third person possessive prefix *thá-*, which appears before the possessed noun, but the full possessive pronoun *tháwa* is used to express something closer to ‘it is his/hers/theirs’: e.g., *thálowaŋ waštéšte* ‘his songs are (always) good’ versus *olówaŋ tháwa kiŋ waštéšte*, which is closer to ‘the songs of his/hers/theirs are (always) good’ (Ullrich & Black Bear 2016: 188ff).

5 Nominal morphology

pronouns, are even less definite than the bound *waa-* or free *wáa* pronominals, given the fact that the indefinite pronouns are often accompanied by adding ‘-ever’ to the English translation: i.e., ‘someone’ versus ‘whoever it is.’

5.4.2.2 Interrogative ‘who, what, which’: *kotewé*

This interrogative pronoun consists of the relativizer *ko-*, plus *tewé*. It can be used to replace any argument in a clause, allowing it to refer to human or non-human entities. This flexibility means that *kotewé* is a very common interrogative pronoun in the corpus.

(42) Examples of *kotewé*

- a. *kotewé* ó’re, íwahqqxiko’sh
ko-t-we o’=re i-wa-hqaxik=o’sh
REL-WH-INDF be=DEM.PROX PV.INS-1A-not.know=IND.M
‘I do not know which ones these are’ (Hollow 1973a: 153)
- b. *Numá’k Máxana éehe ni Kinúma’kshi*
ruwá’k wáxrá ee-he=rj ki-ruwá’k#shi
man one and MID-man#be.good
íkirookereroomako’sh, kotewé
i-ki-roo=krE=oowák=o’sh *ko-t-we*
PV.INS-ITR-speak=3PL=NARR=IND.M REL-WH-INDF
óratoore.
o-ratoo=E
PV.IRR-be.mature=sv
‘Lone Man and First Creator argued about it, which one was older’
(Hollow 1973a: 1)
- c. *kotewé* *nukj’kinitki,*
ko-t-we *rú-ki’k=rj=t=ki*
REL-WH-INDF 1A.PL-finish=2PL=COND
kanúwaka’nitó’sh
ka-rú-wa-ka’=rj=t=o’sh
AGT-1A.PL-UNSP-have=2PL=IND.M
‘Whichever one of us gets through first, that is the one of us who will have it’ (Hollow 1973a: 43)

5.4 Pronouns

- d. *kotewé* *nurátoora'shka?*
 ko-t-we rü-ratoo=a'shka
 REL-WH-INDF 1A.PL-be.mature=PSBL
 'who of us is older?' (Hollow 1973a: 6)
- e. *máa'qk ówashkat*, *kotewé* *hqqka*,
 waa'qk o-washka=t ko-t-we hqakE=Ø
 land PV.LOC-be.high=LOC REL-WH-INDF stand.AUX=CONT
 q'teroo ó'ki: "Káare ráahtha."
 q't=roo o'=ki kaare rEEh=ta
 DEM.ANAP=DEM.MID be=COND NEG.IMP go.there=IMP.M
 'on the hill where it is high, whichever one he was standing on, when
 he was there, [he said]: "Do not go there." (Hollow 1973a: 93)

As the data above show, *kotewé* can be used when the speaker wishes to constrain possible options. As such, it functions closer to the English word 'which' than to either 'who' or 'what.' It is the case, however, that *kotewé* occurs most often in the corpus with human arguments.

5.4.2.3 Interrogative 'what': *watewé*

The interrogative pronoun combines the unspecified argument marker *wa-* with the interrogative pronoun *tewé*. This particular pronoun is used exclusively for non-human entities. One aspect about this pronoun is that it often appears utterance-initially. This utterance-initial position often results in the initial /w/ being realized as [m]: i.e., [ma.'t^ewe], not *[mā.'t^ewe]. We can see examples of this pronoun below.

(43) Examples of *watewé*

- a. *matewé* *órarukü'ro'sha?*
 wa-t-we o-ra-ru-ku'=o'sha
 UNSP-WH-INDF PV.IRR-2A-INS.HAND-give=INT.M
 'what will you give for it?' (Hollow 1973a: 29)
- b. *matewék*, *sháa manaháni éererehini...*
 wa-t-we=ak shaa w-rä-hE=rj ee-re-reh=rj
 UNSP-WH-INDF=DS always 1s-2A-see=ss PV-2A-want=ss
 'whatever it is, you always want to look at me and...' (Hollow 1973a: 95)

5 Nominal morphology

- c. *matewéna* *rénak??!*
 wa-t-we=ra re=rak
 UNSP-WH-INDF=TOP DEM.PROX=POS.SIT
 'what is this?!' (Hollow 1973a: 107)
- d. *watewé* *ísekini* *éerehki*, *réesike* *ré*
 wa-t-we i-sek=rj ee-reh=ki reesik=E re
 UNSP-WH-INDF PV.INS-do=SS PV-want=COND tongue=SV DEM.PROX
ká'roomako'sh
 ka'=oowąk=o'sh
 ask.for=NARR=IND.M
 'when he wanted to do anything, he asked for this here tongue' (Hollow 1973a: 187)
- e. *numá'k réehe*, *watewé* *éeniheni* *réeho'sh?*
 ruwą'k rEEh=E wa-t-we ee-rj-he=rj rEEh=o'sh
 man go.there=SV UNSP-WH-INDF PV-2s-say=SS go.there=IND.M
 'the man who went by, he went and said *what* to you?' (Hollow 1973a: 187)
- f. *matewé* *tük*, *rútnuhere* *ó'xere'sha?*
 wa-t-we tu=ak rut#rų-hrE o'xrE=o'sha
 UNSP-WH-INDF be.some=DS eat#1A.PL-CAUS DUB=INT.M
 'I wonder if we can invite him to eat something we have here' (Hollow 1973a: 127)
- g. *matewé* *éeteki*, *rakína'ki*, *ó'u'shka't*
 wa-t-we ee-tE=ki ra-kirą'=ki o-u'shka=q't
 UNSP-WH-INDF PV-say.SG=COND 2A-tell=COND PV.IRR-be.thus=HYP
 'if you were to say whatever [you want], if you were to tell it to me, then it would be so' (Hollow 1973b: 241)

Like other interrogative pronouns, *watewé* is able to be used as an indefinite pronoun, as we see in (43b) and (43d) through (43g). It is more common for indefinites to be marked via the unspecified argument marker *wa-*, though these indefinite versions of the interrogative pronouns appear to be pragmatically used to place more emphasis on the indefinite nature of a particular argument.

Like *tewé*, the pronoun *watewé* is never used as a relativizer. Relativization is generally done using nominalizing preverbs: e.g., *íraheke* 'what you know' versus *watewé íraheko'sha* 'what do you know.'

5.4 Pronouns

5.4.2.4 Interrogative ‘where’: *tewét* and *tewétaa*

Both *tewét* and *tewétaa* are composed of the interrogative pronoun *tewé* plus a locative: i.e., /=t/ or /=taa/. Both pronouns are equivalent to ‘where,’ and like the other interrogatives, it cannot be used as a relativizer. There is functionally no difference between these two words. We can see examples of their use in the data below.

(44) Examples of *tewét* and *tewétaa*

- a. *tewétaa* ó’raharani rahúuro’sha?
 t-we=taa o’#ra-hrE=rj ra-huu=o’sha
 WH-INDF=LOC be#2A-CAUS=SS 2A-come.here=INT.M
 ‘where do you come from?’ (Hollow 1973b: 299)
- b. *tewéteroo* ptamáah tóops ó’ro’sha?
 t-we=t=roo p-ta-wqäh toop=s o’=o’sha
 WH-INDF=LOC=DEM.MID 1SG.POSS-AL-arrow four=DEF be=INT.M
 ‘where around here are my four arrows?’ (Hollow 1973a: 33)
- c. máatahe, *tewét* ó’ro’sha?
 wqatäh=E t-we=t o’=o’sha
 river=SV WH-INDF=LOC be=INT.M
 ‘the river, where is it?’ (Hollow 1973a: 37)
- d. numá’koote’re, *tewét* ó’harani húurak?
 ruwq’k=ootE=o’re t-we=t o’#hrE=rj huu=ak
 man=EVID=IND.F WH-INDF=LOC be#CAUS=SS come.here=DS
 ‘It is a boy, so where did he come from?’ (Hollow 1973a: 87)
- e. náxi’he, *ítewetaa* raréeho’na?
 rä#xi’h=E=Ø i-t-we=taa ra-rEh=o’rä
 mother.voc#be.old=SV=VOC PV.DIR-WH-INDF=LOC 2A-go.there=INT.F
 ‘grandmother, where are you going?’ (Hollow 1973a: 89)
- f. súkxiknak *tewét* ó’harani húuni
 suk#xik#rak t-we=t o’#hrE=rj huu=rj
 child#be.bad#POS.SIT WH-INDF=LOC be#CAUS=SS come.here=SS
 wawáhere píiroomako’sh
 wa-wa-hrE pii=oowqäh=o’sh
 UNSP-1A-CAUS devour=NARR=IND.M
 ‘this bad kid came from somewhere and ate my food’ (Hollow 1973b: 120)

5 Nominal morphology

g.	<i>tewétaa</i>	<i>rakjharanitki</i>	<i>kóoxq'te óo</i>
	<i>t-we=taa</i>	<i>ra-kj#hrE=rj=ki</i>	<i>kooxq'tE oo</i>
	WH-INDF=LOC	2A-plant#CAUS=2PL=COND	corn DEM.MID

iníiro'sh
irjj=o'sh
grow=IND.M

'if you plant it wherever, corn will grow there' (Hollow 1973b: 293)

h.	<i>waráahini</i>	<i>wahekto'sh, tewetaa</i>
	<i>wa-rEEh=rj</i>	<i>wa-hE=kt=o'sh t-we=taa</i>
	1A-go.there=ss	1A-see=POT=IND.M WH-INDF=LOC
	<i>máakekerekí</i>	
	<i>waqkE=krE=ki</i>	
	lie.POS.AUX=3PL=COND	

'I will go and see if they live somewhere' (Trechter 2012a: 25)

The vast majority of instances of 'where' pronouns in Mandan involve just *tewét*, while *tewétaa* has a tendency to be used when the following word in an intonational phrase begins with a consonant, especially a sonorant. These observations are merely tendencies, as there does not appear to be a viable rule for when one must be used versus the other.

These pronouns can take other nominal marking, often associated with directional or some other postpositional or deictic relationship. We can see in (44e) that *tewét* takes the directional preverb *i-* to become *ítewet*, due to the fact that the clause features a verb expressing motion towards some place. Likewise, we see the postposition *ó'harani* 'from' used in (44a), (44d), and (44f) to indicate motion away from somewhere.

5.4.2.5 Interrogative 'how': *tashká, tashká'eshka, tashkáhqa, táhqa*

Mandan employs a diverse set of interrogative pronouns to express how something occurs. The default word for 'how' is *tashká*, which is historically composed of the interrogative *tá* plus the disjunctive marker *=shka*. These two formatives do not appear to be decomposable in contemporary Mandan, however, as this word is analyzed as a single unit by speakers.

While *tashká* is the default interrogative pronoun for describing manner, there are other formatives that can occur with it to slightly modify its semantics. The similitive marker *-eshka* often appears in conjunction with *tashká* in the corpus. Instances of *tashká'eshka* outnumber the default *tashká* in the corpus. Another

5.4 Pronouns

common item that accompanies *tashká* is the instrumental postposition =*hqq*. Examples of these three interrogative pronouns appear below.

(45) Examples of *tashká*, *tashká'eshka*, and *tashkáhqq*

- a. *tashká'sha*, *waráhere?*
tashka=o'sha wa-ra-hrE
 how=INT.M UNSP-2A-CAUS
 'how it is, your food?' (Hollow 1973a: 161)
- b. *tashká reheré'sh*, *wáa'ireseke?*
tashka re-hrE=o'sh waa-i-re-sek=E
 how 2A-CAUS=IND.M NOM-PV.INS-2A-make=SV
 'how did you do it, what you made?' (Hollow 1973a: 3)
- c. *tashká q't* *rushékere'sha?*
tashka q't ru-shE=krE=o'sha
 how DEM.ANAP INS.HAND-grasp=3PL=INT.M
 'how can they take that?' (Trechter 2012a: 267)
- d. *tashká'eshka, q̣qwe íseka*, *karáte* *ísekoote...*
tashka-eshka q̣qwe i-sek=E=Ø kratE i-sek=ootE
 how-SMLT all PV.INS-make=SV=CONT right.there PV.INS-make=EVID
 'however it was, everything she made, she did it perfectly' (Trechter 2012a: 19)
- e. *tashká'eshka ikahekoomako'sh*
tashka-eshka i-ka-hek=oowąk=o'sh
 how-SMLT PV.INS-INCP-know=NARR=IND.M
 'he somehow remembered' (Trechter 2012a: 251)
- f. *tashká'eshkanash ní'shak* *résh* *rahq̣qke'sha?*
tashka-eshka=rash r̄-ishak resh ra-hąkE=o'sha
 how-SMLT=ATT 2POSS-PRO like.this 2A-stand.POS.AUX=INT.M
 'how come you are like this?' (Hollow 1973a: 6)
- g. *tashká'eshka rarátaxo'sha?*
tashka-eshka ra-ra-tax=o'sha
 how-SMLT 2A-INS.MTH-make.loud.noise=INT.M
 'how come you are crying?' (Hollow 1973a: 42)
- h. *riráse*, *tashkáhqq* *éeheero'sha?*
 ri-ras=E tashka=hąq ee-hee=o'sha
 2POSS-name=SV how=INS PV-say=INT.M
 'your name, how is it said?' (Hollow 1973a: 20)

5 Nominal morphology

These data show that *tashká* gives the most generic reading of ‘how.’ Questions involving this pronoun are very open-ended, and the speaker may not necessarily know what the potential answers to the question are. The addition of the similitive *-eshka* tends to be used with questions dealing with motivation or reasoning. The range of uses for *tashkáhqq* in the corpus are limited to asking how to say people’s names. The use of the instrumental postposition on *tashká* implies that the question is asking ‘using what’ or ‘by what’ is an action completed or a state accomplished. Personal fieldwork reveals that one consultant’s father would always exclaim *tashkáhqq* when he would see his relatives, expecting to hear how his family is doing.

Hollow (1970: 483) states that there is a fourth way to ask ‘how’: *táhqq*, which he translates as ‘what thing.’ He gives no other examples of this pronoun in his dictionary, nor does it show up anywhere else in the corpus. It is unclear if this word is exclusively used for instruments, or if there are other situations in which a speaker might use this pronoun over others like *tashkáhqq*.

5.4.2.6 Interrogative ‘why’: *tashkák*

The interrogative ‘why’ is clearly derived from *tashká* ‘how’ plus the different-subject switch-reference marker /=ak/. This word is very close semantically to ‘how’ in Mandan, as there are instances of *tashká* where the translation given is ‘how’ in one sentence, and then repeated later on in a narrative and translated as ‘why.’ Examples of this interrogative pronoun appear below.

(46) Examples of *tashkák*

- a. *numá'kaaki, tashkák wáa'qqwe rakú'kiná'ka'na?*
 ruwá'k-aaki tashka=ak waa-qqwe ra-kú'#kirá'=ka=o'rą
 person-COLL how=DS NOM-all 2A-give#tell=HAB=INT.F
 ‘to people, why do you always tell them everything?’ (Hollow 1973a: 213)
- b. *tashkák minike, máamakaharaxi...*
 tashka=ak wí-rík=E waa-wąąkE#hrE=xi
 how=DS 1POSS-son=SV NEG-lie.POS.AUX#CAUS=NEG
 ‘how come my son, she did not leave him’ (Hollow 1973a: 82)
- c. *tashká'eshkak ní'qqwe raxirekanito'na?*
 tashka-eshka=ak r~i-ąąwe ra-xireka=rít=o'rą
 how-SMLT=DS 2POSS-PV.POSS-all 2A-be.skinny=2PL=INT.F
 ‘why are you all so thin?’ (Hollow 1973b: 138)

5.4 Pronouns

- d. *téehq wáaraki'hinixak, tashkák*
 teeħq waa-ra-ki'h=rjx=ak tashka=ak
 be.long.time NEG-2A-arrive.back.here=NEG=DS how=DS
éewereho'sh
 ee-we-reh=o'sh
 PV-1A-think=IND.M
 'With you not having returned after a long time, I wondered why' (Hollow 1973a: 318)
- e. *tashká'eshkanashki, ishák i'eexinash*
 tashka-eshka=rash=ki ishak i-eexi=rash
 how-SMLT=ATT=COND PRO PV.POSS-tripe=ATT
wóokuhkereroomako'sh
 wV-o-kuh=krE=oowąk=o'sh
 some-PV.LOC-want=3PL=NARR=IND.M
 'for whatever reason, they wanted some of that tripe' (Trechter 2012a: 267)

Once again, this interrogative is never used as a relativizer in Mandan. We see a few unexpected form that are similar to the expected *tashkák*, such as in (46c), where we again see the similitive being used in a context where the speaker is assuming that there is some motivation behind an action taken by the listeners. The speaker is using *tashká-eskak* to ask why they are skinny, because he is accusing them of doing something to cause themselves to become skinny. If the speaker had used *tashkák*, the implication is that the speaker is asking what outside forces have caused the listeners to become so skinny.

Most instances of asking someone's motivation involves *tashkák* in the corpus, and this interrogative uses the different-subject switch-reference marker =ak. In Trechter (2012a), we see numerous occasions where Mr. Benson produces *tashká'eshkanashki* as an indefinite pronoun, using the conditional =ki instead of the expected =ak. It is not clear if speakers have more flexibility to use other clause-final morphology instead of the different-subject switch-reference marker, or if constructions such as the one in (46e) are a feature of Mr. Benson's idiolect, since no other consultant contributed similar constructions anywhere else in the corpus.

5.4.2.7 Interrogative 'how many': *ta'qq*

Asking about quantities in Mandan involves the interrogative pronoun *ta'qq* 'how many' or 'how much.' The root of this pronoun is the interrogative *tá*, plus

5 Nominal morphology

the element /aq/ that has some kind of quantitative reading. There is no clear Proto-Siouan origin for the long nasal /aq/ in this pronoun. However, it may be related to the /aq/ in *qqwe*, especially if the -we in *qqwe* is the same indefinite marker as the -we in *tewé*. Examples of this pronoun appear below.

(47) Examples of *ta'qq*

- a. *óta'qas* *hi'sha?*
 o-ta'qas=s hi=o'sha
 PV.LOC-how.many=DEF arrive.here=INT.M
 'what time is it?' (Kasak 2014a: 10)
- b. *mīhe* *ta'qqroo* *ká'kereroomako'sh*
 wījh=E ta'qas=roo ka'=krE=oowak=o'sh
 woman=sv how.many=DEM.MID possess=3PL=NARR=IND.M
 'women, however many there, he had them' (Hollow 1973b: 76)
- c. *rapkakiriih* *ta'qqro'sha?*
 ra-ki-pa-kriih ta'qas=o'sha
 2A-ITR-INS.PUSH-count how.many=INT.M
 'how many did you count?' (Trechter 2012a: 243)
- d. *wáahokshuke* *ta'qqki*, *qqwena*
 waa-ho-kshuk=E ta'qas=ki qaqwe=rq
 NOM-voice#be.narrow=sv how.many=COND all=TOP
 rá'ke'ha *kú'karani...*
 ra'-ke'h=E=∅ *kú'=krE=rí*
 INS.HEAT-be.angry=sv=CONT give=3PL=SS
 'when there were however many animals, all of them got angry for
 him and...' (Hollow 1973a: 43)

This interrogative pronoun is exclusive to being used with quantification. We can see that in (47a) that *ta'qq* is being used for asking what time it is. Literally, this question is asking 'at how many has it arrived?' The arrival in question is that of the arms on a clock. This pronoun can also be used in an indefinite sense, as we see in (47b) and (47d), where the speakers are relating that they are unsure of a number, rendering the translation in English as 'however many'.

5.4.2.8 Interrogative 'when': *taxkó* and *takáki*

The least common interrogative pronouns in the corpus are those that deal with time: i.e., 'when.' Hollow (1970: 483) gives *taxkó* as 'when,' but this word never

5.5 *Quantification*

appears anywhere else in the corpus. There are only two instances of interrogative pronouns for ‘when’ present in the corpus, and both instances are the exact same sentence, repeated. The word used for ‘when’ is *takáki*. This word is composed of the interrogative root *tá*, plus the habitual *=ka* and the conditional *=ki*. This example appears below.

- (48) Example of *takáki*

<i>takáki</i>	<i>sháte</i>	<i>óraraahinito'sha?</i>
<i>ta=ka=ki</i>	<i>sháte=E</i>	<i>o-ra-rEEh=rít=o'sha</i>
WH=HAB=COND	hunt=SV	PV.IRR-2A-go.there=2PL=INT.M

‘when will you all go on a hunt?’ (Holloway 1973b: 140)

The conditional *=ki* is a complementizer that is often translated as ‘when’ or ‘if’, so its semantics make sense with the interrogative pronoun for time-related questions. The paucity of occurrences in the data stems from the lack of everyday conversation in the corpus, since the small number of L1 speakers at the time of fieldwork was such that previous fieldworkers and consultants prioritized recording traditional narratives rather than minutiae of everyday life or casual conversations.

5.5 Quantification

Mandan has a small set of quantifiers. These quantifiers are all inflected as stative verbs. Cardinal numerals are also inflected as stative verbs. Ordinal numerals are derived from cardinal numerals. The behavior of these quantification-related lexical items is described below. I first describe numerals in §5.5.1, then discuss quantifiers in §5.5.2.

5.5.1 Numerals

Contemporary Mandan features a decimal (i.e., base-10) counting system. Proto-Siouan is posited to have had a quinary (i.e., base-5) counting system. Numbers above five in certain Siouan languages are compounds involving numbers that are below five. This older system of counting also has remnants in the Plains Sign Language that the Mandan traditionally used, where counting goes from the pinkie of the right hand to the thumb. To count beyond five, one extends the thumb of their left hand to touch the thumb of their right hand for six, and then count seven on their left index finger, eight on their middle finger, and so on until reaching ten at the left pinkie (Tomkins 1926: 22).

5 Nominal morphology

5.5.1.1 Cardinal numerals

The cardinal numerals for Mandan appear in the table below.

Table 5.6: Cardinal numerals from 1 to 10

Mandan	English	Mandan	English
máxana	'one'	kiíma	'six'
núp	'two'	kúupa	'seven'
náamini	'three'	tétoki	'eight'
tóop	'four'	máxpe	'nine'
kixúqh	'five'	pirák	'ten'

The stems for the numerals that end in /p/ will often appear with a word-final /E/ to avoid ending a word in a bilabial stop.⁷ We can see examples of these cardinal numerals in the data below.

⁷See §3.5.1 for the earlier discussion of this tendency against ending a word in /p/ in Mandan.

5.5 *Quantification*

Cardinal numerals above ten are all constructed by adding *aak-*, a contracted form of the postposition *áaki* ‘above.’ This prefix is then followed by a numeral one through nine. We can see these numerals on the table below.

Table 5.7: Cardinal numerals from 11 to 19

Mandan	English	Mandan	English
<i>aakmáxana</i>	‘eleven’	<i>aahkiíma</i>	‘sixteen’
<i>aaknúp</i>	‘twelve’	<i>aahkúupa</i>	‘seventeen’
<i>aaknáamini</i>	‘thirteen’	<i>aaktétoki</i>	‘eighteen’
<i>aaktóop</i>	‘fourteen’	<i>aakmáxpe</i>	‘nineteen’
<i>aahkixúyh</i>	‘fifteen’		

Even though the prefix *aak-* begins with a long vowel, speakers will typically leave this prefix unstressed when speaking, especially when recording vocabulary lists that are meant for pedagogical uses. However, speakers will vary in whether they stress the initial syllable or where primary stress typically falls on the cardinal numeral: e.g., *aaknúp* and *áaknup* both appear in the corpus for ‘twelve.’ For some speakers, a Dorsey’s Law vowel is inserted between the *aak-* and the initial consonant of the numeral: i.e., *aakmáxana* or *aakamáxana* are both ‘eleven.’ We can see examples of these numerals below.

(50) Examples of cardinal numerals 11 through 19

- a. *aahkiímanashini aahkixúyh ú'kerekto'sh,*
aak#kiiwq=rash=rj aak#kixqyh ú'=krE=kt=o'sh
above#five=ATT=ss above#six be.near=3PL=POT=IND.M
tamáanakere
ta-waarq=krE
AL-winter=3PL

‘they were maybe fifteen or sixteen, their age’ (Trechter 2012a: 41)

- b. *óaaakmaxanas hí'sh*
o-aak#waxra=s hi=o'sh
PV.LOC-above#one=DEF arrive.here=IND.M
 ‘it is eleven o’clock’ (Kasak 2014a: 16)

Numerals above nineteen are formed by adding the base cardinal numeral to the ‘times’ marker *ha*, then adding the word *pirák* ‘ten.’ Thus, a numeral like ‘twenty’ is literally ‘twice ten.’ Multiplicative numerals in Mandan are described further in §5.5.1.3. We can see a table of these numerals below.

5 Nominal morphology

Table 5.8: Cardinal numerals from 20 to 90

Mandan	English	Mandan	English
<i>núphaphirak</i>	'twenty'	<i>kíimahaphirak</i>	'sixty'
<i>náaminihaphirak</i>	'thirty'	<i>kúupahaphirak</i>	'seventy'
<i>tóophaphirak</i>	'forty'	<i>tétokihaphirak</i>	'eighty'
<i>kixíqúhaphirak</i>	'fifty'	<i>máxphehaphirak</i>	'ninety'

Putting numerals together involves putting the highest number first, followed by the same-subject switch-reference marker and the next highest number. We can see this below for numbers between twenty and thirty.

- (51) Forming numbers above 20

núphaphirakini-máxana 'twenty-one'
núphaphirakini-núp 'twenty-two'
núphaphirakini-náamini 'twenty-three,' etc.

Larger cardinal numerals in Mandan are *híjsuk* 'hundred' and *híjsuk ikaakohi* 'thousand.' The word for 'thousand' translates as 'hundred that is overly full.'

5.5.1.2 Ordinal numerals

Ordinal numerals in Mandan are derived from their cardinal forms plus the ordinal preverb *i-*. The one exception to this is the suppletive ordinal *íqute* 'first.' This numeral will sometimes appear as *i'qute* with the ordinal preverb. This pleonastic use of *i-* is likely a regularization of the paradigm for forming ordinals, given that *íqute* is the only exception. The table below contains examples of the ordinal numerals in Mandan up to ten.

Table 5.9: Ordinal numerals from 1 to 10

Mandan	English	Mandan	English
<i>íqute</i>	'first'	<i>íkiima</i>	'sixth'
<i>ínap</i>	'second'	<i>íkuupa</i>	'seventh'
<i>ínaamini</i>	'third'	<i>ítetoki</i>	'eighth'
<i>ítoop</i>	'fourth'	<i>ímaxpe</i>	'nine'
<i>íkixíqúh</i>	'fifth'	<i>ípirak</i>	'tenth'

In addition to these ordinal numerals, there is also the quasi-ordinal *híika* 'last.' We can see examples of these numerals in the data below.

5.5 *Quantification*

(52) Examples of ordinal numerals

- a. *ú̄te* *kawáa’isehka* *ée* *ó’kere’sh*
 ú̄t=E ka-waa-i-sek=ka ee o’=krE=o’sh
 be.first=sv AGT-NOM-PV.INS-do=HAB DEM.DIST be=3PL=IND.M
 ‘at first, they were the workers’ (Hollow 1973a: 51)
- b. *ishtūhipak, itoophqk kú’kas* *manáš*
 ishtūh#ip=ak i-toop#hák k’-ú̄ka=s
 night#next.one=DS PV.ORD-four#STND.POS 3POSS.PERS-older.brother=DEF
kihíjra náakeroomako’sh
 wrash ki-híj=E=Ø rąqkE=oowąk=o’sh
 tobacco ITR-drink=sv=CONT sit.POS.AUX=NARR=IND.M
 ‘the next night, the fourth one’s older brother was sitting there smoking’ (Hollow 1973b: 245)
- c. *hiróo, ikixú̄hanaki, imaatiht*
 hiroo i-kixú̄h=nä=ki i-wąqtih=t
 now PV.ORD-five=TOP=COND PV.DIR-outside=LOC
súhkereroomako’sh
 suk=krE=oowąk=o’sh
 exit=3PL=NARR=IND.M
 ‘now, when it was the fifth one, they went outside’ (Hollow 1973a: 201)

5.5.1.3 Multiplicative and other numerals

The most common kinds of numerals used in Mandan are the cardinal and ordinal numerals. However, there are other specific conditions where neither of these numerals is appropriate in Mandan. There are three additional kinds of numerals in Mandan described below. Multiplicative numerals, presented in §5.5.1.3.1, are used to explain how many times something has happened. In §5.5.1.3.2, the distributive numerals are used to describe the grouping in which an action has happened. Collective numerals are used to unite a grouping of people or things as a single unit, which are described in §5.5.1.3.3.

5.5.1.3.1 Multiplicative numerals

When the occasion arises that one must explain the number of times something has happened, multiplicative numerals are used. These numerals are adverbial in nature, and are formed by adding the ‘times’ marker *ha* after a cardinal numeral. The one unexpected form is once again for the numeral ‘one,’ where instead of

5 Nominal morphology

máxana, a truncated form *máx* take the ‘times’ marker instead. We can see the multiplicative numerals from one to ten below.

Table 5.10: Multiplicative numerals from 1 to 10

Mandan	English	Mandan	English
<i>máxha</i>	‘once, one time’	<i>kíimaha</i>	‘six times’
<i>núphä</i>	‘twice, two times’	<i>kúupaha</i>	‘seven times’
<i>náaminiha</i>	‘thrice, three times’	<i>tétokiha</i>	‘eight times’
<i>tóophä</i>	‘four times’	<i>máxpeha</i>	‘nine times’
<i>kixíqha</i>	‘five times’	<i>pirákha</i>	‘ten times’

We can see examples of these numerals in the data below.

(53) Examples of multiplicative numerals

- a. *káni* *máahe* *núphä* *ní'kereroomako'sh*
 ka=r̥i wäq̥h=E rüp#ha r̥i'=krE=oowäk=o'sh
 prov=ss arrow=sv two#times shoot=3PL=NARR=IND.M
 ‘and so they shot arrows at him twice’ (Hollow 1973b: 298)
- b. *tóophä* *kiná'shka*, *wáapaksqhe* *míka*
 toop#ha kirä'=shka waa-pa-ksäh=E wík=E
 four#times tell=DSJ NOM-INS.PUSH-be.worried=sv be.none=sv
 nákini...
 räk=r̥i
 SIT.POS=SS
 ‘even though he told it to him four times, he sat there not paying any attention’ (Hollow 1973a: 156)
- c. *máxha* *numá'keena* *ó'rak*, *Minítäari*
 wäx#ha ruwä'k=ee=rä o'=ak wri#taari
 one#times man=DEM.DIST=TOP be=DS water#cross
 numá'koomako'sh
 ruwä'k=oowäk=o'sh
 man=NARR=IND.M
 ‘one time, there was a man, and he was a Hidatsa man’ (Trechter 2012a: 11)

As previously seen in §5.5.1.1, multiplicative numerals are used alongside cardinal numerals to form numbers above nineteen: e.g., *núphapirak* ‘twenty,’ literally ‘twice ten.’

5.5 *Quantification*

5.5.1.3.2 Distributive numerals

Distributive numerals serve as adverbials, describing how people or other nouns are arranged within a proposition. It is often translated as ‘X-by-X,’ ‘X of each,’ or ‘in groups of X.’ Rather than having dedicated suffix or prefix for these numerals, Mandan has two different reduplicative processes to indicative distributivity. For monosyllabic numerals, its onset and a single mora of the syllable are prefixed onto the numeral. Polysyllabic numerals involve the onset and full moraic weight of the final syllable being suffixed onto the end of the word. If a numeral ends in a consonant, then the reduplication happens before that final vowel. We can see this process at work in the table below.

Table 5.11: Distributive numerals from 1 to 10

Mandan	English	Mandan	English
<i>máxanana</i>	‘one by one’	<i>kíimama</i>	‘six by six’
<i>nunúp</i>	‘two by two’	<i>kíupapa</i>	‘seven by seven’
<i>náaminimini</i>	‘three by three’	<i>tétokiki</i>	‘eight by eight’
<i>totóop</i>	‘four by four’	<i>máxpexpe</i>	‘nine by nine’
<i>kixúyxuh</i>	‘five by five’	<i>pirárap</i>	‘ten by ten’

In addition to these distributive numerals, there are other quasi numerals like *xamámah* ‘little by little’ that follow the same pattern of expressing a distributed amount. We can see examples of distributive numerals below.

(54) Examples of distributive numerals

- a. *pshíixaare* *tóop* *kaskékerek*, *nunúp* *ká’ni...*
pshíixaar=E *toop* *ka-skE=krE=ak* *rú~rup* *ka’=ri*
sage=SV *four* *INS.FRCE-tie=3PL=DS* **DISTØtwo** *possess*=SS
‘they tied up four sage plants, and they had two of each kind...’ (Hollow 1973a: 162)
- b. *tkíni* *réehoomako’sh*, *máxanana*
tki=rí *rEEh=oowák=o’sh* *wáxrá~rā*
touch=SS *go.there*=NARR=IND.M **one**~DIST
‘they touched him and they left, one by one’ (Hollow 1973b: 261)

Distributive numerals are rare in the corpus, but they are present in list form in all previous descriptions of Mandan grammar (Kennard 1936, Hollow 1970, Mixco 1997a).

5 Nominal morphology

5.5.1.3.3 Collective numerals

Collective numerals are used to indicate that a group is treated as a single unit that consists of a specific quantity. The translations for these numerals are often ‘X of them’ or ‘all X of them,’ where X is the number of entities in question. These numerals are generally restricted to describing humans or anthropomorphized animals in traditional narratives. The morphology of collective numerals has already been discussed previously in §5.1.1.2.1. The one exception to the typical *-sha* and *-shashka* marking is the suppletive *máxanana* ‘one of them.’ This suppletive form is homophonous with the distributive numeral.

Table 5.12: Collective numerals from 1 to 10

Mandan	English	Mandan	English
<i>máxanana</i>	‘one of them’	<i>kiimasha</i>	‘six of them’
<i>núpsha</i>	‘two of them, both of them’	<i>kúupasha</i>	‘seven of them’
<i>náaminisha</i>	‘three of them’	<i>tétokisha</i>	‘eight of them’
<i>tóopsha</i>	‘four of them’	<i>máxpesha</i>	‘nine of them’
<i>kixúuhsha</i>	‘five of them’	<i>piráksha</i>	‘ten of them’

Collective numerals are rare in the corpus. Examples of these numerals appear below.

(55) Examples of collective numerals

- a. *máxanana rusháni* *warátaa réeharani...*
waxra~rɑ̃ ru-shE=rj̄i *wra’=taa rEEh#hrE=rj̄i*
one~COLL INS.HAND-grasp=ss fire=LOC go.there#CAUS=ss
‘one of them took it and put it into the fire...’ (Hollow 1973b: 175)
- b. *oo ó’harani numá’kaaki húkeres* *shéekini*
oo o’#hrE=rj̄i ruwɑ̃’k-aaki h̄u=krE=s *shreek=rj̄i*
DEM.MID be#CAUS=ss person-COLL be.many=3PL=DEF war.whoop=ss
tóopshashka *kahashkereroomako’sh*
toop-sha-shka *ka-hash=krE=oowąk=o’sh*
four-COLL-INTS.COLL INS.FRCE-be.taken.apart=3PL=NARR=IND.M
‘from there, the many people war whooped and slaughtered all four of them’ (Hollow 1973b: 255)
- c. *nínúpshashka* *raráahini* *éerehinitki,*
rj̄-rūp-sha-shka *ra-rEEh=rj̄i* *ee-reh=rj̄t=ki*
2s-two-COLL-INTS.COLL *2A-go.there=ss* *PV-want=2PL=COND*

5.5 Quantification

- ptúuhqhkere* *wawiwak* *hékto'sh*
 p-tuuhák=krE wa-wiwa=ak hE=kt=o'sh
 1SG.POSS-sister's.child=3PL 1A-look.after=DS see=POT=IND.M
 'if both of you want to go, then I will look after my nephews' (Hollow 1973b: 64)

d. *ínupshashkana* *húpe* *ké'ka'rak*
 i-rúp-sha-shka=rá húp=E ke'ka'=ak
 PV.ORD-TWO-COLL-INTS.COLL=TOP moccasin=sv keep#possess=DS
kú'kerek...
kú'=krE=ak
 give=3PL=DS
 'both of them kept his shoes for him...' (Hollow 1973a: 109)

e. *Rápuseena*, *éeheni*
 ra'-pus=ee=rá eeherí
 INS.HEAT-make.marks=DEM.DIST=TOP and
kohúkereseena, *ítoopsha*
 ko-húq=krE=s=ee=rá i-toop-sha
 3POSS.PERS-mother=3PL=DEF=DEM.DIST=TOP PV.ORD-four-COLL
ihaa'aakit *keréehkereroomako'sh*
 i-haa#aaki=t k-rEEh=krE=oowák=o'sh
 PV.DIR-cloud#above=LOC VERT-go.there=3PL=NARR=IND.M
 'Charred in Streaks, along with their mother, all four of them returned to heaven' (Hollow 1973a: 175)

One peculiarity is that ordinal preverb *i-* often accompanies the collective suffixes, as we can see in (55c) through (55e). It is not clear why the ordinal preverb is present on these numerals. Hollow (1970: 27) even reports that this preverb can occur with distributive numerals: e.g., *ínaaminimini* ‘three by three.’ One possibility is that speakers are generalizing *i-* as an indicator that the numeral is simply not a cardinal numeral. Cardinal numerals never bear *i-*, so the presence of this preverb on non-cardinal numerals could be symptomatic of a paradigmatic change in the treatment of numerals in Mandan. Park (2021) reports a similar phenomenon in Hidatsa, where *ii-* is prefixed onto numerals referencing people, even if the numeral is not collective.

It is unclear whether this variability between the presence of this preverbal element is related, given the fact that virtually all L1 speakers of Mandan since the beginning of the twentieth century have also been fluent Hidatsa speakers. This mass bilingualism could have caused aspects of the Hidatsa number system

5 Nominal morphology

to be mapped onto Mandan ones, but it is also possible that this system was in flux prior to the collapse of the tendency for children to learn both their parents' languages when individuals from different groups married. Unless other materials are discovered that might shed light on this situation, these hypotheses will have to remain in the realm of speculation.

5.5.2 Quantifiers

While Mandan does have several classes of numerals, it has relatively few quantifiers. Like numerals, quantifiers are inflected like stative verbs whenever person features are needed. Most quantifiers are unbound words that bear their own primary stress, though the 'some' allomorph of the unspecified argument marker *waa-* appears prefixed onto the verb. An unbound version, *wáa*, does exist, but it is more rare in the corpus. The quantifier *tú* 'some' is often used in existential expressions, including in constructions of possession: e.g., *tasúke túkereroomako'sh* 'they had a child' is literally 'some child was theirs.'

A table with the quantifiers in Mandan appears below in Table 5.13.

Table 5.13: Quantifiers in Mandan

Mandan	English
<i>qqwe</i>	'all, every'
<i>hú</i>	'many'
<i>íka</i>	'every'
<i>mík</i>	'none'
<i>sáqka</i>	'few'
<i>tú</i>	'some'
<i>wáa~waa-</i>	'some'

Quantifiers appear postposed after the noun phrases they modify. We can see examples of quantifiers in the data below.

(56) Examples of quantifiers

- a. *má'a'q'st* *máana hú* *núunihkereroomako'sh*
 waa-*q't=t* waaraq *hú* ruurih=krE=oowák=o'sh
 NOM-be.in.past=LOC winter many be.AUX.PL=3PL=NARR=IND.M
 'they were already there for many years' (Hollow 1973a: 220)

5.6 Postpositions

- b. *súknuma'hkères ptii sáqkana hékereroomako'sh*
 suk#r̥wa'k=krE=s ptii sáqka=r̥a hE=krE=oowąk=o'sh
 child#man=3PL=DEF buffalo **FEW=TOP** see=3PL=NARR=IND.M
 'the young men saw a few buffalo' (Hollow 1973b: 79)
- c. *súhkères áqwe péeshi sanáake'sh*
 suk=krE=s áqwe peeshi srąkE=o'sh
 child=3PL=DEF all stomach be.round=IND.M
 'all the children's stomachs were round' (Hollow 1973b: 81)
- d. *máaxtikokshuk wáahektiki,*
 wąqxtik#o-kshuk waa-hE=kti=ki
 rabbit#PV.IRRbe.narrow **some-see=POT=COND**
téeherekaroomako'sh
 tee#hrE=ka=oowąk=o'sh
 be.dead#CAUS=HAB=NARR=IND.M
 'whenever he saw some cottontails, he would always kill them' (Hollow 1973a: 196)

The definite article and other demonstratives typically appear after the noun phrase and before the quantifier, but quantifiers are able to take other nominal morphology, like determiners, augmentatives, or topic markers. The placement of the determiners affects the readings of the phrase somewhat: e.g., *súk xamáh hýs* 'the many small children' vers *súk xamáhs hý* 'many [of] the small children.'

5.5.3 Summary of quantification

All words relating to quantification in Mandan take stative morphology when dealing with first or second person entities. Cardinal numerals are the most commonly encountered form of quantification, followed by quantifiers. Non-cardinal numerals can take the ordinal preverb *i-*, given that there seems to be a leveling process where this *i-* is no longer a marker of ordinality, but a marker of non-cardinality. This seemingly superfluous *i-* may be due to language contact with Hidatsa, which will likewise add *ii-* before certain numeral. Across all the kinds of numerals, the one numeral that has a suppletive form is 'one,' while all other numbers follow the expected pattern for any given numeral class.

5.6 Postpositions

Typologically, languages that feature a default SOV word order tend to have postpositions instead of prepositions. Mandan conforms to the typology by placing

5 Nominal morphology

adpositions after the noun phrase over which they have scope. Many concepts in Mandan are reducible to lower valency verbs that take only one or two arguments. This tendency to have oblique semantics encoded into a verb stems from the historical development of preverbs, in which Proto-Siouan or Pre-Proto-Siouan postpositions became reanalyzed as being integral parts of the following verb, rather than independent words or enclitics that pertained to the preceding noun phrase (Helmbrecht 2006, 2008, Helmbrecht & Lehmann 2008, Kasak 2019).

Ignoring these preverbs, true postpositions in Mandan form two classes: postpositional enclitics and free postpositions. Postpositional enclitics are monosyllabic postpositions that do not have a primary stress of their own, which are addressed in §5.6.1. Free postpositions are either polysyllabic or are compound postpositions, which are addressed in §5.6.2.

5.6.1 Postpositional enclitics

Postpositional enclitics adjoin to the rightmost edge of the noun phrase over which they scope. As enclitics, they can never exist as words unto themselves and always rely on another prosodic word to be pronounced. The these postpositional enclitics are shown on Table 5.14 below.

Table 5.14: Postpositional enclitics in Mandan

Mandan	English
/=t/~/=taa/	locative ‘in, at, to, toward’
/=hąq/	instrumental ‘with, along, around’
/=ku’sh/	inessive ‘inside, within’ (enclosed space)
/=rok/	inessive ‘inside, within’ (area)

Some of these postpositional enclitics are able to be compounded. We can see examples of these enclitics in the following subsections.

5.6.1.1 Locative: *=t* and *=taa*

The most common postposition in the corpus is the locative *=t* or *=taa*. Kennard (1936: 25) explains that *=taa* is the true locative, while *=t* is “essentially directional in function.” He does, however, concede that these items generally overlap in usage. Throughout the corpus, both these locative markers are treated as equivalent by speakers, with one speaker producing an utterance that features *=t*, only to repeat that same utterance later on in the narrative with *=taa* instead.

5.6 Postpositions

Kennard’s observation about $=t$ tending to be used in directional expressions has some weight to it, but in the corpus, this difference is not systematic. In Hollow’s (1970) dictionary, locative $=t$ occurs frequently, but Hollow consistently glosses each instance of $=t$ as having the underlying form of $/=taa/$. He makes no comment on when one should appear versus the other. Mixco (1997a: 39) makes no discussion of the difference between $=t$ and $=taa$ in his grammar, as only $=taa$ appears in his list of postpositions.

Given the propensity for Mandan speakers to decrease the overall intensity of phonation at the end of words, it is possible that $=t$ represents a truncated version of $=taa$. In Proto-Siouan, $^*ta(a)$ is reconstructed as a general locative, with reflexives being found in all branches of the Siouan language family (Rankin et al. 2015). As such, it is likely the case that this split between $=t$ and $=taa$ is an innovation in Mandan. In recordings conducted by Mr. Corey Spotted Bear with Mr. Edwin Benson in the mid 00s and early 10s, Mr. Benson produced only $=taa$ locatives in list elicitation. The apocope of /aa/ does not have any phonological conditioning, so this manifestation as $=t$ may be, in part, an artifact of rapid speech. There may be other factors involved in choosing $=t$ over $=taa$, but my own fieldwork with Mr. Benson and with other Mandan speakers do not provide a conclusive motivation for choosing one over the other.

We can see examples of the locative, both as $=t$ and as $=taa$, in the data below.

5 Nominal morphology

ɬ'tkika'sh

ɬ'-tkika=o'sh

PV.RFLX-hurl=IND.M

'he took one of them and threw him at the wall' (Hollow 1973a: 158)

- d. *ókaraxt* *kxúhkereroomako'sh*
 o-krax=t kxúh=krE=oowąk=o'sh
 PV.LOC-be.low=LOC lie.down=3PL=NARR=IND.M

'they went to bed in a coulee' (Hollow 1973a: 171)

- e. *páaxu shishíhka* *wará'nast*
 paaxu shi~shih=ka wra'#rąt=t
 nose AUG~be.sharp=HAB fire#be.in.middle=LOC
ikų'tekereroomako'sh
 i-kų'tE=krE=oowąk=o'sh
 PV.INS-throw=3PL=NARR=IND.M

'they threw the mosquito in the middle of the fire' (Hollow 1973b: 153)

- f. *máapsitaarak*, *miní ropxé nuréeho're*
 wąapsi=taa=ak wrị ropxE rų-rEEh=t=o're
 morning=LOC=DS water enter 1A.PL-go.there=POT=IND.F
 'in the morning, we will go swimming' (Hollow 1973b: 105)

- g. *rokqkaxi'heena* *tí óhąkt*
 rokąkə#xi'h=ee=rą ti o-hąk=t
 old.woman#be.old=DEM.DIST=TOP house PV.LOC-STND.POS=LOC
nákak...
rąk=ak
 SIT.POS=DS

'an old lady was sitting in the corner of the house and...' (Hollow 1973b: 151)

- h. *máataht*, *máana kú' áahka wáa'ohe*
 wąatah=t waa=rą ku' aahka waa-o-hE
 river=LOC some=TOP be.beyond RTRD NOM-PV.IRR-see
ómikak...
o-wík=ak
 PV.IRR-be.none=DS
 'in the river, no one could see anything just a little ways away' (Hollow 1973a: 214)

As the data above demonstrate, there can be no conclusive factor for a directional versus stationary use for *=t* and *=taa*. We see a stationary locative reading

5.6 Postpositions

for $=t$ in (57d), (57g) and (57h). A directional locative reading for $=taa$ can be seen in (57b), as well as a temporal locative reading for ‘in the morning’ in (57f).

Both $=t$ and $=taa$ are able to indicate a stationary location or express motion towards a location, but directional uses of these locative are often accompanied by the directional preverb *i*-, as we can see in the data below.

(58) Examples of locatives plus the directional preverb *i*-

- a. *ímaataht* *waréeh* *íwateero'sh*
i-waqatah=t *wa-rEEh* *i-wa-tee=o'sh*
 PV.DIR-river=LOC 1A-go.there PV.INS-1A-like=IND.M
 ‘I would like to go to the river’ (Hollow 1973a: 35)
- b. *numá'ks ími'tit* *keréehoomako'sh*
ruwá'k=s i-wí' #ti=t *k-rEEh=oowák=o'sh*
 man=DEF PV.DIR-stone#house=LOC VERT-go.there=NARR=IND.M
 ‘the man went back to the village’ (Hollow 1973a: 177)
- c. *ími'titaa* *keréehí'herekereki*,
i-wí' #ti=taa *k-rEEh#í'-hrE=krE=ki*
 PV.DIR-stone#house=LOC VERT-go.there#PV.RFLX-CAUS=3PL=COND
numá'kaaki máamikoomako'sh
ruwá'k-aaki waa-wík=oowák=o'sh
 person-COLL some-be.none=NARR=IND.M
 ‘when they got themselves back to the village, there were not any people there’ (Hollow 1973a: 182)
- d. *ípashahqkt* *náaketaa* *máa'qk*
i-pashahqk=t *rąqkE=taa* *waa'ąk*
 PV.DIR-north=LOC sit.POS.AUX=LOC land
íwasekto'sh
i-wa-sek=t=o'sh
 PV.INS-1A-make=POT=IND.M
 ‘to the north, up that way, I will make land’ (Hollow 1973a: 9)
- e. *kú'rak keréeho'sh*, *iXoshkataa*
kú'=ak k-rEEh=o'sh *i-Xoshka=taa*
 give=DS VERT-go.there=IND.M PV.DIR-Xoshga=LOC
 ‘[after] giving it to him, he went home, to the Xoshga’⁸ (Hollow 1973a: 60)

⁸The Xoshga are a band of Hidatsa who separated from the main settlements of the Hidatsa at Like-a-Fishhook Village. These Hidatsa left with Crow Flies High (Hidtsa) and Bobtail Bull

5 Nominal morphology

- f. *károotiki, róo numá'ks íreextaa*
 ka=ooti=ki roo ruwq'k=s i-reex=taa
 PROV=EVID=COND DEM.MID man=DEF PV.INS-glisten=LOC
áareehkaroomako'sh
aa-rEEh=ka=oowąk=o'sh
 PV.TR-go.there=HAB=NARR=IND.M
 'and then, it kept taking this man here towards the light' (Hollow 1973b: 95)

The presence of a postposition in Mandan usually precludes the presence of definite marking. Coen (2022) finds that Siouan languages typically omit any kind of definiteness marking on nouns within a propositional phrase, suggesting that postpositions carry an innate ambiguous definiteness feature, which appears to also be the case in Mandan. The definite article *=s* appears extremely rarely within the corpus. In (59) below, we see both *=s* and *=taa* on 'tree.' There is no real ambiguity over whether the children threw something at any tree or a specific tree, but the *=s* appears here regardless.

- (59) Co-occurrence of definiteness with postposition *=taa*
káni súhkeres istámi kirúshaani
 ka=r̥i suk=krE=s ista#w̥i ki-ru-shE=r̥i
 PROV=ss child=3PL=DEF face#orb SUUS-INS.HAND-hold=ss
ímanastaa íkuy'tekereroomako'sh
i-wrą=s=taa i-kuy'tE=krE=oowąk=o'sh
 PV.DIR-tree=DEF=LOC PV.DIR-throw=3PL=NARR=IND.M
 'and then, the children took their eyes and threw them toward the tree'

(Mandan) around 1870 to live off the reservation imposed upon their peoples by the federal government. The Xoshga wished to live traditional lifestyles. The U.S. Army forced the Xoshga band to abandon their village near the confluence of the Missouri and Yellowstone Rivers in 1894. While these people were mostly Hidatsas, several Mandans and at least one Arikara lived with them at the time that they were forced onto the Fort Berthold Reservation (Malouf 1963: 154ff). The families who trace their ancestry back to the Xoshga band are said by Hidatsa speakers of having their own distinct variety of Hidatsa, having lived apart from the main host of the Hidatsa population for over a generation. The name Xoshga comes from the Lakota and Dakota word *hóški* 'badlands' and the Hidatsa word *adí* 'village' (Park 2012: 6). While there were Mandan individuals who lived with the Xoshga, no Mandan speakers reported that there was anything unique about the Mandan language these people spoke. This lack of a difference in the Mandan spoken by those living with the Xoshga likely stems from the fact they represented a linguistic and cultural minority in the camp and were thus more likely to use the Hidatsa language. There was a Bull Head among the Xoshga, which is also the name of Mr. Ben Benson, Mr. Edwin Benson's grandfather, but it is not clear if these are two different individuals.

5.6 Postpositions

(Hollow 1973a: 29)

Speakers are able to produce novel postpositional phrases that bear definite marking, but such examples are very rare in the corpus.

5.6.1.2 Instrumental: =*hqq*

The second most common bound postposition is the instrumental =*hqq*. This postposition often appears unnasalized as [haa]. This postposition is a cognate the Proto-Siouan adverbializer *haa. The non-nasal version is more common in the corpus, but it is not clear if this postposition is simply lightly de-nasalized due to the fact it is word final and often follows a posttonic downstep and reduction in overall intensity. This can lead to word-final vowels having dubious nasal qualities when spoken at a natural pace. If this instrumental postposition is truly a cognate with Proto-Siouan *haa, then its nasality is not completely explained. One possibility is that there has been interference between the Proto-Siouan adverbializer *haa and the distal particle *h̥, of which we can see reflexes of in Mandan *háhik* ‘time, occasion’ and *téehq* ‘to be far away’.

I follow Kennard (1936: 25) in calling this postposition an instrumental, given the fact that it plays that role with noun phrases. Examples of fragments using this postposition appear below.

(60) Examples of instrumental use of =*hqq* from Kennard (1936: 25)

- a. *xe'hqkhqq*
xe'#hák=háq
drip#STND.POS=INS
'with baskets'
- b. *ómanteeshqq*
o-wr̥á#tee=s=háq
PV.LOC-wood#be.dead=DEF=INS
'with the axe'
- c. *máahqq*
wáqh=háq
arrow=INS
'with arrows'
- d. *maná óksehqq*
wr̥á o-kse=háq
wood PV.IRR-be.hard=INS
'with hard wood'

5 Nominal morphology

- e. *weréhuyptaaħhaq*
 wreh#ħup=taa=ħaq
 door#be.different=LOC=INS
 'by means of the smoke hole'

Within the corpus of narratives itself, there are only a few examples of the instrumental being used in this original sense. One possible reason for this lack of overt instrumental marking in Mandan likely stems from the fact that many verbs bear an instrumental preverb, which already indicates an applicative argument that bears the semantic role of instrument. Verbs that are not lexically marked with an instrumental preverb *i-* will need to have an overt instrumental postposition on the semantic instrument of that clause. We can see examples of this behavior below.

- (61) Examples of $=hqq$ within clauses

- a. *rúte óna'te* *karáxa* *úroomako'sh*,
 rut=E o-rä'=tE krax=E=Ø u=oowäk=o'sh
 rib=SV PV.LOC-be.in.middle=SV be.low=SV=CONT shoot=NARR=IND.M
máahqä
wäqh=häq
 arrow=INS
 'he shot him low between the ribs, with arrows' (Hollow 1973b: 41)

b. *ómanathqä* *ké'nista!*
 o-wrät=häq ke'=rít=ta
 PV.LOC-axe=INS dig=2PL=IMP.M
 'dig it up with an axe!' (Hollow 1973b: 151)

c. *wará'taa, wéxhqä*
 wra'=taa wex=häq
 fire=LOC coal=INS
ikara'ptehereroomako'sh
 i-k-ra'-pte#hrE=oowäk=o'sh
 PV.INS-INCP-INS.FIRE-be.burning#CAUS=NARR=IND.M
 'at the campfire, he lit it up with a lump of coal' (Hollow 1973b: 185)

d. *máareksuhkereseena* *páaxuhqä* *kashé*,
 wäqareksuk=krE=s=ee=ra paaxu=häq ka-shE
 bird=3PL=DEM.DIST=TOP nose=INS PV.FRCE-grasp

5.6 Postpositions

In the data above, we can see that the absence of the instrumental preverb *i*-necessitates the presence of using the postposition =*hqq* to mark what noun is playing the role of the instrument. It is not ungrammatical to mark the instrument with the instrumental postposition with a verb bearing the instrumental preverb, as we see in (61c). However, such constructions are rare in the corpus. It is more common to see constructions like the one in (61g), where the presence of the instrumental preverb *i*-marks marks an argument as the instrument. The ordering of noun phrases within such constructions can vary, depending on what kind of elements the speaker wishes to topicalize and shift leftward in the clause, so context rather than canonical word order is often a bigger determiner in identifying which noun is the instrument in verbs with multiple overt nominal arguments of a verb marked with the instrumental preverb.

5 Nominal morphology

All Mandan speakers in the corpus are also fluent Hidatsa speakers, and Hidatsa has a postpositional element *-haa* that marks some kind of path. Mandan can treat the instrumental =*hqq* in an identical manner. It is unclear if this use is due to influence from Hidatsa or if there was some kind of polysemy in a language that is ancestral to Mandan and the two Missouri Valley Siouan languages, Hidatsa and Crow. When the instrumental is added to nouns that are destinations, it is often glossed as ‘around’ or ‘through.’ We can see examples of these non-instrumental readings below.

(62) Examples of non-instrumental =*hqq*

- a. *hú áaki'hkaraní* *tírokhaqq*
 hú aa-ki'h=krE=rjí ti=rök=häq
 all PV.TR-arrive.there.VERB=3PL=SS house=INES=INS
rupiriha...
 ru-prih=E=Ø
 INS.HAND-be.spread.out=SV=CONT
 ‘they brought a lot home and were spreading it out around inside the house’ (Hollow 1973a: 184)
- b. *inák, máatah íwookahqá*,
 irák wáqtah i-wV-o-kah=häq
 again river PV.DIR-UNSP-PV.LOC-be.on.edge=INS
Kinúma'kshi *kasími* *réehoomako'sh*
 ki-ruwá'k#shi ka-si=awjí rEEh=oowák=o'sh
 MID-man#be.good INCP-travel=CONT go.there=NARR=IND.M
 ‘again, along the river bank, Royal Chief was going along traveling’
 (Hollow 1973a: 14)
- c. *tíhushhqq* *saráthara* *réehe,* *kánik*
 ti#hush=häq srat#hrE=Ø rEEh=E ka=rík
 house#perimeter=INS be.thick#CAUS=CONT go.there=SV PROV=ITER
 ó'aaki *kxíghinik*
 o-aaki *kxuh=rík*
 PV.LOC-be.one.top lie.down=ITER
 ‘they put it in thick around the edge of the house and laid down on it’
 (Hollow 1973a: 184)
- d. *réshkataahqq* *tí* *ówaxastaa* *ítit*
 reshka=taa=häq ti o-waxat=taa i-ti=t
 like.this=LOC=INS house PV.LOC-form.a.point=LOC PV.DIR-house=LOC

5.6 Postpositions

róo *íshq̣aq̣taahq̣aq̣*
 roo i-shq̣aq̣=taa=hq̣aq̣
 DEM.MID PV.DIR-other.side=LOC=INS

‘along like that in the corner, towards the house here, along the other side of it’ (Trechter 2012a: 71)

e. *óhophq̣aq̣* wáanuma’kaaki húni síta
 o-hop=hq̣aq̣ waa-ruwá’k-aaki hú=rí sit=E=Ø
 PV.LOC-hole=INS NOM-person-COLL many=ss be.noisy=sv=CONT

máakaho’sh
wq̣aq̣kah=o’sh
 lie.AUX.HAB=IND.M

‘some people will come through a hole and they will be noisy’ (Hollow 1973a: 200)

f. *ó’harani*, *maná ósisiphq̣aq̣*
 o’#hrE=rí wrá o-si~sip=hq̣aq̣
 be#CAUS=ss tree PV.LOC-DIST~be.rough=INS
áareehkereroomako’sh
aa-rEEh=krE=oowák=o’sh
 PV.TR-go.there=3PL=NARR=IND.M

‘from there, she took him through the thick brush’ (Hollow 1973b: 49)

Mandan and both Missouri Valley Siouan languages have a long vowel for this reflex of the Proto-Siouan adverbializer *haa, but nasality is only apparent in Mandan due to Missouri Valley’s complete loss of phonemic nasality on vowels. While Rankin et al. (2015) reconstructs this formative as having an oral vowel, under the notes for the demonstrative *ha, the aforementioned authors remark that both vowel qualities are observed in reflexes of the so-called adverbializer in Proto-Siouan. The fact that =hqq in Mandan is often heard without nasality suggests that perhaps both versions of this formative were possible in Proto-Siouan as well, and that certain languages tended towards the oral version, while other languages adapted the nasal version.

Both the oral and nasal versions of =hqq are found on the same stems, suggesting some degree of interchangeability between them. Due to the lack of L1 speakers, it is not currently possible to confirm that both [ha:] and [hã:] are acceptable in the same way that [iðəɪ] and [aɪðəɪ] are both acceptable pronunciations for the English word *either*. The simultaneous enclitic =hqq appears to be diachronically connected to this Proto-Siouan adverbial marker *haa~*hãq̣, especially seeing as how Mandan has semantically broadened its use to mark

5 Nominal morphology

instruments. The simultaneous aspectual is an ablaut-triggering enclitic, as described in §3.5.3. Given that almost all ablaut-triggering enclitics contain a nasal vowel, I assume that the nasal version of the instrumental postposition =*hqq* to be the original form and have transcribed all occurrences of this formative in the corpus as such. The non-nasal version may have arisen due to mass bilingualism between Mandan and Hidatsa speakers, and the cultural context of Hidatsa being the so-called default indigenous language used on Fort Berthold. As such, realizations of =*hqq* as =*haa* may be due to long-term contact with Hidatsa.

5.6.1.3 Inessives: =*ku'sh* and =*rok*

There are two postpositions that are typically translated as having inessive semantics: =*ku'sh* and =*rok*. These inessive postpositions can sometimes be used interchangeably, but their meanings are not equivalent. Of the two, =*ku'sh* is the more common, and it has the added ability to exist as the stem when additional postpositional morphology is added: e.g., =*taa* or =*hqq*. The difference between these two inessives is that =*ku'sh* has a more generalized meaning, while =*rok* appears to convey the meaning that something is more centrally located within some boundary.

5.6.1.3.1 Inessive: =*ku'sh* ‘inside’

The postposition =*ku'sh* is typically translated as ‘inside,’ and often appears on physical structures like one’s home or some other building. This postposition is also found when discussing entrails or objects that are enclosed within the body of a human or animal. This postposition seems to be related to *kú* ‘be far away, beyond,’ with the /ʃ/ being a cognate with the the final segment of the male-directed indicative enclitic =*o'sh*. The semantics do not seem to line up between being far away from something and being inside something, so the connection between these two lexical items is opaque, as there are no other obvious cognates in Proto-Siouan that have been constructed to date Rankin et al. (2015).⁹ We can

⁹Another possibility is that the contamination went in the direction of ‘inside’ to ‘beyond,’ as both forms in Mandan involve a coda /ʔ/, which should indicate a glottalized onset in Proto-Siouan: i.e., PSi *k?u-sV for ‘inside.’ The reconstruction for ‘beyond,’ however, has no glottalized onset in Proto-Siouan, *ku, but there is a glottal stop coda in Mandan *kú*. This discrepancy between the presence of an unaccounted for glottal stop in the Mandan ‘beyond’ could indicate that there really is no directly shared reconstruction from Proto-Siouan between these two lexical items, but that their similarity may be the result of conflation of *ku ‘beyond’ with some heretofore undocumented *k?u that possibly had semantics similar to ‘within.’ Further comparative work with other Siouan languages is needed to determine how this hypothesis bears fruit.

5.6 Postpositions

see examples of its use in the data below.

- (63) Examples of =ku'sh

- a. *wí'hkú'she* *xóoreshka'sh*
 w'-iih=ku'sh=E xoo=eshka=o'sh
 1POSS-mouth=be.inside=sv ice=SMLT=IND.M
 'inside of my mouth is just like ice' (Hollow 1973a: 119)

b. *ptaníshkere* *má'a'qhku'shtaa* *réehwahere'sh*
 p-ta-rijshkrE wqá'ak=ku'sh=taa rEEh#wa-hrE=o'sh
 1POSS-AL-medicine earth=be.inside=LOC go.there#1A-CAUS-IND.M
 'I put my medicine under [inside] the ground' (Hollow 1973a: 48)

c. *húps* *tíku'sht* *áaropxeka'ehe*
 hup=s ti=ku'sh=t aa-ropxE=ka'ehe
 moccasin=DEF house=be.inside=LOC PV.TR-enter=QUOT
 'she took the shoes inside the house, it is said' (Hollow 1973a: 169)

d. *miní iku'shtaa* *ropxáni réeho'sh*
 wrí i-ku'sh=taa ropxE=rí rEEh=o'sh
 water PV.DIR-be.inside=LOC enter=ss go.there=IND.M
 'he went and entered under [inside] the water' (Hollow 1973b: 10)

e. *q'teroo,* *kú'shtaa,* *rópxani máakana!*
 q't=roo ku'sh=taa ropxE=rí wqákE=ráq
 DEM.ANAP=DEM.MID be.inside=LOC enter=ss lie.AUX=IMP.F
 'there, inside, go in and stay there!' (Hollow 1973b: 108)

f. *ímashute,* *kúshtaaahqá* *íwa'tarakini..*
 i-wqshut=E ku'sh=taa=hqá i-wa'-trEk=rí
 PV.INS-clothe=sv be.inside=LOC=INS PV.INS-INS.PRCE-sew=ss
 'it being inside her dress, she sewed it on...' (Hollow 1973a: 106)

This inessive most often appears as a bound element after the nominal over which it has semantic scope, as we see in (63a) through (63c). The bound version of *=ku'sh* is often accompanied by the locative *=taa* or *=t*. A seemingly unbound version of *=ku'sh* is possible when there is some other morphology present that is also bound, using /*ku'sh*/ as a stem, as we see in (63d) through (63f). The difference between the bound and unbound versions is that the bound *=ku'sh* has an overt nominal that it seeks out as a host, while the unbound version has some null nominal it is referencing. Thus, while *=ku'sh* appears to be unbound in instances like the ones we see in (63d), the prosody provides a reading that is more

5 Nominal morphology

like, ‘the water, he went and entered it.’ Given that Mandan is such a prolific *pro-drop* language that can omit any overt nominal, regardless of what role it is playing in clause. Thus, the lack of an overt nominal in some instances is what is giving the appearance of an unbound version of *=ku’sh*, when the reality is that all instances of *=ku’sh* are bound, but some are bound to phonologically null elements that have been dropped from the discourse but are still being tracked.

5.6.1.3.2 Inessive: =rok 'within'

This postposition is a reflex of Proto-Siouan **yooka*~**rooka*, which has a meaning of ‘be inside’ or ‘be in the middle of’ in modern Siouan languages. The Mandan reflex appears to be phonologically reduced, having undergone apocope and vowel truncation in its current state as an enclitic. The postposition *=rok* is typically translated as ‘within,’ ‘in,’ or ‘among,’ and seems to be more restricted in use than the other inessive, *=ku’sh*. The inessive *=rok* is typically relegated to situations where something is within a boundary where it is near its middle. We can see examples of *=rok* below.

(64) Examples of *=rok*

- a. *minís i'staroke* *síireena*
wrís i'-ista=rók=E *sii=ee=ráq*
 horse PV.RFLX-face=be.within=sv be.yellow=DEM.DIST=TOP
ó'aakupak
 o-aakup=ak
 PV.IRR-cover.the.head=ds
 'it was a horse that was yellow in the middle of the face that was broke to harness' (Hollow 1973a: 59)

b. *kú't* *manárok* *ósisiiptaa*
ku'=t *wrq=rók* *o-si~siip=taa*
 be.further=LOC tree=be.within PV.LOC-AUG~be.rough=LOC
áaraahini...
 aa-rEh=rj
 PV.TR-go.there=ss
 'he took her further into the brush where it is thick and...' (Hollow 1973a: 176)

c. *tírokshka* *shíhara* *íseka*
ti=rók=shka *shi#hrE=Ø* *i-sek=E=Ø*
 dwelling=be.within=DSJ be.good#CAUS=CONT PV.INS-make=sv=CONT
 'they were making it nice even inside the house' (Hollow 1973a: 202)

5.6 Postpositions

- d. *hú áaki' hkarani* *tírokhaqq*
 hú aa-ki'h=krE=rj ti=rok=häq
 many PV.TR-arrive.back.here=3PL=ss dwelling=be.within=INS
rupiríha...
 ru-prih=E=∅
 INS.HAND-spread=sv=CONT
 'they brought a lot of it home and were spreading it out all over inside the house' (Hollow 1973a: 184)
- e. *kí'kini, maná ósake* *tíroktaa,*
 kí'k=rj wrä o-sak=E ti=rok=taa
 finish=ss wood PV.IRR-be.dry=sv dwelling=be.within=LOC
óti'j'here *xamáhshka'nik*
 o-ti#j'-hrE xwäh=shka'rjik
 PV.LOC-dwell#PV.RFLX-CAUS be.small=DSJ
 'they finished it and the wood that was dry was in the house, but their house was small' (Hollow 1973a: 197)

Much like *=ku'sh*, *=rok* can appear with additional postpositions. We can see both *=taa* and *=hqq* present in (64d) and (64e). The presence of the locative *=taa* seems to be used to mark specific locations headed by *=rok*, while the instrumental *=hqq* indicates all throughout a location.

This postposition is relatively uncommon in the corpus, but it does appear to be quite productive in creating nominal elements that are then treated as nouns within the syntax. We can see some examples of *=rok* constructions that have become lexicalized below.

(65) Examples of nouns created with *=rok*

- a. *manárok*
 wrä=rok
 tree=be.within
 'forest' [lit. 'among the trees']
- b. *manáherok*
 wräh=rok
 few.trees=be.within
 'meadow, clearing' [lit. 'within where there are few trees']

5 Nominal morphology

- c. *róxerok*
rox=rok
pelvis=be.within
'vulva' [lit. 'within the hips']
- d. *ótirok*
o-ti=rok
PV.IRR-dwell=be.within
'ancestor' [lit. 'those who live on within']
- e. *úkerok*
úk=rok
hand=be.within
'palm of hand' [lit. 'inside of the hand']
- f. *íroke* ~ *wíiroke*
i-rok=E wV-i-rok=E
PV.INS-be.within=sv NOM-PV.INS-be.within=sv
'bag, barrel, box, case container, pouch' [lit. 'something that has it inside']
- g. *wáatirok*
waa-ti=rok
NOM-dwelling=be.within
'furniture' [lit. 'something within the home']
- h. *tírok*
ti=rok
dwelling=be.within
'family, household' [lit. 'someone within our home']

While these nominals bear *=rok*, they are treated as nouns synchronically, as they can take definite marking with *=s* on the right edge of the word, alienable possession marking with *ta-*, plural marking with *=kere*, and even other postpositions: e.g., *írokekeres* 'the bags' or *íroketaa* 'in the bag'.

5.6.2 Free postpositions

The majority of postpositions in Mandan exist as free formatives that can appear in isolation without having to be bound to the noun over which it has semantic scope. Free postpositions are polysyllabic and bear a primary stress in contrast

5.6 Postpositions

with bound postpositions, which manifest as enclitics that can never bear primary stress, even if doing so would produce a well-formed iambic foot as described in §3.6.4.

Mandan postpositions fall into two classes: some are morphologically simple whereas some take a particular preverb or are compound words. Morphologically simple postpositions are uniformly treated as stative verbs in the even that first or second person entities are involved, while the non-simple postpositions are divided by whether they take stative pronominals or active pronominals. Non-simple postpositions that contain a reflexive, instrumental, or directional preverb take stative marking, while all other non-simple postpositions take active marking. Some simple postpositions can co-occur with the locative and the instrumental optionally, which is indicated by including these enclitics after the stem, while some simple postpositions will always co-occur with the locative =*taa*~=*t*. We can see lists of both classes below.

(66) List of postpositions with simple morphology

áaki, = <i>taa</i> , = <i>hqq</i>	'above, over'
q'ska, = <i>taa</i> , = <i>hqq</i>	'near'
húytaa	'beside, next to'
kahúh	'all around'
kótka	'across [horizontal]'
kútaa	'across from, opposite from'
máape	'beneath, under'
máatih, = <i>taa</i> , = <i>hqq</i>	'outside'
náashi, = <i>taa</i> , = <i>hqq</i>	'behind, in back of'
pahúytaa	'beside, next to'
péexti	'in front of'
pkahúytaa	'side by side with'
rohúytaa	'beside, next to, by'
ruxeré, = <i>taa</i> , = <i>hqq</i>	'very far away from, distant from'
sháqh, = <i>taa</i>	'across, other side of'
téehq	'far from'
úyqa	'with'
úyputaa	'nearby, around, in the vicinity of'
ú'shka	'along with'
ú'taa	'to, toward, near'
wáakutaa	'over, over the top of'

(67) List of postpositions with non-simple morphology

5 Nominal morphology

<i>éeheni</i>	‘along with, in addition to’
<i>i'q'taa</i>	‘to, toward’
<i>i'sqape</i>	‘around’
<i>óktiki</i>	‘to, toward’
<i>ótaa</i>	‘facing towards, pointed at’
<i>ó'hara</i>	‘through’
<i>ó'harani</i>	‘from’

All simple postpositions may also take the directional preverb *i-*, even ones that are already expressing a directional relationship: e.g., *ú'taa* versus *i'q'taa* ‘towards.’ The simple postpositions that feature the locative =*taa* have not been attested in the corpus without it, so it is not clear whether a bare postposition without the locative would be possible or if it would have slightly altered semantics.

Non-simple postpositions are typically composed of either a preverb plus another element, or they are a combination of the copula *ó* ‘be’ plus causative morphology. Some of these non-simple postpositions have obvious etymologies, like *ótaa* ‘facing towards, pointed at,’ which is a combination of the locative preverb *o-* and the locative postposition =*taa*. Others, like *ó'harani* ‘from’ have less obvious connections between the constituent formatives and their combined semantics: i.e., *ó'harani* is composed of the copula *ó* ‘be,’ plus the causative *here* and the same-subject switch-reference marker =*ni*. Inflectional morphology on these non-simple postpositions will always appear after the preverb or the compounded copula, as we can see in the data below.

(68) Examples of person marking on non-simple postpositions

- a. *ímaataht* *órataaro'sh*
i-waqatah=t *o-ra-taa=o'sh*
PV.DIR-river=LOC PV.LOC-2A-be.facing=IND.M
‘you are facing the river’ (Hollow 1973a: 35)
- b. *tewétaa* *ó'rahani* *rahúuro'sha?*
t-we=taa *o'ra-hrE=rí* *ra-huu=o'sha*
WH-INDF=LOC be#2A-CAUS=SS 2A-come.here=INT.M
‘where did you come from?’ (Hollow 1973a: 299)

It is possible that other postpositions existed, but no other candidates could be identified from the corpus. Furthermore, speakers seem to forego overt postpositions if the relationship between an entity and a proposition is understood

5.7 *Deixis and definiteness*

from the context, as we can see from the many instances of nouns that are destinations that we would expect to bear some kind of directional postposition. One possible explanation for this discrepancy is that Mandan verbs may convey information pertaining to spatial or directional relationships to an object that might have otherwise been relegated to adpositions in other languages. If there are other recordings done by the Nueta Language Initiative or produced by families of other Mandan speakers in the late twentieth or early twenty-first centuries, such recordings may yield additional postpositions. However, those listed in (66) and (67) represent the sum of postpositions attested in Mandan to date.

5.7 Deixis and definiteness

Mandan rigorously adds ancillary information to many propositions, especially nominal constructions, to contextualize or reinforce the spatial or temporal deixis of an entity. In addition to grounding the location of an entity in time and space, Mandan also can mark the position of said entity within the context of whether said entity is standing, sitting, or lying. Mandan can overtly mark definiteness on nouns, which is discussed in §5.7.1 below. In §5.7.2, I describe the behavior of demonstratives in Mandan with respect to their distance from the speaker and their positional status. This section concludes with a description of topic marking in §5.7.3.

5.7.1 Articles

Mandan has only one article, the definite article *=s*. This article is homophonous and largely semantically consistent with the verbal definite evidential marker *=s* described in §4.3.2.10, which is found on verbs to express certainty on behalf of the speaker about the truth value of the proposition. It is not clear if the dual usage of *=s* evolved along a single pathway and then spread from nominal to verbal morphology or vice versa. Both Crow and Hidatsa have remnants of a similar duality between marking definiteness on nouns and expressing certainty on verbs, as the definite article in Hidatsa *-sh* is also used with forceful statements (Boyle 2007: 68; Park 2012: 231), while the Crow definite article *-sh* manifests as *-sht* for strong declarations (Graczyk 2007: 394).¹⁰

¹⁰Hidatsa also has strong declarative markers that are cognate with Crow: i.e., Crow *-sht* is equivalent to Hidatsa *-shd*. There is also a third “definitive” speech-act marker in Hidatsa, *-shdaa'*, which Park (2012: 231) notes is the most common manifestation of how a forceful declarative statement is marked in careful speech, while *-shd* is more common than *-sh* otherwise. It is

5 Nominal morphology

Of all the nouns that exist in the corpus, a minority bear the definite article =s, though in the majority of cases where the translation includes a definite article, a definite article also occurs in the original Mandan. There are no morphological or syntactic distinctions between a generic reading on a noun versus an indefinite one in Mandan. Since most nouns are not overtly marked for definiteness, definiteness can be implied by context. However, when =s is present, such nouns are unambiguously definite. We can see examples of definite marking in the data below.

(69) Examples of the definite article =s

- a. *maná terés* óruskani
 wrq trE=s o-ru-skE=rj
 tree be.big.around=DEF PV.LOC-INS.HAND-jump=ss
i'aakit áareehka
 i-aaki=t aa-rEEh=ka
 PV.DIR-be.above=LOC PV.TR-go.there=HAB
 'he pulled the big tree [out of the ground] and would take it upward'
 (Hollow 1973a: 21)

b. *numá'kshis* mí'ti óo manáshhijra
 ruwq'kshi=s wj'#ti oo wrqsh#hj=j=E=Ø
 man#be.good=DEF stone#dwelling DEM.MID tobacoo#drink=sv=CONT
máakahkereroomako'sh
 wqakah=krE=oowqak=o'sh
 be.lying.AUX.HAB=3PL=NARR=IND.M
 'they were always there smoking with the village chief there' (Hollow
 1973b: 230)

c. *súks* i'q'taa kú'ta!
 suk=s i-q'=taa kq'=ta
 child=DEF PV.DIR-be.near.to=LOC give=IMP.M
 'give it to the child!' (Kennard 1936: 25)

d. *wáa'oshis* áqwe ikatarakak, hq,
 waa-o-shi=s aqwe i-ka-trak=ak hq
 NOM-PV.IRR-be.good=DEF all PV.INS-INCP-be.blocked=DS um

not clear if these other definitive markers in Crow and Hidatsa are related to reflexive of an *s*-grade version of the Proto-Siouan augmentative **xtE*. Thus, it is possible that the homophony between the definite marker in all three languages and the strong or definitive declarative markers in Crow and Hidatsa is coincidental.

ikihqqxikoomako'sh
i-ki-haqxik=oowąk=o'sh
PV.INS-MID-forget=NARR=IND.M

‘all the good things suddenly happen to him and, well, he just forgot all about him’ (Trechter 2012a: 251)

- e. *Núu'etaa tamí'tina* *nákoomako'sh*
rüyü'etaa ta-wi'#ti=rä *räk=oowäk=o'sh*
Mandan AL-stone#dwelling=TOP POS.SIT=NARR=IND.M.
'there once was a Mandan village' Hollow (1973a: 125)

We see $=s$ in (69a) through (69d) on the noun phrases where we expect them, according to the context of the translations. Likewise, when no definite marking occurs, we see no $=s$, like in (69e). In (69e), the narrator is describing some Mandan village that had existed in the past without making reference to a specific one: e.g., Like-A-Fishhook Village or Double Ditch Village. The example in (69e) likewise illustrates that there is no overt morphology for indefinite nouns in Mandan.

Kennard (1936: 26) reports that there is an indefinite article, *-e*. As previously discussed in §4.3.5.4, this formative does not represent indefinite marking on nouns, as it is the stem vowel */=E/*. This stem vowel occupies the same position as a complementizer in a clause and serves to indicate the end of an intonational phrase. For that reason, it often appears when speakers are asked, “how you do say X in Mandan?” The presence of such morphology indicates a complete utterance rather than a fragment. Hollow (1970: 39) likewise does not consider this element an indefinite article, simply stating that it is part of an optional rule for adding a word-final vowel that is at the discretion of the speaker.¹¹ What is clear is that no one but Kennard thought that there was an indefinite article in Mandan; all other published work on Mandan finds the contrary is true (Hollow 1970; Mixco 1997a; Kasak 2019; *inter alios*).

5.7.2 Demonstratives

Mandan possesses a rich system of encoding both definiteness and deictic information alongside nouns. While the definite article =s described above in §5.7.1 has the sole purpose of marking a nominal element as having the semantic property of being definite, there are two other kinds of formatives used in Mandan to express some kind of spatial context for a noun phrase. Some of these demonstratives or determiners are locative in origin, specifying the distance between

¹¹Refer back to §4.3.5.4 for a detailed explanation of when the stem vowel /ɛ/ must occur.

5 Nominal morphology

the speaker and the nominal in questions. These particular demonstratives are described in §5.7.2.1 below. There is also an anaphoric demonstrative that refers back to some aforementioned entity, which is described in §5.7.2.2. Other determiners in Mandan are demonstratives that are verbal in origin, detailing what physical position a nominal is in at a particular point of reference. These positionals are described in §5.7.2.3.

5.7.2.1 Deictic determiners

While English possesses a two-way distance distinction in its demonstrative system (i.e., *this* versus *that*), Mandan has a four-way distance distinction. These deictic determiners are realized as enclitics, appearing the rightmost element in a noun phrase, even closer to the right edge of the determiner phrase than the definite article =s. These deictic determiners can be seen below.

(70) List of deictic determiners

- a. =re: proximal determiner (nearest speaker)
- b. =roo: medial determiner (near to speaker and addressee)
- c. =oo: medial determiner (nearer to addressee than to speaker)
- d. =ee: distal determiner (far from both speaker and addressee)

Historically, all of these elements are derived from Proto-Siouan determiners or deictic particles. The proximal determiner =re is a reflex of PSi *re ‘this, here, now.’ The medial =oo likewise is a reflex of the Proto-Siouan general deictic particle *oo, which is also the origin of the locative or inessive preverb o- in Mandan, as described previously in §4.1.1.4.1.8. The other medial =roo appears to be a portmanteau of =re and =oo. The distal =ee is a reflex of PSi *?ee, a demonstrative or pronoun meaning ‘that’ or ‘the aforesaid.’

In the corpus, (70a) is typically rendered into English as ‘this’ or ‘here’ while both (70b) and (70c) are translated as ‘that’ or ‘there’ by Mandan speakers.

(71) Examples of deictic determiners

- a. *ú'sh ká'ni máaka't, rokáqkaxi'herena.*
 ú'sh ka'=r̥i wáqkE=a't rokáqka#xi'h=re=r̥a
 thus possess=ss lie.AUX=HYP old.woman#be.old=DEM.PROX=TOP
 ‘she had him that way and would keep on living, this old lady did’
 (Hollow 1973a: 88)

5.7 *Deixis and definiteness*

5 Nominal morphology

5.7.2.2 Anaphoric determiners

In addition to the deictic determiners, Mandan possesses an anaphoric determiner *q't*, which functions as a kind of pronominal that relies on some antecedent to receive some kind of interpretation. Hollow (1970: 61) refers to this determiner as meaning ‘that one (furthest from the speaker),’ but *q't* appears in non-distal contexts as well in narratives within the corpus. Mixco (1997a: 42) groups this determiner with the deitic determiners but simply glosses *q't* as ‘that.’ Hollow (1970: 61) glosses this item as ‘that one (furthest from the speaker),’ however Hollow gives examples of this item with non-distal morphology, as we see below. In (72), we see the anaphoric determiner *q't* combined with the medial deictic *roo*, which is a blend of the proximal *re* and true medial *oo*.

- (72) Non-distal *q'teroo*

q'teroo

q't=roo

DEM.ANAP=DEM.MID

‘that one’ (Hollow 1970: 61)

We can therefore surmise that the *q't* does not have any innate locative deictic semantics, but rather refers back to an argument previously brought up in the discourse: i.e., personal referential deixis. This determiner appears to have evolved from the Proto-Siouan determiner *?*a* combined with the indefinite pronominal **tq*. The vowel in **a* assimilated the nasality of the following syllable, after which, the final vowel syncopated and the glottal stop metathesized, resulting in Proto-Siouan *?*a+tq* > Mandan *q't*.¹²

The anaphoric determiner can appear as a true determiner: i.e., encliticized onto a nominal element. In these situations, the anaphoric determiner has the effect of reinforcing the entity to which the speaker is referencing, akin to the use of the English adjective ‘very’ before a noun: e.g., ‘the very person I was looking for.’ The *q't* can also appear as an independent word with its own primary stress. In both cases, *q't* may bear additional deictics, such as those outlined above in §5.7.2.1. We can see examples of both encliticized and free anaphoric determiners below. There is no restriction on the semantic role to which the anaphoric determiner can refer: i.e., the anaphoric determiner can refer to subjects, direct objects, locations, etc.

¹² Metathesis of *? with the following vowel in Proto-Siouan is a regular sound change in Mandan and Missouri Valley Siouan: e.g., **k?u* ~ **k?u* ‘give’ > Mandan *kú*, Hidatsa *gú*, and Crow *kuú* (< Proto-Missouri Valley **ku?*).

5.7 *Deixis and definiteness*

We can see in (73a) below that each anaphoric determiner refers back to the younger brother who is brought up in the previous sentence. In this case, each *q't* plays the role of the subject of the sentence. The entity in question is the subject in both sentences. This example likewise shows both a free and encliticized version of *q't*, both of which are coindexed with the same entity: the younger brother.

In (73b), we can see that the semantic roles of the conindexed entity differ. The cultural figure *Kinúma'kshi* tricked the porcupine out of sharing in a buffalo carcass, so the porcupine is complaining to other animals that *Kinúma'kshi* has wronged him. The first clause states that he, *Kinúma'kshi*, is not good, and the second clause references that *Kinúma'kshi* will end up eating all of the the buffalo carcass. In this particular example, the *q't* is referring back to the carcass, not to *Kinúma'kshi*.

(73) Examples of the anaphoric determiner

- a. *Mishúyka* *nimáaka* *máake'sh.*
wí-shúyka *ri-waqkE=Ø* *waqkE=o'sh*
 1POSS-man's.younger.brother 2s-be.lying.AUX=CONT be.lying.AUX=IND.M
Á't, *mí'rqa'teena,* *"Páaxu Xtáni"*
aq't *wí=aq't=ee=rq* *paaxu xtE=rí*
 DEM.ANAP rock=DEM.ANAP=DEM.DIST=TOP nose be.big=ss
éeniheero'sh.
ee-rí-hEE=o'sh
 PV-2S-say=IND.M
 'My younger brother was saying bad things about you. That one, that very rock, he called you "Big Nose".' (Hollow 1973a: 18)

b. *Wáashinashso'nik,* *ée,* *á't* *rústo'sh.*
waa-shi=rash=so'rík *ee* *aq't* *rut=t=o'sh*
 NEG-be.good=ATT=DUB DEM.DIST DEM.ANAP eat=POT=IND.M
 'Since [that one] is no good, him there, he will eat that one.' (Hollow 1973a: 43)

c. *Háki,* *nitúuminike* *áawereehki,*
ha=ki *ri-tuuwírjk=E* *aa-we-rEEh=ki*
 PROV=COND 2POSS-father's.sister=SV PV.TR-1A-go.there=COND
á'teena *ísekto'sh.*
aq't=ee=rq *i-sek=t=o'sh*
 DEM.ANAP=DEM.DIST=TOP PV.INS-do=POT=IND.M
 'So, if I take him to your aunt, that one should do it.' (Hollow 1973a: 57)

5 Nominal morphology

d. <i>Mí'nake</i>	<i>warúwihto'sh.</i>	<i>Waráahini</i>
wí'#rak=E	wa-ru-wih=t=o'sh	wa-rEEh=rí
stone#POS.STND=SV	1A-INS.HAND-display=POT=IND.M	1A-go.there=ss
<i>q'teetaa</i>	<i>warúwihini</i>	
<i>q't=ee=taa</i>	<i>wa-ru-wih=rí</i>	
DEM.ANAP=DEM.DIST=LOC	1A-INS.HAND-display=ss	
<i>wakúhki,</i>	<i>nukí'niinisto'sh.</i>	
<i>wa-kuh=ki</i>	<i>rú-ki'#rít=rít=t=o'sh</i>	
1A-come.back.here=COND	1A.PL-haul#shoot=2PL=IND.M	
'I will put up a monument. I will go and put it up over there and when I come back, we will race' (Hollow 1973a: 39)		

Anaphoric demonstratives are able to be treated as topicalized elements, as we see in (73c). In the initial clause, the narrator is describing a situation where her younger brother is to be brought to his aunt. The same aunt is the one being referenced by the anaphoric demonstrative in the second clause. In this scenario, the destination of the first clause and the subject of the second clause are coindexed. The *q't* is topicalized here, reinforcing the fact that it is indeed the aunt who will be the one to do the requested action and not anyone else.

In addition to referring to specific entities referenced or alluded to in the discourse, the anaphoric determiner can also be used to reference spatial or temporal deixis. We see this above in (73d), where *Kinúmakshi* challenges the buffalo to a race. First, *Kinúmakshi* states that he will erect a monument outside, and then once the monument is up over there, they will race. In this context, the monument is the direct object of the first sentence, and the *q't* is the location of the activity in the following clause. Not only does this anaphoric demonstrative bear the distal demonstrative =ee, but it also bears the locative postposition =taa.

The anaphoric demonstrative has no unique marking for plural referents. As we see in (74a), each instance of *q't* refers to juneberries. In this example, we see multiple references to how the Mandan people traditionally prize juneberries and use them in other staples. Plurality is not marked on the *q't*, as we see in (74a) and (74b), where the anaphoric demonstrative is coindexed with a plural referent. In (74b), we see an overt quantifier with the referent *rásé ínupshashka* 'both of his names,' which is coindexed with the anaphoric determiner *q't* without any other morphology or periphrastic information to indicate plurality even when the accompanying stative verb *túkere'sh* 'there are some' bears the third person plural marker =kere.¹³ In this example, the =kere is the only overt morphological

¹³In this case, the verb *tú* is used to express possession of an inalienable noun, *rásé* 'name(s)'.

5.7 *Deixis and definiteness*

indicator of plurality; *q’ t* remains morphologically identical for both singular and plural referents.

(74) Plurality and the anaphoric demonstrative

- a. *Hiré, rá’skamak, wáawahe’sh: manápusheke.*
 hire ra’ska#wák waa-wa-hE=o’sh wrą#pushek=E
 now summer#POS.LIE PART-1A-see=IND.M wood#juneberries=sv
Nuwáahere koshí, á’t ó’ro’sh. Wiipe
 rü-waa-hrE ko-shi á’t o’=o’sh wiipe
 1PL.POSS-NOM-CAUS REL-be.good DEM.ANAP be=IND.M cornball
riisehki, riirwerekini
 rV-i-sek=ki rV-i-ru-wrek=rj
 1A.PL-PV.INS-make=COND 1A.PL-PV.INS-INS.HAND-mix=ss
órukuhe róokiharani mapéshot
 o-rukuhe rV-o-ki#hrE=rj wape#shot
 PV.IRR-be.by.self 1A.PL-PV.LOC-be.cooked#CAUS=ss sunflower.plant#white
ríiruhjhinik nurútka’sh. Wóorut
 rV-i-ru-hjh=rjk rü-rut=ka=o’sh wV-o-rut
 1A.PL-PV.INS-mix.up=ITR 1A.PL-eat=HAB=IND.M NOM-PV.IRR-eat
shixté’sh, á’t, manápushekq’t
 shi-xtE=o’sh á’t wrą#pushek=q’t
 be.good-AUG=IND.M DEM.ANAP wood#juneberry=DEM.ANAP
 ‘Now, this summer, I saw some of them: juneberries. Our best food, those are it. When we make cornballs, we mix [juneberries] and cook them by themselves and we always eat them by mixing them up with flour. They are real good food, those are, those juneberries.’ (Hollow 1973a: 52)
- b. *Mishúykak, koník*
 wj-shüyüka=ak ko-rjik
 1POSS-man’s.younger.brother=DS 3POSS.PERS-son
koxamáhere, ráse ínupshashka,
 ko-xwäh=re ras=E i-rüp-sha-shka
 REL-be.small=DEM.PROX name=sv PV.NUM-two-COLL-INTS.COLL
á’t, ráse túkere’sh.
 á’t ras=E tu=krE=o’sh
 DEM.ANAP name=sv be.some=3PL=IND.M
 ‘My brother, that youngest son of his, both of his names, those ones, he has the names.’ (Hollow 1973a: 61)

5 Nominal morphology

c. <i>Wóo'ipke</i>	<i>ókapxiire</i>
wV-o-i-pke	o-ka-pxii=E
NOM-PV.IRR-PV.INS-smell	PV.IRR-INS.FRCE-be.wide=sv
<i>koxtémihka</i>	<i>rarúshani</i>
ko-xtE#wik=ka	ra-ru-shE=rj
REL-be.big#be.none=HAB	2A-INS.HAND-hold=ss
NOM-PV.IRR-PV.INS-smell	
<i>q'te</i>	<i>máakahe, xamáhkerehara</i>
q't=E	wqákahE
DEM.ANAP=SV	xwáh=krE#hrE=∅
those	be.small=3PL#CAUS=CONT
<i>rupáaxini</i>	<i>wóo'ipke</i>
ru-paax=rj	wV-o-i-pke
INS.HAND-be.broken=ss	koxtés
NOM-PV.IRR-PV.INS-smell	ko-xtE=s
REL-be.big=DEF	
<i>óreehraherekto'sh.</i>	
o-rEEh#ra-hrE=kt=o'sh	
PV.LOC-go.there#2A-CAUS=POT=IND.M	
'You should take the biggest piece of sliced dried meat and put it, the biggest dried meat, with those ones, the smaller broken pieces.'	(Hollow 1973b: 223)

One way that plurality can be indicated with the anaphoric demonstrative is through periphrastic information. In (74c) above, we see that the anaphoric demonstrative *q'te* is referring back to pieces of dried meat from the previous clause. In this case, the anaphoric determiner bears a stem vowel, indicating that there is a prosodic break after it. Afterwards, the plural determiner *máakahe* 'those' appears, reinforcing the fact that the speaker is referring to those pieces of sliced meat. This periphrastic plural marking is completely optional, as the overwhelming majority of instances of *q't* referring to plural referents have no other indicators to cue the listener that the anaphoric demonstrative is coindexed with a singular or plural referent. This information is inferred from context.

5.7.2.3 Positionals

A very productive class of demonstratives in Mandan is the positionals. Positionals are formatives that have origins in the Proto-Siouan verbs 'sit,' 'stand,' and 'lie.' Rankin (1977, 2004) identifies positionals as taking various paths of grammaticalization in different Siouan languages, but within Mandan, a common function of positionals is as a determiner that conveys information about the position a particular entity is in, as well as bestowing definite semantics upon the nominal in question. These positional determiners can be seen below.

5.7 *Deixis and definiteness*

(75) List of positional determiners

- a. *hqk*: ‘standing’ positional determiner
- b. *mak*: ‘lying’ positional determiner
- c. *nak*: ‘sitting’ positional determiner
- d. *máakah*: plural determiner

We can see examples of the positional determiners in (76) in the data below. The relevant determiner appears in bold. Note that the singular positional determiners are orthographically represented as being part of the nominal element over which they have semantic scope. This orthographic treatment of *hqk*, *mak*, and *nak* follows Hollow (1970, 1973a,b) and Hollow et al. (1976), and likely stems from the fact that these determiners do not have a primary stress of their own. Their phonological behavior is more like compounding than encliticization due to the fact that any consonant clusters created by the addition of these determiners do not result in the production of excrescent Dorsey’s Law vowels. This fact is clear in the data below.

(76) Examples of positional determiners with lexical words

- a. *hápe qqwe wáa’onatkoxiwaká’ni*
hap(E) aqwe waa-o-rątka#o-xik#**hqk** wa-ka’=rị
day all NOM-PV.IRR-heart#PV.IRR-be.bad#**POS.STND** 1A-possess=ss
waháqkaha’sh
wa-hąqkE=ka=o’sh
1A-be.standing.AUX=HAB=IND.M
‘I always have this bad feeling [for them] every day.’ (Hollow 1973a: 56)
- b. *tashká’eshkák súkmiihnak húuro’na?*
tashka-eshka=ak suk#wiih#**rąk** huu=o’rą
how-SMLT=DS child#woman#**POS.SIT** come.here=INT.F
‘Why has this young woman come?’ (Hollow 1973b: 106)
- c. *máa’qkmak rá’kxipwahere’sh*
waa’ąk#**wąk** ra’-kxip#wa-hrE=o’sh
land#**POS.LIE** INS.HEAT-shrivel#1A-CAUS=IND.M
‘I made this land shrivel up.’ (Hollow 1973a: 217)
- d. *numá’kaaki ítqhqq máakah íhehkereki*
ruwą’k-aaki i-tąq=hąq wąqkah i-hek=krE=ki
person-COLL PV.INS-be.different=INS these PV.INS-know=3PL=COND

5 Nominal morphology

ríkasharatkere'sh
 rV-i-ka-shrat=krE=o'sh
 1A.PL-PV.INS-INS.FRCE-be.thick=3PL=IND.M
 'if these different people knew, they would all gather around' (Hollow
 1973a: 177)

We see that *máakah* is not treated as part of the prosodic word in the same way that *hqk*, *mak*, and *nak* are. This formative is typically given a primary stress, unlike its singular counterparts. Likewise, we see that any positional semantics are neutralized in plural contexts, and the habitual auxiliary *máakah* 'be lying' is used exclusively. It is ungrammatical to use the other habitual auxiliaries *hqqkah* 'be standing' or *náakah* 'be sitting' to indicate plurality (Trechter 2013).

Within the corpus, the proximal deictic determiner *re* and the anaphoric determiner *q't* appear frequently followed by a positional determiner. These constructions have a quasi-pronominal functionality, serving to point out something immediately in view of the interlocutors with the *re* constructions or something that was previously mentioned or no longer in view with the *q't* constructions. All the examples in (77) below come from Kennard (1936: 28).

(77) Examples of positional determiners with other determiners

- a. *réhqk*
 re=hqk
 DEM.PROX=POS.STND
 'this one, standing'
- b. *rémak*
 re=wqk
 DEM.PROX=POS.LIE
 'this one, lying'
- c. *rénak*
 re=rqk
 DEM.PROX=POS.SIT
 'this one, sitting'
- d. *q'tahqk*
 q't=hqk
 DEM.ANAP=POS.STND
 'that one, standing'

5.7 *Deixis and definiteness*

- e. *q'tamak*
 $q't=wak$
 DEM.ANAP=POS.LIE
 'that one, lying'
- f. *q'tanak*
 $q't=rak$
 DEM.ANAP=POS.SIT
 'that one, sitting'

The plural positional determiner *máakah* also occurs with *re* and *q't*. These combined determiners are used pronominally, where such constructions are used instead of an aforementioned nominal. We can see examples of such constructions below.

(78) Examples of *máakah* with other determiners

- a. *Rémaakahe*, *ishák mashíkerekto'sh*
 $re=wakah=E$ $ishak washi=krE=kt=o'sh$
 DEM.PROX=these=SV PRO white.person=3L=POT=IND.M
 'These ones, they will be white people.' (Hollow 1973a: 13)
- b. *Woo'ipke*, *q'tamaakahe*,
 $wV-o-i-pke$ $q't=wakah=E$
 UNSP-PV.IRR-PV.INS-smell DEM.ANAP=these=SV
xamáhkerehara *rupáxini*
 $xwah=krE=hrE=\emptyset$ $ru-pax=rj$
 be.small=3PL=CAUS=CONT INS.HAND-be.broken=ss
woo'ipke *koxtés*
 $wV-o-i-pke$ $ko-xtE=s$
 UNSP-PV.IRR-PV.INS-smell REL-be.big=DEF
óreehraherekto'sh
 $o-rEEh#ra-hrE=kt=o'sh$
 PV.LOC-go.there#2A-CAUS=POT=IND.M
 'You should put the dry meat with them, those ones, the smaller broken pieces and the biggest [pieces of] dry meat.' (Hollow 1973b: 223)

Most instances of *re* and *q't* throughout the corpus appear without an accompanying positional determiner. The overwhelming majority of instances of positional determiners in the corpus is found at the right edge of a determiner phrase.

5 Nominal morphology

These positional determiners always convey definite semantics upon the nominal over which they take semantic scope, and nominals bearing a positional determiner cannot also bear the definite article =s.

These double determiner constructions are never encliticized onto an overt nominal, so their distribute is squarely pronominal in nature. There are no instances of positional determiners with other deictic determiners other than *re* in the corpus, and there are no remaining L1 speakers to ask whether other combinations are possible.

The semantics of plurality are sometimes not be marked overtly on positional determiners. There are numerous instances of a morphologically singular positional determiner being used with obvious semantic plurality. In the data below in (79), the plurality of the items marked with a positional determiner is established in the discourse. In (79a), the speakers are exhorting their grandmother to go and eat the birds they have slaughtered. It has been established previously that there were multiple birds that were killed, so the plurality of the element in question is clear. However, the singular standing positional *hąk* is used instead of the plural *máakah*. In (79b), we not only have the context of plurality from earlier in the discourse, but we have overt plural marking earlier in this very sentence. We see *máakahe* 'these' used to refer to the stars in question, and then the speaker harkens back to said stars with *q'tamak*, with the anaphoric demonstrative and the singular lying positional.

(79) Examples of unexpected number marking in positional determiners

- a. *máareksukhąk* *rútini ráahana!*
 wąąrek#suk#hąk rut=rj rEEh=rą
 bird#be.small#POS.STND eat=ss go.there=IMP.F
 'go on and eat these birds!' (Hollow 1973a: 148)
- b. *Karóotiki*, *xkék máakahe, wáateehq níuniha,*
 ka=ooti=ki xkek wąąkah=E waa-teehq ruurj̫h=E=∅
 PROV=EVID=COND star these NOM-be.far be.PL=SV=CONT
 q'tamak *ó'ro'sh*
 q't#wąk o'=o'sh
 DEM.ANAP=POS.LIE be=IND.M
 'And then, these stars, they are there for a long time, those ones are.'
 (Hollow 1973b: 206)

The plurality of items like the ones we see above in (79) is marked in the English translation. We have two possibilities to explain this discrepancy. One pos-

5.7 *Deixis and definiteness*

sibility is that Mandan speakers are able to forgo marking overt plurality with positional determiners if the positional information is more pertinent to the context. Plurality in these cases can therefore be inferred through the previous discourse. The other possibility is that the English translation is not entirely reflecting the nuance of what is being expressed in Mandan. For example, while there were multiple birds slaughtered in (79a) and the speakers were alluding to these birds, perhaps the collective group of these birds is being treated more like a mass noun in this context than as count nouns. The same could be said for all the stars being referred to in (79b), where *q'tamak* is not truly describing the exact same thing as *xkék máakahe*. It is unclear which possibility is most likely, given the fact that there are no longer any L1 speakers remaining who can provide judgments or insights into constructions like these.

Throughout the corpus, positional determiners are used after nominals as a kind of noun classifier. Some Mandan speakers report that certain nouns are intrinsically associated with *hqk*, *mak*, or *nak*. This treatment of positional verbs as classifiers is common throughout the Siouan language family (Rankin 2004: 205). In the Dhegihan branch of Mississippi Valley Siouan, the path of grammaticalization has yielded a far more articulated system of classifiers that originate in these positional verbs. The shape of the nominal is often a clue to which positional classifier is required in Dhegihan languages. In Mandan, the physical shape of an item does not inherently dictate what positional determiner is required, though there are some strong tendencies. For example, flat, scattered, or distributed nominals are often used with *mak*. Thin or long nominals are often seen with *hqk*. Short or round nominals usually take *nak*. However, there are exceptions to these tendencies. We can find the same nominal used with differing positional determiners.

In (80) below, we see three instances of the noun *máa'qk* 'land, earth, ground, hill.' Each instance bears a different positional determiner. The choice to use a different positional determiner in each example below may arise from the narrator adding context to the shape of the land in the present context. At this point, the lack of L1 speakers renders this interpretation purely hypothetical. What we can determine from the triplet below is that Mandan has not developed an articulated noun class system in the same way that the Dhegihan languages have.

(80) Triplet with possible semantic differences

- a. *máa'qkhakero* *kisúkini* *éerehak*
waa'qk#hqk=ro *ki-suk=rj* *ee-reh=ak*
land#POS.STND=DEM.MID VERT-exit=ss PV-think=DS

5 Nominal morphology

Hollow et al. (1976) treat *mak* as the default deictic classifier, introducing vocabulary such as ‘what is this?’ and ‘this is a..’ with the compound form *rémak*. There are some instances of different positional determiners being used with the same nominal to alter the semantics of that nominal. Edwin Benson provides a triplet where there are clear semantic differences between using each positional determiner using *istíh* ‘night’ as an example (Trechter 2012a: 42).

- (81) Triplet with clear semantic differences

- a. *istúhqa*
istuh#hak
night#POS.STND
'that kind of night'
 - b. *istúhmak*
istuh#wak
night#POS.LIE
'tonight'
 - c. *istúhnak*
istuh#rak
night#POS.SIT
'in the night'

5.7 Deixis and definiteness

Given the lack of L1 speakers at the present time with whom we can test how widespread this pattern is, it is not clear if the semantics of each positional determiner carries the same meaning for all nominal constructions relating to temporality. We cannot therefore state that this three-way semantic split is uniform across Mandan temporal constructions. We do see some small degree of consistency with *háp* 'day,' however. There are numerous instances throughout the corpus where the presence of *mak* occurs after *háp*, bearing the same semantics as *istúh* 'night' does in (81b) above. We can see *háp* with *mak* in the example below.

- (82) Use of *mak* to express temporal proximity

miháp'mak
 wí#háp#wák
 orb#day#POS.LIE
 'today'

There are no analogous constructions with *hák* and *nak* in the corpus, so it is not possible to conclusively state how widespread this three-way semantic split is for other temporal nominal constructions.

5.7.3 Topics

Mandan employs several tactics when it comes to indicating that a nominal construction is a topic that the speaker wishes to emphasize in some way. [Kasak \(2022\)](#) outlines morpho-syntactic strategies employed in Mandan, most notably the difference between a topicalized and a focused element.¹⁴ The description that follows highlights the morphological marking of topics in Mandan. There are two formatives that are found on nominal contructions in the corpus: the topic marker *=na* and the aforementioned topic marker *=nu*. An explanation of these two topic markers differ from each other follows below.

5.7.3.1 Topic marker: *=na*

The topic marker *=na* is cognate with the Proto-Siouan emphatic topic marker **ya* ~ **yá*.¹⁵ In Mandan, the topic marker is the last element to appear on a nomi-

¹⁴More on this aspect of topic marking can be seen in §6.2.5.

¹⁵Proto-Siouan appears to have had an oral and nasal reflex of the emphatic topic marker, given the fact that reflexes of both vowels are found throughout the language family: e.g., Lakota *=čha* and Tutelo *=ya* have oral vowels for their topic markers, but Mandan *=na*, Biloxi *=yá*, and Assiniboine *=(h̥t̥j)yá* have nasal vowels.

5 Nominal morphology

nal construction, appearing after determiners and deictic markers, as illustrated in the example below.

- (83) Example of the placement of *=na* within the nominal complex

<i>Húurqmi</i>	<i>súkseena</i>	<i>áakaksheroonaksjih</i>
huu=aw̃	suk=s=ee=r̃	aakakshe=oow̃q̃k=s̃h
come.here=CONT	child=DEF=DEM.DIST=TOP	meet=NARR=INTS
'the child met her while she was coming' (Hollow 1973a: 89)		

Throughout the corpus, *=na* marks nominal elements where the speaker wishes to convey some special salience. The topic marker can indicate a new topic or one that has previously been mentioned in the discourse. In (84a) below, we see the first sentence of a narrative. The speaker uses *=na* to mark that she is beginning a story, shifting the topic to the story itself.

We see *=na* used to juxtapose one argument with another in (84b) below, where two individuals are arguing and the topic marker indicates that it is Royal Chief, as opposed to Lone Man, who is ahead. This topic marker indicates a contrast between the element marked with *=na* and another element in the discourse. This topic cannot be a shifting topic, as Royal Chief is already the subject of the previous clause, where he spoke about him be the oldest, so there is no change in topichood. The fact that Royal Chief is the salient figure instead of Lone Man is the reason for bestowing a morphological topic marker in this example, signaling one entity to the exclusion of others is the topic at hand.

There are also instances where there are neither shifts in aboutness or contrasts in one topic or another in elements bearing *=na*. In (84c) below, a familiar topic appears with *=na*, where the man at the center of the story bears the topic marker even after being introduced in the discourse. The presence of *=na* even after establishing him as the topic serves to remind the listener that this is indeed the same man that has already been mentioned and not someone else.

- (84) Kinds of topics marked by *=na*

- a. Shifting topic

<i>Hókeena</i>	<i>Kinúma'kshi</i>	<i>íwarooni</i>	<i>wakína'ni</i>
hok=ee=r̃	ki-ruw̃q̃k#shi	i-wa-roo=r̃	wa-kir̃q̃'=r̃
story=DEM.DIST=TOP MID-man#be.good PV.INS-1A-talk=ss 1A-tell=ss			
<i>éewereho'sh</i>			
ee-we-reh=o'sh			
PV-1A-want=IND.M			
'I want to tell a story and talk about Royal Chief.' (Hollow 1973a: 20)			

5.7 *Deixis and definiteness*

b. Contrastive topic

‘*À’skak mi’ó’ro’sh, korátoore. Éepe’sh,*
 q’s=ka=ak wj-o’=o’sh ko-ratoo=E ee-pE=o’sh
 be.this.way=HAB=DS 1s-be=IND.M REL-be.mature=SV PV-say.1A=IND.M
 éeheni *Kinúma’kshiseena* *Numá’k Máxanas*
 ee=he=rj ki-ruwá’k#shi=s=ee=rá ruwá’k wáxra
 PV-say=SS MID-man#be.good=DEF=DEM.DIST=TOP man one
pahúhanashoomaks.

pa-húh=rásh=oowák=s
 INS.PUSH-get.ahead.of=ATT=NARR=DEF

‘That is why I am it, older. I said it,’ he said and Royal Chief got ahead of Lone Man.’ (Hollow 1973a: 9)

c. Familiar topic

‘*U’staa numá’keena ó’rak, “Waréeho’sh,” éeheero’sh.*
 q’t=taa ruwá’k=ee=rá o’=ak wa-rEEh=o’sh ee-hee=o’sh
 be.in.past=LOC man=DEM=TOP be=DS 1A-go.there=IND.M PV-say=IND.M
 ‘*Máahsikü* *waréhak, éet míshiiháktaa*
 wáqh#si#kü wá-reh=ak ee=t wíjshii#hák=taa
 arrow#feather#trap 1A-want=DS DEM.DIST=LOC west#POS.STND=LOC
watewétaa waráahini. *Numá’keena ó’rak*
 wa-t-we=taa wa-rEEh=rj ruwá’k=ee=rá o’=ak
 UNSP-WH-INDEF=LOC 1A-go.there=SS man=DEM.DIST=TOP be=DS
koshúpka ki’úupani, inák numá’k
 ko-shúpka ki-úupa=rj irák ruwá’k
 3POSS.PERS-man’s.younger.brother MID-with=SS again man
 íretaas máxana, kú’he ki’úupani,
 i-retaa wáxra k’-uh=E ki-úupa=rj
 PV.INS-be.another one 3POSS.PERS-wife=SV MID-with=SS
kotámaanukakere máxana. Áqwe ki’órak
 ko-ta-waarúka=krE wáxra qáwe ki-o’=ak
 3POSS.PERS-AL-man’s friend=3PL one all MID-be=DS
íkixúphkereroomako’sh.
 i-kixúph=krE=oowák=o’sh
 PV.NUM-five=3PL=NARR=IND.M

‘Long ago, there was a man and he said ‘I am going. I want to trap eagles far away in the west, wherever it takes me.’ There was the man and he was with his younger brother, one other man also, he was with

5 Nominal morphology

his wife and one of their friends. All together, there were five of them.’ (Treichter 2012b: 237)

In a survey of four Mandan narratives from Hollow (1973a), Wolvengray (1991: 586) notes that the overwhelming majority of nominals bearing the topic marker =na are active subjects. Kasak (2022) corroborates this tendency in Mandan to mark active subjects with the topic marker, elaborating that =na can be found at the right edge of noun phrases that play almost any semantic role. Examples of different semantic roles bearing =na marking appear below, where the semantic role referenced in each example is displayed in bold.

(85) Examples of =na on nominals with differing roles

a. Active subject (agent)

<i>kowóorooreena</i>	<i>máah</i>
<i>ko-wooroo=ee=rä</i>	<i>wäqäh</i>
3POSS.PERS-husband=DEF=DEM.DIST=TOP	arrow
<i>íseksoomaksjh</i>	
i-sek=s=oowäk=sjh	
PV.INS-make=DEF=NARR=INTS	

‘her husband made an arrow’ (Hollow 1973a: 86)

b. Stative subject (experiencer)

<i>súknuma'k shínasheena</i>	<i>ó'roomako'sh</i>
<i>suk#ruwä'k shi=räsh=ee=rä</i>	<i>o'=oowäk=o'sh</i>
child#man be.good=ATT=DEM.DIST=TOP	be=NARR=IND.M
‘it was a nice young man’ (Hollow 1973a: 125)	

c. Direct object (patient)¹⁶

<i>Kóoxq'te Míhs</i>	<i>tasúkseena</i>
<i>kooxq'tE#wijh=s</i>	<i>ta-suk=ee=rä</i>
corn#woman=DEF	AL-child=DEM.DIST=TOP
<i>írataxak</i>	
i-ra-tax=ak	
PV.INS-INS.MTH-make.loud.noise=DS	

‘Corn Woman was crying for her child’ (Hollow 1973a: 112)

d. Indirect object (goal/recipient)

¹⁶This verb ‘weep for’ is not a transitive verb in English, but *íratax* is transitive in Mandan. Another way of interpreting this situations would be ‘Corn Woman was mourning her child.’

5.7 *Deixis and definiteness*

- Wáaratoonkaxi'heena* “hire,
 waa-ratoo=ka#xi'h=ee=rä hire
 NOM-be.mature=HAB#be.old=DEM.DIST=TOP now
 rapéhini rareehto'sh, mí'ti nata,”
 ra-peh=rä ra-rEEh=t=o'sh wí'#ti rät=E=Ø
 2A-announce=ss 2A-go.there=IND.M stone#house be.in.middle=SV=CONT
 éeheekereroomako'sh
 ee-hEE=krE=oowäk=o'sh
 PV-say=3PL=NARR=IND.M
 ‘they said to the old man, ‘now, you should go announce it while in
 the middle of the village.’’ (Hollow 1973b: 208)
- e. Oblique object of a postposition (instrument)
Rá'puseena mí' réxeena
 ra'-pus=ee=rä wí' rex=ee=rä
 INS.HEAT-be.spotted=DEM.DIST=TOP stone glisten=DEM.DIST=TOP
 ó'hara pá róotkika'ehe
 o'hrE=Ø pa rootki=ka'ehe
 with=CONT head hit=QUOT
 ‘Charred-in-Streaks hit her head with a translucent rock, it is said’
 (Kennard 1936: 36)
- f. Direct reference of a quoted speech
 “*Manákiniireena*,” éepeso'sh
 wrä#krjj=ee=rä ee-pe=s=o'sh
 wood#be.stacked=DEM.DIST=TOP PV-say.1SG=DEF=IND.M
 “‘An embankment,’ I said’ (Kennard 1936: 37)
- g. Adverbial adjunct (temporal)
Konúuke túk, éena háni
 ko-rüyükE tu=ak ee=rä ha=rä
 3POSS.PERS-sister be.some=DS DEM.DIST=TOP see=SS
tashíxteroomako'sh
 ta-shi-xtE=oowäk=o'sh
 AL-be.good-AUG=NARR=IND.M
 ‘he had a sister, and she then saw him and really liked him’ (Hollow
 1973a: 134)

The distribution of =na is such that any nominal element can take it. The exception to this statement seems to be that enclitic postpositions inhibit the presence

5 Nominal morphology

of topic marking. As we see in (85e), the nominal construction *mí' réx* 'translucent rock' under the scope of the postposition *ó'hara* 'with' is able to bear the topic marker *=na*. However, we do not see enclitic postpositions like the locative *=taa* and instrumental *=hqq* occur with a topic marker in the corpus. It is unclear whether this absence of *=na* with enclitic postpositions is due to a proscription against topic marking plus enclitic postpositions or just an incidental lack of such constructions in the corpus. A lack of L1 speakers indicates that this question of the grammaticality of *=na* with remains open.

The topic marker is only used to refer to mark an entire nominal construction as being salient to the discourse. For example, in situations where a noun occurs with some descriptive adjunct, such as in *súknuma'k shínasheena* 'nice young man' in (85b) above, we only observe *=na* at the rightmost edge of the overall nominal construction. We do not observe instances where an element within a nominal construction bears *=na*: i.e, we do not see *=na* on elements like *súknuma'k* in the nominal above.

In situations where *=na* occurs between a noun and some descriptive element, there is always a clear prosodic break that marks each element as being a separate construction rather than being part of a single nominal construction. In the example below, we see two different elements marked with *=na*. A free translation of the sentence below could be 'there was a big cave there,' but the presence of two topic markers indicates that the speaker is intending to bring focus on two different aspects of the discourse, rendering a more accurate intended reading as 'there was a cave, a big one, around there.'

- (86) Instances of *=na* on a noun with a following descriptive element

<i>róo'q'sh</i>	<i>óhopeena</i>	<i>xténa</i>	<i>nákoomaksjh</i>
<i>roo-q'sh</i>	<i>o-hop=ee=rq</i>	<i>xtE=rq</i>	<i>rq=oowqk=sjh</i>
DEM.MID-be.thus PV.LOC-hole=DEM.DIST=TOP be.big=TOP POS.SIT=NARR=INTS			
'there was a cave, a big one, around there' (Hollow 1973a: 93)			

We see *=na* appear on deictic demonstratives, such as the distal demonstrative *ée* in *éena* in (85g) above. Deictic demonstratives are often used in an adverbial manner, either spatially or temporally, but they clearly pattern with nominals. True adverbials, such as *inák* 'again' or *q'sh* 'soon,' never bear topic marking, so we can say that *=na* is not simply any kind of topic marker, but a topic marker that is specific to nominals. Non-nominal elements can certainly be topicalized in Mandan discourse, but these elements will be marked through syntactic or prosodic means, not morphological ones.¹⁷

¹⁷ See §6.2.5 for further description of topicalization strategies in Mandan.

5.7 *Deixis and definiteness*5.7.3.2 **Aforementioned topic marker: =nu**

A less common method of indicating a topic that is familiar is the aforementioned topic marker *=nu*. It is likely a reflex of the Proto-Siouan **rū*(-sa) ‘one,’ where the semantics have become referential instead of quantificational. In Mandan, the aforementioned topic marker differs from the topic marker *=na* in that it appears within a different position within a nominal complex. Namely, *=nu* appears before the definite article *=s*. Mixco (1997a: 42) translates this marker as meaning ‘aforementioned’ or ‘the former.’ All instances of *=nu* coincide with definite marking.

The context of the example below in (87a) is that the speaker has already introduced some origin *ó’harani* ‘from [there],’ so that location is already primed in the discourse. The speaker then clarifies where this location is by stating that it was from *mí’ti xténus* ‘the big village,’ where *=nu* is referencing the previously established origin of the shouting in this example. Likewise, in (87b), we see that *Húp Wará’re* ‘Fiery Mocassin’ is introduced, and then immediately referenced by the use of *ée* ‘that one’ plus a full complex of nominal morphology.

It is worth noting that (87b) is the lone instance of both the aforementioned topic marker *=nu* coinciding with the topic marker *=na*. Clearly, both topic markers serve different purposes in the discourse, but employing both at the same time is possible under precise circumstances. In this case, it seems that the speaker wishes to refer back to a topic that she has just brought up while at the same time emphasizing a shift in aboutness to the same topic.

(87) Examples of the placement of *=nu* within the nominal complex

- a. *Ó’harani, mí’ti xténus, péhkereroomako’sh.*
 $\text{o’}\#hrE=rj \quad \text{w}\dot{\text{i}}’\#ti \quad \text{xtE=r}\dot{\text{u}}=\text{s} \quad \text{peh=krE=oow}\dot{\text{u}}\text{k=o’sh}$
 be#CAUS=SS stone#dwell be.big=ANF=DEF shout=3PL=NARR=IND.M
 ‘From there, **that big village**, they were shouting.’ (Hollow 1973b: 107)
- b. *Húp Wará’re, éenuseena, mí’tis*
 $\text{h}\dot{\text{u}}\text{p wra’=E ee=r}\dot{\text{u}}=\text{s=ee=r}\dot{\text{a}}$
 $\text{shoe fire=SV DEM.DIST=ANF=DEF=DEM.DIST=TOP stone#dwell=DEF}$
 $\text{i’kikisqapek, q}\dot{\text{u}}\text{we r}\dot{\text{a}}’\text{pteroomako’sh}$
 $\text{i-ki-ki-saqE=ak a}\dot{\text{q}}\text{we ra’-pte=oow}\dot{\text{u}}\text{k=o’sh}$
 $\text{PV.IND-VERT-MID-be.around=DS all INS.HEAT-burn=NARR=IND.M}$
 Fiery Mocassin, **the one and the same**, went back around the village
 and it all burned.’ (Hollow 1973a: 155)

5 Nominal morphology

The aforementioned topic marker often appears immediately after its initial referent in the discourse, though it is able to appear later in the discourse to remind the listener that they have preexisting knowledge of the entity in question.

- (88) Use of *=nu* later in the discourse

<i>Óo</i>	<i>ó'harani</i>	<i>mí' pshiireena</i>	<i>mákak,</i>
<i>oo</i>	<i>o'#hrE=rj</i>	<i>wí' pshii=ee=rq</i>	<i>wák=ak</i>
DEM.MID be#CAUS=ss rock be.flat=DEM.DIST=TOP POS.LIE=DS			
<i>warúshani</i>	<i>warópxani</i>	<i>éewereho're.</i>	<i>Káni manáktetaa</i>
<i>wa-ru-shE=rj</i>	<i>wa-ropxE=rj</i>	<i>ee-we-reh=o're</i>	<i>ka=rj wrakte=taa</i>
1A-INS.HAND-hold=ss	1A-enter=ss	PV-1A-want=IND.F	PROV=ss altar=LOC
<i>kihkanákmaherekere'sh.</i>	<i>Káni</i>	<i>óo</i>	<i>ó'harani mí'nus</i>
<i>kihkrák#wá-hrE=krE=o'sh</i>	<i>ka=rj</i>	<i>oo</i>	<i>o'#hrE=rj wí'=ry=s</i>
be.seated#1s-CAUS=3PL=IND.M	PROV=ss	DEM.MID be#CAUS=ss	rock=ANF=DEF
<i>warúsahanini</i>	<i>wakihkanako're.</i>		
<i>wa-ru-sráh=rj</i>	<i>wa-kihkrák=o're</i>		
1A-leave.behind=ss	1A-be.seated=IND.F		

‘I wanted to take a flat rock that was lying from there and go inside. And after that, they had me sit at the altar. And after that, I left **that same rock** [at the altar] and sat down.’ (Hollow 1973b: 318)

In (88) above, the flat rock is introduced into the discourse in the first sentence in the example. Several sentences later, the rock is re-introduced using *=nu*, serving to remind the listener that this is the same rock that was present in the discourse earlier and not some new rock.

When compared to the topic marker *=na*, the aforementioned topic marker *=nu* is starkly less common in the corpus. It is more common in the texts gathered by Kennard (1934) that were re-elicited by Hollow (1973b) than in the narratives gathered by Hollow (1973a) in the later parts of the twentieth century or those narratives gathered in the twenty-first century by Trechter (2012b). The fact that speakers born in the nineteenth century were more likely to use *=nu* may suggest that *=nu* was a more productive formative in the past but has fallen into disuse by later generations of Mandan speakers. Another possibility is that there are stylistic reasons to use *=nu* that are not being taken into consideration. It is certainly the case that there are register differences in English for speaking of ‘the former’ or ‘the latter,’ so it is possible that the rarity of *=nu* can come from a similar register difference in Mandan. Without L1 speakers, however, there is no way to know if the rarity of *=nu* is reflective of everyday speech or if there are other nuances that are not immediately clear.

6 Syntax and clause structure

This chapter is devoted to the syntactic phenomena that are present in the Mandan corpus. Mandan, like other Siouan languages, is noted for having complex verbal constructions that are complicated by the frequent omission of overt nominal constructions in the discourse. Discourse structure in Mandan is discussed in detail in Chapter 7, while this chapter concerns itself with the grammar of phrases and clauses.

The syntax of nouns and elements associated with nominals has a very predictable and inviolable word order in Mandan. Throughout the corpus, there is no deviation from the order that is described in the section on nominal constructions below. The lack of malleability in the ordering of words within a nominal construction is indicative of the lack of flexibility in the semantics or pragmatics associated with such constructions. Overall, the syntax of nominal constructions is quite rigid, which contrasts with the fluidity of word order within uniclausal and multCLAUSAL constructions.

One of the more integral aspects of Mandan syntax is its system of switch-reference and reliance on clausal adjuncts to play the discourse role that coordination might otherwise play in other languages. Switch-reference and other interCLAUSAL relationships is discussed in this chapter at length. The default word order in Mandan is subject–object–verb, where the doer of the action or the experiencer of the state is the initial element, while the action or state is the final element in a sentence. There are numerous exceptions to this default order due to various topicalization strategies, which are discussed in the section on topicalization below.

6.1 Nominal constructions

Nouns often appear throughout the corpus with no overt morphology. The interaction of multiple words within a nominal construction is highly regimented. The noun, being the most salient constituent of a nominal construction, appears as the initial element of any nominal construction. Nouns can be followed by other elements, which are discussed at length in the sections below.

6 Syntax and clause structure

6.1.1 Noun phrases

The noun phrase in Mandan uniformly involves the noun or a compound noun being the leftmost element in its domain. Any adjunct materials, such as stative verbs that are functioning in an adjectival capacity or relative clauses, will immediately follow the noun being modified. Articles, determiners, and other enclitics will appear after any adjuncts that may be present. A template for noun phrases in Mandan appears below.

Table 6.1: Noun phrase template

0	1	2	3	4	5
Noun	Stative verb	INF	DEF	DEM	TOP
Compound noun	Relative clause				

As Table 6.1 shows, a noun phrase can be expanded to include adjunct materials plus enclitics. This template does not have any exceptions, so the aforementioned topic marker will always precede the definite article, the definite article will always precede the demonstrative, and the demonstrative will always precede the topic marker.

We can see some examples of noun phrases that conform to the above template in (1) below.

(1) Examples of noun phrases

- a. *maná terés*
wra_q trE=s
tree be.big.around=DEF
'the big trees' (Hollow 1973a: 21)
- b. *mí' pshíreena*
wí_q pshii=ee=rq_q
stone be.flat=DEM.DIST=TOP
'the flat stone' (Hollow 1973b: 316)
- c. *kowóokih*
ko-wV-o-kih
3POSS.PERS-UNSP-PV.IRR-man's.brother.in.law
koxamáhseena
ko-xwqh=s=ee=rq_q
REL-be.small=DEF=DEM.DIST=TOP
'his brother-in-law who is smallest' (Hollow 1973a: 133)

6.1 Nominal constructions

Besides nouns and adjuncts, the most common kind of formative found within a noun phrase is the definite article =s. Definiteness is not obligatorily marked in Mandan, as discussed earlier in §5.7.1. See §5.7.2.1 for further information on the use of deictic determiners and §5.7.3 for more on topic marking.

6.1.2 Quantifiers and numerals

In Mandan, quantifiers and numerals will always appear to the right of a noun phrase. We can see instances of quantifiers and numerals being used with noun phrases in the examples below.

(2) Examples of quantifier placement with noun phrases

- a. *ta-waqh* *aqwe*
ta-waqh=krE=s aqwe
AL-arrow=3PL=DEF all
'all his arrows' (Hollow 1973a: 155)
- b. *mí'h* *óshi* *tóop*
wí'h o-shi toop
blanket PV.IRR-be.good four
'four blankets that are good' (Hollow 1973b: 35)
- c. *manáwerexe* *ko'ú'st* *kotké* *kokámix*
wrä#wrex=E ko-ú't=t ko-tke ko-kawíx
wood#kettle=SV REL-be.in.past=LOC REL-be.heavy REL-be.round
koxté *kixúqh*
ko-xte=s kixúqh
REL-be.big=DEF five
'five big, round, heavy, old drums' (Mixco 1997a: 21)
- d. *manáwerexe* *ko'ú'st* *kotké* *kokámix*
wrä#wrex=E ko-ú't=t ko-tke ko-kawíx
wood#kettle=SV REL-be.in.past=LOC REL-be.heavy REL-be.round
hú
hú
many
'many round, heavy, old drums' (Mixco 1997a: 21)
- e. *míih* *máakahe* *sáqkare*
wíjh wáqkah=E sáqka=re
woman these=SV few=DEM.PROX
'these few women here' (Hollow 1973a: 53)

6 Syntax and clause structure

- f. *ptiⱩ sáqkana*
ptiⱩ sáqka=rä
 buffalo few=TOP
 'a few buffalo' (Hollow 1973b: 79)
- g. *wáahokshuke híñus*
waa-hok#kshuk=E híñus
 NOM-voice#be.narrow=SV many=ANF=DEF
 'those many animals' (Hollow 1973a: 45)

In each of the examples above in (2), the quantifier or numeral appears to the right edge of the noun phrases. Noun phrases can contain appear with articles or demonstratives. It is worth noting that we do not see any instances of topicalized nominal constructions that appear under the scope of a quantifier or numeral. It is unclear whether this lack of *=na* or *=nu* marking within quantified nominal constructions is prohibited in Mandan or such constructions just never appeared in the corpus. Like many issues of Mandan grammar, the lack of L1 speakers inhibits a definitive answer. Quantifiers themselves, however, can bear topic marking, as we see in (2f) and (2g) above. The fact that quantifiers can bear topic marking highlights the fact that morphological topic marking in Mandan is restricted to an entire constituent and not just components thereof: i.e., the whole nominal construction bears the topic marker rather than, say, the noun alone. Thus, quantifiers and numerals are treated as extensions of the noun phrase with respect to topic marking in Mandan.

6.1.3 Possession

All nouns in Mandan are classified by whether they take alienable possession or inalienable possession. The morphological behavior of possessed nouns has already been discussed in §5.2, so the description here focuses on the syntactic behavior of possession.

When a noun is possessed, the first noun is always the possessor, followed by the possessee. As previously described, possession marking appears on the possessee. However, overt possessors may not be present in the syntax, as Mandan frequently omits overt arguments that are judged to be obvious from the context of the discourse. Speech act participants that possess a noun—first and second person possessors—never have an overt nominal element appear before the possessed noun. A noun possessed by a first or second person possessor appear with only the possessive marking prefixed upon it and no preceding nominal construction. We can see examples of inalienable possession in the examples below.

6.1 Nominal constructions

(3) Examples of inalienable possession

- a. *mi'maa*
w'-iwaq̄
1POSS-body
'my body' (Hollow 1970: 96)
 - b. *numá'k imáare*
ruwa'k iwraq̄=E
man body=sv
'a man's body' (Hollow 1973b: 202)
 - c. *riráse*
ri-ras=E
2POSS-name=sv
'your name' (Hollow 1973a: 14)
 - d. *koshúykas ráse*
ko-shuyka=s ras=E
3POSS-younger.brother=DEF name=sv
'her younger brother's name' (Hollow 1973b: 285)

All possessors are able to be marked for definiteness, as are possessees. We can see this double definite marking in nouns involving alienable possession below in (4b), along with other examples involving alienable possession.

(4) Examples of alienable possession

- a. *ptasúk*
p-ta-suk
1POSS-AL-child
'my child'
 - b. *Kóoxq’te Míih* *tasúkseena*
kooxq’te wíjh=s ta-suk=s=ee=rq
corn woman=DEF AL-child=DEF=DEM.DIST=TOP
'Corn Woman's child' (Hollow 1973a: 112)
 - c. *nitámi’tis*
ri₂-ta-wí₁#ti=s
2POSS-AL-stone#dwell=DEF
'your village' (Hollow 1973a: 217)

6 Syntax and clause structure

- d. *Rá'puse* *tami'ti*
 ra'-pus=E ta-wi'#ti
 INS.HEAT-be.speckled=SV AL-stone#dwell
 'Speckled Arrow's village' (Hollow 1973a: 135)

Further complicating the matter of how to express possession in Mandan is the fact that many nouns are structurally derived from nominalized relative clauses that is headed by a preverb. Mandan shares this tendency to blur the line between noun and verb with other Siouan languages, where nouns are often a lexicalized description thereof: e.g., *ína'ka* 'corn grinder' is composed of the instrumental preverb *i-*, the verb *ná* 'grind,' and the habitual aspect marker *=ka*. Thus, this noun is most literally translated as 'what you grind [corn] with.' Therefore, possessive marking for such nouns overlaps with subject marking for verbs.

(5) Possession marking on nouns derived from relative clauses

- a. *óti*
 o-ti
 PV.LOC-dwell
 'his/her house' (Hollow 1970: 251)
- b. *ówati*
 o-wa-ti
 PV.LOC-1A-dwell
 'my house' (Hollow 1970: 251)
- c. *í'karehirit*
 i'-ka-rehrit
 PV.RFLX-INS.FRCE-fan
 'his/her fan' (Hollow 1970: 87)
- d. *í'mikarehirit*
 i'-wi-ka-rehrit
 PV.RFLX-1S-INS.FRCE-fan
 'my fan' (Hollow 1970: 87)
- e. *ímashut*
 i-wašhut
 PV.INS-clothe
 'his/her clothes, shirt, dress, coat' (Hollow 1970: 97)

6.1 Nominal constructions

- f. *ríimashut*
 rV-i-washut
 1S.PL-PV.INS-clothe
 'our clothes, shirt(s), dress(es), coat(s)' (Hollow 1970: 97)

Nouns derived from relative clauses in Mandan are lexicalized to the extent that there is a shared concept of what the noun being described is. The descriptive nature of Mandan can create situations where the same nominalized relative clause can be interpreted in different ways depending on the context: e.g., *wáakapus* is literally the nominalizer *waa-* plus the verb *kapús* 'write, draw.' However, this one word can variously mean 'book,' 'paper,' 'school,' 'writing,' 'homework,' *inter alios*. Though these constructions take verbal person marking to express possession, they are clearly treated as nominal elements within the grammar, as they conform to the same template for nominal syntax and morphology described throughout this book. In the example below, *óti* 'house' bears a definite article and a distal demonstrative, plus the whole construction is able to be taken under the scope of the locative postposition *=t*.

- (6) *ótiseet*
 o-ti=s=ee=t
 PV.LOC-dwell=DEF=DEM.DIST=LOC
 'into the house' (Hollow 1973a: 202)

The Mandan language vigorously employs this ability to create nouns from relative clauses throughout the extant corpus. A simple perusal of Hollow's (1970) dictionary demonstrates that this class of noun represents a substantial percentage of the lexicon. Any future attempts at producing a Mandan dictionary should ensure that the morphological complexities of such nouns be explicitly clear to learners, though that effort lies outside the scope of the present book.

6.1.4 Postpositional phrases

Like other languages with a default subject–object–verb word order, Mandan features postpositions instead of prepositions. Postpositions will always be the rightmost element of any kind of nominal construction. Most postpositions are independent words, though there are a small set of postpositions that are enclitics that can never appear independent of the noun over which they have scope.

Postpositions in Mandan behave like stative verbs in that take stative person marking for any first or second person arguments. We can see some examples

6 Syntax and clause structure

of postpositional phrases below in (7) where the postpositions themselves are independent words, as well as instances in (7b) and (7d) where stative person marking appears on the postposition to indicate that the postposition is taking a non-third person argument.

(7) Examples of free postpositional phrases

- a. *Kóoxq’te Míhs úyupa*
kooxq’te wijh=s ɿyupa
corn woman=DEF with
‘with Corn Woman’ (Hollow 1973a: 112)
- b. *mú’pa*
w’-ɿyupa
1s-with
‘with me’ (Hollow 1973b: 284)
- c. *taté ú’t*
tate ɿ’t
father.voc towards
‘to father’ (Kennard 1936: 25)
- d. *mi’ú’t*
wí-ɿ’t
1s-towards
‘to me’ (Hollow 1973b: 122)
- e. *ókxúhe máapes*
o-kxúh=E wáapE=s
PV.LOC-lie.down=sv under=DEF
‘under her bed’ (Hollow 1973b: 321)

As stated above, there is a small set postpositions that occur in Mandan as enclitics. Such postpositions never appear without being bound to a preceding word. We also never see any instances of these enclitic postpositions being used with first or second person pronominal prefixes. It is unclear if such constructions would be ungrammatical or if the semantics of this small class of postpositions limits the contexts under which anyone would need to produce such utterances. A set of examples of enclitic postpositions with nominal complements appears below.

(8) Examples of enclitic postpositional phrases

6.1 Nominal constructions

- a. *mústaa*
wüt=taa
garden=LOC
'in the garden' (Hollow 1973a: 84)
- b. *mí'tit*
wị'#ti=t
stone#dwell=LOC
'to the village' (Hollow 1973a: 107)
- c. *ómanatsoohq̣q*
o-wṛat=s=oo=hq̣q
PV.IRR-axe=DEF=DEM.MID=INS
'with the axe' (Kennard 1936: 25)

Postpositions in Mandan often form strings where an enclitic postposition will combine with a free postposition. These compound postpositions typically involve a single postpositional root plus some form of the locative enclitic, either =*taa* or =*t*. Another common compound postposition is *ó'harani* 'from,' which is morphologically composed of the verb *ó'* 'be' plus the causative and same-subject switch-reference marker. This construction is no longer decomposable semantically for speakers and has lexicalized to indicate direction away from a person or place or temporal distance from a point in time. We can see examples of compound postpositional phrases in the examples below.

(9) Examples of compound postpositional phrases

- a. *miníxtē* *áakihq̣q*
wrij#xtE aaki=hq̣q
water#be.big above=INS
'on top of the lake' (Hollow 1973a: 212)
- b. *í'kapxe* *maná ówa'shkap* *kú'shtaa*
í'-kapxe wṛa o-wa'-shkap ku'sh=taa
PV.RFLX-earn wood PV.LOC-INS.PRCE-pinch inside=LOC
'inside the sweat lodge stake holes' (Hollow 1973a: 119)
- c. *mí'ti* *úupat ó'harani*
wị'#ti úupat o'#hrE=ṛi
stone#dwell other be#CAUS=SS
'from another village' (Hollow 1973b: 138)

Compound postpositions are treated as a single word with respect to their status as a syntactic and prosodic unit.

6 Syntax and clause structure

6.1.5 Coordination

The coordination of nominal compounds in Mandan is similar to that of verbal coordination in that the same-subject switch-reference marker *=ni* is employed. In such constructions, the same-subject switch-reference marker appears after every noun in the coordinated phrase. We can see examples of coordinated structures in the data below.

(10) Examples of *=ni* with nominal coordination

- a. *shehékini xarátani q̣qwe kihíkereoomaks.*
shehek=rj̄ xratE=rj̄ q̣qwe ki-hi=krE=oowąk=s
coyote=ss wolf=ss all RFLX-arrive.there=3PL=NARR=DEF
'The wolf and coyote all got together.' (Hollow 1973a: 43)
- b. *mí'hini wáa'opqapi túwaharani...*
wí'h=rj̄ waa-o-pqapi tu#wa-hrE=rj̄
robe=ss NOM-PV.IRR-be.thin be.some#1A-CAUS=SS
'I made a robe and some calico goods and...' (Hollow 1973a: 62)
- c. *ímaareksukini patóhanashini mítihqni matewé ó'roshka*
i-wáareksuk=rj̄ pa#toh=rash=rj̄ wiihq=rj̄ wa-t-we o'=oshka
PV.POSS-bird=ss head#blue/green=ATT=SS goose=SS UNSP-WH-INDF be=EMPH
'birds, ducks, geese, and whatever it is' (Hollow 1973a: 91)

Another strategy for expressing nominal coordination is the construction *éeheni*. Literally, this is composed of the preverb *ée-* plus the verb *hé* 'say' and same-subject switch-reference marker. It is likely derived from some periphrastic hearsay construction akin to 'one says X and...' or 'they say X and...', but it has become lexicalized as a true coordinator. However, this coordinator is exclusively used for nominal constructions and is not used to link verbal constructions. We can see examples of *éeheni* below from the corpus.

(11) Examples of nominal coordination with *éeheni*

- a. *Kinúma'kshi éehni Numá'k Máxana íwahekanashe*
ki-ruwą'k#shi ee-he=rj̄ ruwą'k wąxrą i-wa-hek=rash=E
MID-man#be.good PV-say=ss man one PV.INS-1A-know=ATT=SV
'what I know about Royal Chief and Lone Man' (Hollow 1973a: 1)
- b. *na'é éeheni taté éeheni mishúyka*
rą'e ee-he=rj̄ tatE ee-he=rj̄ wj-shuyka
mother.voc PV-say=ss father.voc PV-say=ss 1POSS-younger.brother

6.1 Nominal constructions

One final strategy for coordinating noun phrases is to use *inák* ‘again’ after each of the coordinated noun phrases. This tactic for indicating coordination appears to be used in longer lists, and as such, it is rare in the corpus. However, when asked to produce a sentence with a longer set of coordinated noun phrases, the utterance below is what Mr. Edwin Benson produced:

- (12) Example of nominal coordination with *inák*

<i>Pt̪i</i>	<i>inák, mapáakokohka</i>	<i>shóte</i>	<i>inák, miihq</i>
<i>pt̪i</i>	<i>irák wä-paa-ko~kok=ka</i>	<i>shot=E</i>	<i>irák wiihą</i>
buffalo again UNSP-be.bitter#AUG~antelope=HAB be.white=sv again goose			
<i>inák, pusé tóhe</i>	<i>inák, minísweerut</i>	<i>psi</i>	<i>inák, miníse xíi</i>
<i>irák puse</i>	<i>toh=E irák wr̪is#wee#rut</i>	<i>psi</i>	<i>irák wr̪is=E xii</i>
again cat be.blue again horse#feces#eat be.black again horse be.buckskin.color			
<i>ropxímina'kitaa</i>	<i>sí</i>	<i>ráahini</i>	<i>éerehkere're.</i>
<i>ropxi#wirą'ki=taa</i>	<i>si=Ø</i>	<i>rEEh=r̪i</i>	<i>ee-reh=krE=o're</i>
hide#boat=LOC	travel=CONT	go.there=ss	PV-want=3PL=IND.F
'A buffalo, a white butterfly, a goose, a blue cat, a black dog, and a buckskin horse want to go traveling.' (Benson et al. 2016: 9)			

In all of the instances of coordination discussed here, coordination involves polysyndeton: i.e., the repetition of a coordinating morphological element for each item that is syntactically coordinated. In instances of coordinated nominal constructions, the only element that does not feature a morphological marker of coordination is the final element in the series. Coordination does not involve monosyndeton in series of three or more.

6 Syntax and clause structure

Disjunction and coordination have identical syntactic structures in Mandan, and they employ identical morphology. Thus, it is only apparent whether *=ni* indicates ‘and’ or ‘or’ from the context, as we can see in the example below.

- (13) Example of nominal disjunction with *=ni*

tamáana kímanashini kúupa tewé hákerookto'sh
ta-waarq kiiwá=rash=rí kuupa t-we hak=roo=kt=o'sh
 AL-winter six=ATT=SS seven WH-INDF POS.STND=DEM.MID=POT=IND.M
 ‘[I don’t know] whether he was six or seven years old’ (Hollow 1973a: 195)

Nominal coordination strongly parallels verbal and clausal coordination, which is explained in greater detail in §6.3.6. One caveat is that nominal coordination will exclusively involve the same-subject switch-reference marker *=ni*. There is no instance of nomaminal coordination where the different-subject switch-reference marker *=ak* is involved.

6.2 Verbal constructions

The true weight of Mandan discourse is carried by the verb. As discussed at length in Chapter 4, Mandan has an elaborate set of verbal morphology. The template for verbs in Mandan appears again below.

Table 6.2: Prefix field in Mandan

11	10	9	8	7	6	5	4	3	2	1	0
REL	NEG	UNSP	1PL	PV.IRR	PV.LOC	1SG	2SG	SUUS	ITER	INS	STEM
					PV.INS		2PL	MID	INCP		
					PV.TR			RECP			

Mandan is a language with a default subject–verb–object word order. As such, verbs are typically the last element in an utterance. The template above highlights how much information verbs carry in just the prefix field alone. When taking aspectual, evidential, modal, negational, and sentential enclitics discussed in §4.3, the information load placed on verbs becomes all the more evident.

6.2.1 Verb phrases

A typical Mandan clause features a single verb within its verb phrase. That is to say, most Mandan clauses do not involve auxiliary verbs. Given the propensity

6.2 Verbal constructions

for omitting overt arguments from the discourse, many sentences in Mandan are composed of a single word: the verb. Numerous examples throughout this book have involved a single word bearing the information load of an entire sentence. Mandan grammar likewise is able to treat nouns as stative verbs when no other verbal material is present. We can see several examples of this phenomenon below, where a single verb contains sufficient information to constitute a whole sentence.

(14) Examples of one-word sentences

- a. *Shi're.*
shi-o're
be.good=IND.F
'It is good.' (Hollow et al. 1976: 15)
- b. *Wakaráho'sh.*
wa-krah=o'sh
1A-be.afraid=IND.M
'I am afraid.' (Hollow 1973b: 4)
- c. *Éeminpeso'sh.*
ee-w-ri-pE=s=o'sh
PV-1A-2s-say.1A=DEF=IND.M
'I definitely said it to you.' (Hollow 1973b: 320)
- d. *Istúhoomako'sh*
istuh=oowak=o'sh
night=NARR=IND.M
'It was night.' (Hollow 1973b: 171)

In verb phrases where an auxiliary verb occurs, the main verb will precede the auxiliary verb. For example, we see in (15a) below, where the visual evidential auxiliary *ishi* appears after the stative verb *psi* 'be black.' Likewise, the verb *kú* 'give' is used in benefactive constructions, as we can see in (15b). Subject marking must be present on each of the verbs within the verb phrase, though object marking is only marked once.

(15) Examples of auxiliary verbs in a verb phrase

- a. *psi ishi'sh*
psi ishi=o'sh
be.black VIS=IND.M
'it must be black' (Hollow 1973a: 123)

6 Syntax and clause structure

- b. *warúsha* *minikú'ktō'sh*
 wa-ru-shE w-ri-ku'=kt=o'sh
 1A-INS.HAND-hold 1A-2s-give=POT=IND.M
 'I will take it for you' (Hollow 1973b: 307)

Other verbs that have been talked about in the literature as auxiliaries—for example, the positionals *hák*, *mák*, and *nák*—actually introduce multiclausal constructions rather than functioning as true auxiliary verbs. This topic is explored further in §6.3.

6.2.2 Simple clause structure

Mandan is like other Siouan languages in that its default word order is subject–object–verb. One fortunate aspect of the Mandan corpus is that it is predominantly composed of free speech in the form of traditional and personal narratives. Therefore, there is a large amount of data to back up this core aspect of Mandan grammar. We can see examples of this canonical word order below. Subjects are indicated in bold, while direct objects are underlined.

(16) Examples of SOV word order

- a. *Koshúŋkas* *máamanahku hú* *téheres*
 ko-shúŋka=s waawarähku hú tee#hrE=s
 3POSS.PERS-younger.brother=DEF deer many die#CAUS=DEF
 'Her brother killed a lot of deer.' (Hollow 1973b: 202)
- b. *Kinúma'kshiseena* *Numá'k Máxanas*
 ki-ruwá'k#shi=s=ee=rá ruwá'k wáxra=s
 MID-man#be.good=DEF=DEM.DIST=TOP man one=DEF
pahúhanashoomaks
 pa-húh=rásh=oowák=s
 INS.PUSH-get.ahead.of=ATT=NARR=DEF
 'Royal Chief got ahead of Lone Man.' (Hollow 1973a: 9)
- c. *Paxirúukeena* *miní híjhere*
 paxruuk=ee=rá wrí híj#hrE
 cornsilk=DEM.DIST=TOP water drink#CAUS
 'Cornsilk made him drink water' (Hollow 1973a: 133)
- d. *Komíihere* *maná ósasak*
 ko-wíjh=re wrá o-sa~sak
 3POSS.PERS-man's.sister=DEM.PROX wood PV.IRR-AUG~dry

6.2 Verbal constructions

rutq̣q̣nik.

ru-ṭaq̣=ṛik

INS.HAND-drag=ITER

‘This sister of his was dragging dry wood.’ (Hollow 1973a: 196)

We have seen throughout this book that many overt nominal arguments are omitted when Mandan speakers produce utterances. As such, it is less common to see this kind of explicit SOV sentence structure in a running narrative, as listeners are trusted to keep track of who is doing what to whom. It is very common to not hear an overt subject for an extended period of a narrative, especially when there are only one or two individuals to keep track of.

In sentences with indirect objects, the indirect object is almost never explicitly present in the syntax. Furthermore, it is rare for even two arguments to be explicitly present in the syntax. We can infer, however, that in sentences with indirect objects that the indirect object will precede the direct object in the syntax. We can see in example (17) below that there is an omitted subject ‘he’ and the indirect object being marked is second person singular. The noun *íwarahere* ‘for your food’ bears the directional preverb *i-*, indicating that the action is being done for the sake of the second person argument having food. The direct object *pṭi* ‘cow’ is the direct object, as it is the entity to whom the action is happening. The direct object is underlined, while the indirect object is underlined.

(17) Ordering of objects in ditransitive constructions

<i>íwarahere</i>	<i>pṭi</i>	<i>téeharani</i>	<i>niku’kto’sh.</i>
i-wa-ra-hrE	pṭi	tee#hrE=ṛi	ṛi-ku’=kt=o’sh
PV.DIR-UNSP-2A-CAUS	buffalo	die#CAUS=ss	1s-give=POT=IND.M

‘He will kill a cow for your food.’ (Hollow 1973a: 60)

Direct objects appear immediately before the verb in neutral utterances where there is no topicalization causing another argument to be moved to a more prominent position within the clause. In other ditransitive constructions, such as those where an applicative preverb adds an additional argument to the syntax, we likewise see that direct objects are the closest argument to the verb, while the tertiary argument appears after the subject but before the direct object.¹

In the example below, Royal Chief is participating in a game with some children where they are throwing their eyes at a tree and then calling them back.

¹I am simply using the term tertiary argument as a cover term for arguments that are introduced by a ditransitive construction that are not subjects or direct objects. I imply no theoretical motivation behind the use of this term.

6 Syntax and clause structure

Royal Chief is the unspoken subject in this sentence, and we can assume that he would be the initial element in (18) if the narrator had chosen to include him. The direct object *istámi* 'eye' is the closest element to the verb, as expected. The applicative argument introduced by the directional preverb *i-* is the postpositional phrase *skiskika kaxtékseet* 'to the willow bunch.' Like the indirect object in (17) above, we see that the tertiary argument appears before the direct object below in (18). The infrequency of overt nominal constructions in Mandan discourse can cause drawing generalizations about syntax to be opaque, but the pattern holds that when a ditransitive verb occurs with overt arguments in the corpus, the direct object is always immediately before the verb, while the other non-subject argument appears immediately before the direct object. The direct object is again underlined, while the tertiary argument is shown in bold.

- (18) Ordering of applicative arguments in ditransitive constructions

<i>Skiskika kaxtékseet</i>	<i>istámi</i>	<i>iky'teoomako'sh.</i>
skiskika	kaxtek=s=ee=t	istawí' i-kú'tE=oowák=o'sh
willow	bunch=DEF=DEM.DIST=LOC	eye PV.DIR-throw=NARR=IND.M
'He threw <u>his eyes</u> to the willow bunch.'		

(Hollow 1973a: 34)

Adjunct material that affect the overall clause, such as temporal or deictic adverbials, have two typical placements within a Mandan clause. Adjuncts either directly precede or directly follow the subject. In (19a), we see the deictic adjunct *óo* 'there' at the beginning of the sentence, appearing before the subject *Kawóox-ohkare* 'this Swallower.' The placement of adjuncts in (19a) contrasts with the placement of the adverb *inák* 'again' in (19b). In the latter, the adverb appears after the subject *rétaaseena* 'the other one.' In the free translation that follows, I have rendered it as 'The other one asked again for his food,' rather than 'The other one asked for his food again.' Given that English allows for the syntactic flexibility to render the same core proposition with two different syntactic outputs, it is likely the case that Mandan features a similar flexibility with adjuncts that have semantic scope over the whole proposition. There may be a slight pragmatic difference in choosing to place the adjunct before the subject or after the subject, but there are no L1 speakers to elucidate this issue. We also see in (19c) situations where two different adjuncts appear in different spots within the sentence: i.e., before the subject and after it. The adjunct in each example is shown in bold, though in (19c), the second adjunct is underlined.

- (19) Word order with adverbial adjuncts

6.2 Verbal constructions

- a. *Óo Kawóoxohkare óti*
 oo ka-wV-o-xok=ka=re o-ti
 DEM.MID AGT-UNSP-PV.LOC-swallow=HAB=DEM.PROX PV.LOC-dwell
ó'roomako'sh.
 o'=oowąk=o'sh
 be=NARR=IND.M
 'It was this Swallower's house **there**.' (Hollow 1973a: 149)
- b. *Rétaaseena inák waheré waká'roomako'sh.*
 retaa=s=ee=rą irąk wa-hrE wa-ka'-ooWąk=o'sh
 be.another=DEF=DEM.DIST=TOP again UNSP-CAUS UNSP-possess=NARR=IND.M
 'The other one asked **again** for his food.' (Hollow 1973b: 93)
- c. *Háa áakitaa ó'harani máaheena ímaapetaa*
 haa aaki=taa o'#=hrE=rı wąqh=ee=rą i-wąqE=taa
 cloud above=LOC be#CAUS=ss arrow=DEM.DIST=TOP PV.DIR-down=LOC
húuroomako'sh.
 huu=ooWąk=o'sh
 come.here=NARR=IND.M
 'An arrow came **downward from heaven**.' (Hollow 1973a: 154)

It is not obvious which of these two locations is the true default for sentential adjunct placement, as Mandan makes frequent use of topicalization to shift elements to the front or back of a sentence to place increased levels of attention to such constituents. More information on topicalization appears in §6.2.5.

Overall, when Mandan speakers have been asked to produce sentences without any overt emphasis on any one element, the default word order will always be subject first and verb last. Direct objects will always precede the verb, while indirect objects or arguments of an applicative preverb will appear before the direct object but after the subject. Sentential adjuncts appear either sentence-intinally or after the subject. With respect to adjuncts, it is still unclear whether the position after the subject is the most neutral and the sentence-initial position is due to topicalization.

6.2.3 Negation

Negation in Mandan is unique within Siouan languages in that verbal negation requires two formatives to convey the proper semantics. As discussed previously in §4.1.2.5 and §4.3.4, Mandan negation is morphological realized by the joint appearance of the negative prefix *waa-* before the verb stem and a negative enclitic, *=xi* or *=nix* after the verb stem.

6 Syntax and clause structure

There is no change in word order due to verbal negation, given that negation involves inflectional morphology on the verb itself rather than a free word or particle somewhere else in the sentence for statements or questions. Nouns are treated as stative verbs when negated, so no copular constructions are required to negate them. We can instances of negation in the examples below with the negated verbs shown in bold.

- (20) a. *Némak* **wáahokinixo'sh.**
 re#wák waa-hok=rjx=o'sh
 DEM.PROX#POS.LIE NEG-story=NEG=IND.M
 'This is not a story.' (Trechter 2012b: 1)
- b. *Kó'ts* **wáahaxikereroomako'sh.**
 ko-at=s waa-hE=xí=krE=oowák=o'sh
 3POSS.PERS=father=DEF NEG-see=NEG=3PL=NARR=IND.M
 'They did not see their father.' (Hollow 1973a: 209)
- c. *Koníhka*, **wáá'eepes** **wáarakina'nixa'shka?**
 ko-rjx=ka waa-ee-pE=s waa-ra-kirá'=rjx=a'shka
 REL-be.small=HAB NOM-PV-say.1A=DEF NEG-2A-tell=NEG=PSBL
 'Dear, didn't you tell what I said?' (Hollow 1973b: 234)
- d. *Tashkák* **máamanarutinixo'sha?**
 tashka=k waa-w-rq-rut=rjx=o'sha
 how=DS NEG-1s-2A-eat=NEG=INT.M
 'Why don't you eat me?' (Hollow 1973b: 58)

The data thus far has been restricted to statements and questions because negation for imperatives functions differently in Mandan. Mandan is the only Siouan language to have a negative imperative particle, *káare*, that appears before the verb as a free word. Furthermore, this negative imperative particle is the sole morphological manifestation of negation in imperatives, as there is no *=nix* or *=xi* enclitics with commands. Generally, *káare* appears before the verb, but preceding direct objects. Mandan speakers appear to have some freedom with where *káare* can go in a sentence, as it can appear sentence-initially ahead of adjuncts like postpositional phrases or adverbials. It is not clear whether this flexibility is due to *káare* having a fixed position in a sentence and other words being clefted to different positions to the left edge of the sentence or if *káare* is likewise subject to topicalization by Mandan speakers. As is often the case, the lack of L1 speakers at this point in time has made this question more opaque. The negative imperative particle below has appears in bold to highlight the variability of its placement.

6.2 Verbal constructions

(21) Examples of negation of imperatives

- a. *Káare* *ú'shka* *ísekta!*
 kaare u'sh=ka i-sek=ta
 IMP.NEG be.thus=HAB PV.INS-make=IMP.M
 'Don't do such things!' (Treichter 2012b: 157)
- b. *U'shka* *káare* *ísekana!*
 u'sh=ka kaare i-sek=rä
 be.thus=HAB IMP.NEG PV.INS-make=IMP.F
 'Don't do such things!' (Treichter 2012b: 158)
- c. *Káare* *ótaamaharata,* *mishúuka!*
 kaare o-taa#wq-hrE=ta wj-shuuka
 IMP.NEG PV.LOC-be.facing#1s-CAUS=IMP.M 1POSS.younger.brother
 'Don't point it at me, brother!' (Hollow 1973a: 167)
- d. *Nitámaanuka'teet* *káare*
 rj-ta-waaruka=a't=ee=t kaare
 2POSS-AL-man's.friend=DEM.ANAP=DEM.DIST=LOC IMP.NEG
ótaamaharata!
 o-taa#wq-hrE=ta
 PV.LOC-be.facing#1s-CAUS=IMP.M
 'Don't face it towards your friend!' (Hollow 1973a: 167)
- e. *ahkó* *maná óshoté* *óhütaa* *káare*
 ahko wrä o-shot=E o-hü=taa kaare
 over.there wood PV.IRR-be.white=SV PV.IRR-many=LOC IMP.NEG
ráahinista!
 rEEh=rj=t=ta
 go.there=2PL=IMP.M
 'Don't go over there where there is a lot of white wood!' (Hollow 1973a: 168)
- f. *Káare* *xamáhashka* *ísijre* *wáarute*
 kaare xwäh-aska i-sij=E waa-rut=E
 IMP.NEG be.small-EMPH PV.POSS-fat=SV NOM-eat=SV
míkinista!
 wj=k=rj=t=ta
 be.none=2PL=IMP.M
 'Don't eat even a little bit of its fat!' (Hollow 1973b: 141)

6 Syntax and clause structure

- g. *Mashéhupe* **káare** *ínupha* *rústa!*
 wq-she#hüp=E kaare i-rüp#ha rut=ta
 UNSP-be.red#moccasin=SV IMP.NEG PV.ORD-two#times eat=TA
 'Don't eat cornmush a second time!' (Hollow 1973b: 176)

In each of the examples above, *káare* appears at various locations before the verb bearing an imperative allocutive marker, *=na* or *=ta*. The particle may appear sentence-initially, before the direct object or after the direct object. The one location where *káare* never appears is after the imperative, meaning that this item is not subject to right dislocation or postponing as a clarifying topic.

The above data deals with verbal negation. Another kind of negation that occurs in Mandan is one that affects nouns that I am calling existential negation. Existential negation is most accomplished through the use of the verb *mik* 'be none.' This verb is takes a noun as its complement, though these nouns are typically nominalized clauses. These nominalized clauses usually bear the nominalizer *waa-* and have the stem vowel *=e*. We can see instances of this treatment of nominal negation below.

(22) Examples of nominal negation

- a. *Wáa'eepe* **mikó'sh.**
 waa-ee-pE wík=o'sh
 NOM-PV-say.1A=SV be.none=IND.M
 'I said nothing.' (Hollow 1973a: 41)
- b. *Wáateehq* *nuhúqre* **mikóote'sh.**
 waa-teehq rü-hüq=E wík=ootE=o'sh
 NOM-be.far.away 1PL.POSS-mother=SV be.none=EVID=IND.M
 'Our mother clearly has not been around for a long time.' (Hollow 1973a: 145)
- c. *máanuhe* **mikó'sh**
 waa-rü-hE wík=o'sh
 NOM-1A.PL-see be.none=IND.M
 'we (du.) saw nothing' (Hollow 1973b: 186)
- d. *máanurutirishe* **miká**
 waa-rü-ru-trish=E wík=E=Ø
 NOM-1A.PL-INS.HAND-shake=SV be.none=SV=CONT
 'we could not budge them at all' (Hollow 1973a: 52)

In situations where a nominalized clause is used with the negative *mik*, there is a sense of exhaustiveness conveyed in the nominal negation versus the verbal

6.2 Verbal constructions

negation, which seems to convey a sense of discrete negation. For example, in (22d), the reading here is that not only were the characters expressing that they could not move the object, but there was simply no moving them in any way. Thus, nominal negation is often used in instances where a negative polarity item in English would be used: e.g., ‘nothing,’ ‘at all,’ etc.

6.2.4 Benefactive constructions

Most Mandan verbs are maximally transitive. That is, most verbs take no more than two arguments: a subject and a direct object. Some verbs, namely those that bear an applicative preverb, are able to project a third argument and some of those verbs are able to take an indirect object, more specifically. However, if a speaker wishes to add an indirect object to a sentence when the verb itself does not intrinsically take one, then an indirect object can only be inserted into the syntax by way of a benefactive construction. Benefactive constructions involve the use of the verb *kú* ‘give’ with a lexical verb. In such constructions, *kú* no longer has the semantics of ‘give,’ but serves to indicate that a third argument is being added to the syntax. These benefactive constructions rely on *kú* acting as an auxiliary verb. We can see several examples of benefactive constructions in the data below. We can see that instances of benefactive constructions that bear first or second person subject marking do so on both the main verb and the auxiliary, while the indirect object is only marked on the auxiliary.

(23) Examples of benefactive constructions

- a. *wóorut* *kéeka’ kú’kereroomako’sh*
wV-o-rut *keeka’ ku’=krE=oowąk=o’sh*
UNSP-PV.IRR-eat *keep* *give=3PL=NARR=IND.M*
‘they kept food for him’ (Hollow 1973a: 109)
- b. *Miníke*, *Páqhi’ Pa, kihké’roo* *makú’ro’sh.*
wi-rík=E *páqhi’ pa* *kihké’=oo* *wą-kú’=o’sh*
1POSS-son=sv *porcupine* *head* *dig.up=DEM.MID* *1s-give=IND.M*
‘My son, Porcupine Head, dug them up for me.’ (Hollow 1973a: 55)
- c. *U’shka* *wahará minikú’kto’sh.*
u’sh=ka *wa-hrE* *w-rj-kú’=kt=o’sh*
be.thus=HAB *1A-CAUS* *1A-2s-give=POT=IND.M*
‘I will do it that way for you.’ (Hollow 1973a: 138)

6 Syntax and clause structure

- d. *Mató Psi téehere rokú'roomako'sh.*
 wətɔ̄ psi tee#hrE ro-kú'=oowək=o'sh
 bear be.black die#CAUS 1s.PL-give=NARR=IND.M
 'He killed Black Bear for us.' (Hollow 1973b: 160)

One peculiarity in the benefactive constructions seen in the corpus is that nearly half of all instances of benefactive constructions with a third person plural benefactive recipient do not use *kú'* as an auxiliary. Instead, those third person plural benefactive recipients employ *káhere* instead. It is possible that there was once a more regularized conjugation where singular arguments took one benefactive auxiliary, while plural ones took another. We see that Hidatsa features a remarkably similar split between singular and plural recipients. The language attrition that took place after the smallpox epidemics in the early 1800s killed most L1 speakers could have caused a once-productive feature of the grammar to become regularized by subsequent speakers.²

(24) Examples of third person plural benefactive constructions

- a. *míihere ré wóó'ipke*
 wíjh=re re wV-o-i-pke
 woman=DEM.PROX DEM.PROX UNSP-PV.IRR-PV.INS-taste
ókjhara káharani...
 o-ki#hrE=∅ ka#hrE=r̄i
 PV.LOC-be.cooking#CAUS=CONT PROV#CAUS=SS
 'this woman here made dried meat for them and...' (Hollow 1973a: 204)
- b. *numá'kseena manáktetaa í'aakanake*
 ruwá'k=s=ee=r̄a wrakte=taa i-aaki#r̄ak=E
 man=DEF=DEM.DIST=TOP altar=LOC PV.DIR-above#POS.SIT=SV
réehara káhereroomako'sh
 rEh#hrE=∅ ka#hrE=oowək=o'sh
 go.there#CAUS PROV#CAUS=NARR=IND.M
 'the man put a sitting place at the altar for them' (Hollow 1973b: 174)

²Park (2012: 541) describes benefactive constructions in Hidatsa, where *gú'* 'give,' a clear cognate with Mandan *kú'*, is used when the benefactive entity is singular. There is a suppletive plural benefactive form *gahée* in Hidatsa, which itself also appears to be a clear cognate with Mandan *káhere*, given that the *hée* in Hidatsa is the direct causative and *heré* is the Mandan causative. The *ga-* element in Hidatsa does not appear to have any synchronic place in the lexicon as a formative on its own, but *ká* in Mandan is used as a pro-verb that serves to connect one sentence to the preceding one, as we see in *káni* 'and then.'

6.2 Verbal constructions

- c. *rushínashhqq* *kijka* *káharata!*
 ru-shi=rash=häq kijk=E=Ø ka#hrE=ta
 INS.HAND-be.good=ATT=INS finish=SV=Ø PROV#CAUS=IMP.M
 'let it be completed perfectly for them!' (Trechter 2012a: 262)

All Mandan speakers in the twentieth and twenty-first centuries were also fluent Hidatsa speakers, and the fact that Hidatsa also features cognate stems for singular versus plural benefactive recipients makes it difficult to assert whether this similarity is an inherited feature of these languages or caused by language contact. Hidatsa's closest relative, Crow, does not feature different auxiliary stems for benefactive constructions (Graczyk 2007: 145). Therefore, the origin of this singular versus plural recipient stem for benefactives remains up for debate.

6.2.5 Topicalization

A pervasive syntactic process in Mandan is the heavy use of topicalization to emphasize some nominal element. Topicalization involves moving a nominal construction from its default position to either the beginning of the sentence or end of the sentence. Furthermore, Mandan frequently appeals to left dislocation and right dislocation, where some nominal element within the clause is reiterated or made more explicit at an edge of the utterance. The most common tactic of putting emphasis on a nominal construction in Mandan involves moving an element to the leftmost position within a sentence: i.e., topicalization.

As discussed previously in §5.7.3, all semantic roles that a nominal element can play in a proposition can be morphologically marked as a topic with either *=na* or *=nu*. However, not all elements marked with topic morphology are topicalized. Nominal constructions that are not subjects but appear sentence-initially are able to appear there because these non-subjects are topicalized. It is likely that subjects can also be topicalized, as Kasak (2022) points out that there are different intonational patterns for topicalized elements versus focused elements in spoken Mandan, but an extensive survey of Mandan intonation patterns has not been conducted and is outside the scope of the present work.

Examples of topicalized structures appear in the data below, where the initial element has been preposed at the beginning of the sentence, outside the typical word order that has been described above in §6.2.2. In (25c), we see a *wh*-word topicalized: *tewéteroo* 'where around here.' The subject–object–word order does not change in Mandan; statements and questions all employ this default word order. Likewise, unlike languages like English, *wh*-words are not topicalized in

6 Syntax and clause structure

Mandan. All question words appear canonically *in situ* within the syntax. In (25c), the default expected position of the *wh*-word is after the subject, *ptamáah tóops* ‘my four arrows.’ However, given that the speaker is highlighting the topicality of the question over the subject, the *wh*-word appears in sentence-initial position.

The examples in (25a) and (25b) are more obvious in how they flout standard word order. In (25a), for instance, this sentence involves a direct object that precedes all other adjunct material that would normally appear either before or after a subject. The direct object should appear immediately before the verb, yet in this example, it is the first element in the entire sentence. This irregular word order can only be due to topicalization. Likewise, in (25b), the indirect object appears in sentence-initial position. The adjunct element *tashkák* ‘how’ should appear before the indirect object, since it should either precede or follow where the subject normally appears. The absence of an overt subject should render this word sentence-initial, but that is not what we see here. Instead, the topicalized indirect object appears in sentence-initial position.

(25) Examples of topicalized elements

a. Direct object

<i>Tawáarukiriihere</i>	<i>róo</i>	<i>hú'taa</i>
ta-waa-ru-kriih#hrE	roo	hu'=taa
AL-NOM-INS.HAND-be.smooth#CAUS	DEM.MID	be.near=LOC
<i>wá'pqoomako'sh</i>		
wa'-pax=oowąk=o'sh		
INS.PRCE-be.upright=NARR=IND.M		

‘His staff he stood up here by him.’ (Hollow 1973a: 1)

b. Indirect object

<i>Numá'kaaki tashkák</i>	<i>wá'a'qqwe rakú'kina'ka'na?</i>
ruwą'k-aaki	waa-aqwe ra-ku'#kira'=ka=o'rą
person-COLL	NOM-all 2A-give#tell=HAB=INT.F
‘To people why do you always tell everything?’ (Hollow 1973a: 213)	

c. Location

<i>Tewéteroo</i>	<i>ptamáah</i>	<i>tóops</i>	<i>ó'ro'sha?</i>
t-we=t=roo	p-ta-wąh	toop=s	o'=o'sha
WH-INDF=LOC=DEM.MID	1SG.POSS-AL-arrow	four=DEF	be=INT.M
‘Where around here are my four arrows?’ (Hollow 1973a: 33)			

Another common manifestation of emphasizing some topic in Mandan goes beyond just encliticizing *=na* or *=nu* onto a nominal construction. The fact that

6.2 Verbal constructions

Mandan speakers often omit most—if not all—explicit nominal constructions when speaking in the narrative means that listeners are forced to either infer what nominal elements the speaker is referring to or to recall what arguments have already been introduced into the discourse. Thus, mentioning an overt argument can confer great importance onto said nominal construction. When mentioning an overt argument that is also a topic that the speaker wishes to emphasize, a Mandan speaker often does so through dislocation of some kind.

A left dislocation introduces an argument at the left edge of the sentence that is present elsewhere in the sentence. In many instances, it is difficult to distinguish left dislocation from topicalization in Mandan due to the fact that overt nominals are often omitted. Therefore, it is unclear whether the element appearing at the left edge of the sentence is merely being topicalized or if there is a more covert left dislocation present, where a nominal in the sentence is being omitted but is still present in the syntax in and referenced by the left dislocated element. We can see an obvious instance of left dislocation in example (26) below, where the distal demonstrative *ée* is the subject of the verb, while the more elaborate nominal construction *kowóoroo xíkanashs* ‘that no-good husband of hers’ is a constituent at the left edge of the sentence that is the same entity as *ée* ‘he, that one.’

(26) Example of left dislocation

<i>Kowóoroo</i>	<i>xíkanashs, ée</i>	<i>wáa'o'nix ishí're.</i>
ko-wooroo	xik=rash=s ee	waa-o'-rix ishi=o're

3POSS.PERS-husband DEM.DIST NEG-be=NEG VIS=IND.F

‘That no-good husband of hers, it must not be him.’ (Hollow 1973a: 134)

Right dislocation in Mandan is just as pervasive in the corpus as left dislocation, where an argument is brought up in a clause, only to have some elaborating or clarifying element added to the end of the clause that refers back to an established argument. Given that Mandan is a topic-prominent language, deviations from the standard subject–object–verb word order do not affect the illocutionary force of a statement, as we see in languages like English: e.g., ‘They have gone home’ is a statement versus ‘Have they gone home?’ is a question, where the same syntactic elements are reordered to encode for illocutionary force. Instead, Mandan word order is altered by the weight of topic-driven pragmatics. Placing a right dislocated nominal at the end of a sentence serves to reinforce who or what the speaker wishes to emphasize.

We see an example of right dislocation in the data below in (27), where the right dislocation is an entire postpositional phrase. In the main clause, the postpositional phrase *óo ó'harani* ‘from there’ provides the origin of buffalo. The speaker

6 Syntax and clause structure

adds the right dislocated postpositional phrase *máa'qk kú'sht ó'harani* ‘from underneath the earth’ to expound upon the nominal element that is already present in the syntax. The right dislocated phrase appears in bold, while the constituent in the main clause that it is referencing is underlined.

(27) Example of right dislocation

<i>oo</i>	<i>ó'harani</i>	<i>ptíjtkushkeres</i>	<i>qqwe súhkereroomako'sh,</i>
<i>oo</i>	<i>o'hrE=rj</i>	<i>ptíjtkush=krE=s</i>	<i>aqwe suk=krE=oowák=o'sh</i>
DEM.MID	be#CAUS=ss	buffalo#be.true=3PL=DEF	all exit=3PL=NARR=IND.M
<i>máa'qk kú'sht</i>	<i>ó'harani</i>		
waa'qk	ku'sh=t	<i>o'hrE=rj</i>	
earth	inside=LOC	be#CAUS=ss	

‘From there, all the buffalo came from there, from underneath the earth.’
(Hollow 1973b: 114)

Multiple nominal entities can be topicalized and dislocated in Mandan. Topicalization and dislocation as syntactic processes do not always overlap with the use of topic-marking morphology like *=na* and *=nu*, but there are instances where the speaker wishes to highlight the importance of some element and it is both topicalized and dislocated. In the example in (28) below, the subject of the matrix verb *íko'tseena* ‘that father of hers’ is represented as topicalized with the topic marker *=na*, but also as the right dislocated *kó'tseena* ‘her father’ at the end of the sentence.

(28) Topicalized subject and right dislocated subject

<i>íko'tseena</i>		<i>“mí'shak,</i>
<i>i-ko-at=s=ee=ra</i>		<i>w̄-ishak</i>
PV.POSS-3POSS.PERS-father=DEF=DEM.DIST=TOP	1POSS-pro	
<i>maní'o'na</i>	<i>q'skarahara'shka</i>	<i>éewaharani minikímaxani,”</i>
<i>wa-rj-o'=ra</i>	<i>q'ska#ra-hrE=q'shka</i>	<i>ee-wa-hrE=rj w-rj-kiwaxE=rj</i>
UNSP-2s-be=TOP	be.that.way#2A-CAUS=PSBL	PV-1A-CAUS=ss 1A-2s-ask=ss
<i>éeheeroomako'sh,</i>	<i>kó'tseena</i>	
<i>ee-hEE=oowák=o'sh</i>	<i>ko-at=s=ee=ra</i>	
PV-say=NARR=IND.M	3POSS.PERS-father=DEF=DEM.DIST=TOP	
‘that father of hers said, “me, I thought that you were the one who maybe did something so I asked you,’ her father did.’ (Hollow 1973b: 238)		

Obvious examples of double cleft constructions like topicalization or dislocation are not common in the corpus, but they do occur. It is especially likely to occur when a speaker is using a direct quote or speaking freely instead of speaking as the narrator of a traditional narrative.

6.2 Verbal constructions

6.2.6 Illocutionary force and allocutive agreement

Word order in Mandan is subject–object–verb as a default, but the syntax can be flexible to take the topicality of an element into account. In Mandan, word order does not convey any aspect of the intention of the utterance. The ordering of words is the same in a statement, a question, or a command for Mandan speakers.

Instead of encoding the illocutionary force of a speech act through the syntax, Mandan instead encodes the intent of the speaker through allocutive agreement markers. These markers were previously discussed in §4.3.5.1, but are reproduced in Table 6.3 below.

Table 6.3: Mandan allocutive agreement markers

	Indicative	Interrogative	Imperative
Male	=o'sh	=o'sha	=ta
Female/Non-male	=o're	=o'na	=na

These allocutive agreement markers are exclusively found on the matrix verb within an utterance. Mandan is similar to most other Siouan languages in this respect, as Lakota (Trechter 1995), Biloxi (Dorsey & Swanton 1912), Chiwere (Greer 2016), *inter alios* all feature allocutive agreement markers on matrix verbs. Mandan does differ from other Siouan languages, though, in that the Mandan language exclusively marks allocutive agreement with the gender of the addressee; the gender of the speaker is not reflected in this kind of utterance-level morphology. We can see examples of different allocutive agreement markers below and notice that word order is unaffected by the illocutionary intent of the speaker. The only major change between the three examples in (29) is the allocutive agreement marker at the end of the sentence.

(29) Examples of consistent word order

a. Statements

<i>Súks</i>	<i>weréhe</i>	<i>pataráko'sh</i>	~ <i>pataráko're.</i>
suk=s	wreh=E	pa-trak=o'sh	pa-trak=o're
child=DEF door=SV INS.FRCE-shut=IND.M INS.FRCE-shut=IND.F			
'The child shut the door.'			

b. Questions

<i>Súks</i>	<i>weréhe</i>	<i>pataráko'sha</i>	~ <i>pataráko'na?</i>
suk=s	wreh=E	pa-trak=o'sha	pa-trak=o'ra
child=DEF door=SV INS.FRCE-shut=INT.M INS.FRCE-shut=INT.F			
'Did the child shut the door?'			

6 Syntax and clause structure

c. Commands

<i>Súke, weréhe patarákta</i>	<i>~ patarákana!</i>
<i>suk=E wre=E pa-trak=ta</i>	<i>pa-trak=rä</i>
<i>child=sv door=SV INS.FRCE-shut=IMP.M</i>	<i>INS.FRCE-shut=IMP.F</i>
'Child, shut the door!'	

Deviations from this subject–object–verb word order are explicitly due to the speaker wishing to affect the information structure of a given utterance. Topicalization or dislocation are frequent reasons for not adhering to the default word order, and it should be assumed that sentences whose word order falls outside this norm have divergent word orders due to these two processes, as described in §6.2.5.

6.3 Multiclausal structures

Carmody & Kasak (2023) find that even short narratives in Mandan typically involve sentences with more than three clauses. The corpus is dominated by multiclausal structures, and it is not uncommon for a single sentence to contain ten or more clauses before reaching the matrix verb. A complete sentence in Mandan must have an allocutive agreement marker to signal to the listener that the utterance is finished, but there are a variety of other constructions that can appear in a Mandan sentence before reaching the end of the utterance.

6.3.1 Switch-reference

One of the most prolific interclausal structures in Mandan is that of switch-reference. Switch-reference is a system whereby there is some formative that serves to signal that the subject of one clause either shares or has a different subject than an adjacent clause (Haiman & Munro 1983: ix).³ Mandan is not unique in Siouan in having a system of switch-reference, as it has been described at length in Hidatsa (Boyle 2007, 2011), Crow (Graczyk 2007), and Biloxi (Graczyk 1997, Torres 2010).

Kasak (2019) describes the distribution of switch-reference markers in Mandan, and has done so here in §4.3.5.2. There are two switch-reference markers that are identified herein:

³This definition holds for canonical switch-reference, versus non-canonical switch-reference, which marks clauses as having some kind of topic pivot or not. I assume that switch-reference in Mandan is canonical, due to the extreme predictability of these formatives tracking the subject of each clause.

6.3 Multiclausal structures

(30) Switch-reference markers in Mandan

- =*ak* /=*ak*/ different-subject switch-reference marker
 =*ni* /=*ri*/ same-subject switch-reference marker

Switch-reference markers are commonly translated as conjunctions like ‘and’ into English by Mandan speakers throughout the corpus. Kasak (2019) argues that these structures are not actually instances of coordination, however, but are clausal adjuncts. The primary motivation behind this analysis is that true coordination would mean that verbs with switch-reference marking should have a full range of number, aspect, mood, and evidentiality enclitics, but we only see such enclitics on the matrix verb of a sentence featuring a verb with switch-reference marking. Thus, verbs marked with switch-reference are inflectionally impoverished and are not finite verbs in the way that matrix verbs are.

Verbs with switch-reference marking will maximally carry subject and object prefixes, but will not have any corresponding number or other agreement enclitics. We can see examples of same-subject switch-reference constructions below with the clauses marked for switch-reference shown in bold, but different-subject switch-reference constructions are underlined. In (31a) and (31b), the same subject is engaging in all the actions that are part of the sentence, which means that all such non-matrix verbs end in =*ni*. Conversely, in (31c), each clause has a different subject than the one proceeding it. To make the translations easier to follow in terms of coindexation, subscript letters appear next to the subject in question to ensure that the motivation for switching to the different-subject switch-reference marker =*ak* is needed.

(31) Examples of same-subject switch-reference

- a. *Miní kihíjini ptíj koníhkas pakanqhini*
 wr̩j ki-híj=r̩j ptíj ko-rík=ka=s pa-kr̩h=r̩j
 water SUUS-drink=ss buffalo REL-be.little=HAB=DEF INS.PUSH-butcher=ss
kirútini náakeroomako'sh.
 ki-rut=r̩j r̩aqkE=oowaqk=o'sh
 SUUS-eat=ss sit.AUX=NARR=IND.M
 ‘He_i sat down and [he_i] drank the water, [he_i] butchered the calf, and [he_i] ate it.’ (Hollow 1973a: 212)
- b. *Numá'k Máxana úupani, ípashahqkt ráaha,*
 ruwá'k wáxrá úupá=r̩j i-pasha#hák=t rEEh=E=Ø
 man one with=ss PV.DIR-north#POS.STND=LOC go.there=sv=CONT

6 Syntax and clause structure

<i>minikere, miníxuxtekere</i>	<i>ísekini</i>	<i>íkų’hqq</i>
wrj=krE	wrj#xuu-xtE=krE	i-sek=rj
water=3PL	water#be.shallow-AUG=3PL	PV.INS-make=ss
		PV.DIR-be.yonder=INS
<i>ísekoomaksjh</i>		
i-sek=oowąk=sjh		
PV.INS-make=NARR=INTS		

‘Lone Man_i was with him and, going to the north, he_i made lakes, large shallow lakes, and he_i made it all over.’ (Hollow 1973a: 11)

- c. *Míihs ratónoniitek, téehj kú'hs*
 wíjh=s ratoo=ríjtE=ak teehj k'-uqh=s
 woman=DEF be.old=CEL=DS so.then 3POSS.PERS-wife=DEF
koxamáhs wáaka're pkaminíshak,
 ko-xwáh=s waa-ka'=E k-pa-wrísh=ak
 REL-be.small=DEF NOM-possess=SV SUUS-INS.PUSH-be.folded.up=DS
wáá'oka're óksuuherék, ptáqrak qáwe
 waa-o-ka'=E o-k-suu#hrE=ak ptáq=ak qáwe
 NOM-PV.IRR-possess=SV PV.LOC-SUUS-be.filled#CAUS=DEF fall=DS all
xkáhkereroomako'sh.
xkáh=krE=oowák=o'sh
 move=3PL=NARR=IND.M

‘The woman_i was a bit older, so then the younger wife_j packed her belongings, she_i put her belongings in there, and fall_k came, then they_{i+j} all moved.’ (Trechter 2012b: 13)

- d. *Manároo* *mashkáshkapkas* *rúta* *hqáqka*
wṛä=oo wä-shka~shkap=ka=s rut=E hqäkE=Ø
tree=DEM.MID UNSP-AUG-prick=HAB=DEF eat=SV=CONT stand.AUX=CONT
éexohiharani *réehak* *úyshé* *shirúurak*
eexi#o-hi#hrE=rj rEEh=ak úysh=E shruu=ak
belly#PV.LOC-be.full#CAUS=ss go.there=DS anus=SV be.itchy=DS
kirúkaxa *háhka'sh.*
ki-ru-kax=E hqäk=ka=o'sh
SUUS-INS.HAND-scratch=SV POS.STND=HAB=IND.M
‘In the woods, he_i was eating tomatoes, [he_i was] filling his belly and as
he_i went along, his anus_j itched, so he_i keep on scratching it.’ (Hollow
1973a: 14)

6.3 Multiclausal structures

- e. *Óshikerek* *kawéhini* *waki're*
 o-shi=krE=ak ka-weh=rj wa-ki'=E
 PV.IRR-be.good=3PL=DS INS.FRCE-pick=ss UNSP-pack.on.back=sv
kaskék *xtéxteroomako'sh*.
 ka-skE=ak xtE-xtE=oowąk=o'sh
 INS.FRCE-tie=ss be.big-AUG=NARR=IND.M
 'They_i were good, so he_j picked them up and he_j tied them in packs,
 then it_k [the bunch of packs] was really big.' (Hollow 1973a: 216)

We can see in (31d) and (31e) above that a subject change warrants a change in switch-reference marking. For example, in (31d), we see that an unspoken person is the subject of the first three clauses. The actions of standing there eating, filling his belly, and going along were all done by the same subject. After that first subject begins to go along, the subject of the next clause changes to a body part, which starts to itch. The following clause is the first subject itching himself, so different-subject marking on *shirúurak* 'it is itchy' is required to indicate that the body part in question is no longer the subject.

Semantically, switch-reference in Mandan plays a major role in expressing that there is a connection between two clauses. Switch-reference can indicate that clauses are either contemporaneous or sequential, coordinated or disjoined. Context is key in understanding what the relationship is between a clause bearing switch-reference marking and the following clause. This flexibility in meaning makes switch-reference the most frequent means of expressing an interclausal relationship in the language.

6.3.2 Serial verb constructions

Despite the frequency of switch-reference in the corpus, not all interclausal relationships are expressed through switch-reference. Verb serialization in Mandan involves a sequence of two or more verbs within a clause that are treated as a single event. Such events serve as a singular predicate (Aikhenvald 2018).

Due to the fact that such constructions are part of a single event, they must all necessarily share the same subject. These serial verb constructions also signify a contemporaneous act or state with the other serialized verbs. Serial verb constructions trigger ablaut in the final vowel where applicable. Consonant-final stems often bear a stem vowel to make it clear that the verb is part of a serial verb construction. Stems that end in a long vowel or a consonant will take the stem vowel /'=E/, whereupon ablaut can take place and signify that a verb is part of a serial verb construction. Vowel-final stems that do not end in /E/ or /EE/ are

6 Syntax and clause structure

less obviously part of serial verb constructions, because the addition of /=E/ is deleted by the phonotactic constraint against placing two short vowels next to each other in the post-verbal field, as previously discussed in §3.6.1.3. Most typically, serial verbs constructions appear as a dyad, but there is no practical limit to the number of verbs that can be serialized.

We can see examples of serial verb constructions in the data below, where serialized verbs are shown in bold.

(32) Examples of serial verb constructions

- a. *tawáarukirihihs* *kahóora*
 ta-waa-ru-kriih=s ka-hoo=E=∅
 AL-NOM-INS.HAND-be.smooth=DEF INS.FRCE-fall.down=sv=CONT
ráahini *nákak...*
 rEEh=rj rák=ak
 go.there=ss POS.SIT=DS
 'his staff went **dropping down** and it sat there...' (Hollow 1973a: 1)
- b. *wiróke* *koratitaahqq* *óraraxi*
 wi-rok=E ko-rati=taa=häq o-ra-ra-xi=∅
 1Poss-leg=sv REL-right.side=LOC=INS PV.IRR-2A-INS.FOOT-kick=CONT
írakü'kto'sh
 i-ra-kü'=kt=o'sh
 PV.INS-2A-give=POT=IND.M
 'you will pretend **to kick** my leg on the right side' (Hollow 1973b: 62)
- c. *máareksuks* *máaskaps* *rúta*
 wäareksuk=s wäq-skap=s rut=E=∅
 bird=DEF NOM-be.wet=DEF eat=sv=CONT
óshapoomako'sh
 o-shap=oowäk=o'sh
 PV.LOC-be.lively=NARR=IND.M
 'the bird was rapidly **eating** the meat' (Hollow 1973a: 132)
- d. *Óo* *ó'harani* *wará'taxa*
 oo o'#hrE=rj wa-ra'-tax=E=∅
 DEM.MID be#CAUS=ss UNSP-INS.MTH-make.loud.noise=sv=CONT
téroomako'sh.
 tE=oowäk=o'sh
 stand=NARR=IND.M
 'After that, he stood there **crying**.' (Hollow 1970: 270)

6.3 Multiclausal structures

Mandan can often encode the same meaning using either a serial verb construction or a switch-reference construction.

- (33) Example of switch-reference and serial verbal construction with the same meaning

- a. *wawárutani manáake'sh*
 wa-wa-rutE=r̩i wa-rąqkE=o'sh
 UNSP-1A-eat=ss 1A-sit.POS.AUX=IND.M
 'I sat there eating.'
- b. *wawáruta manáake'sh*
 wa-wa-rutE=∅ wa-rąqkE=o'sh
 UNSP-1A-eat=CONT 1A-sit.POS.AUX=IND.M
 'I sat there eating.'

Mandan seems to share this characteristic with Hidatsa, where a serial verb construction and a same-subject switch-reference construction can be used interchangeably to express the same concept (Park 2012: 541). The prolific bilingualism of Mandan speakers over the past two hundred years has blurred whether this grammatical similarity between Mandan and Hidatsa is due to language contact or an inherited grammatical construction from an ancestor language. Furthermore, if language contact is the cause of this shared feature, it is not obvious if it originated in Mandan and spread to Hidatsa or if Hidatsa was the origin and it then spread to Mandan. It origin aside, it is not clear if this similarity with Hidatsa is actually superficial and these constructions are actually distinct. It is possible that there is a register difference or if the semantics or pragmatics are distinct enough to encode for a slightly different situation in a construction like (33a) versus one in (33b).

6.3.3 Auxiliary verb constructions

Benefactive constructions are special kind of auxiliary verb construction. The purpose of benefactives is to add an argument to a proposition. The other auxiliary verb constructions serve to provide aspectual semantics to a proposition. Specifically, Mandan makes frequent use of auxiliaries to convey progressive aspect or habitual aspect.

These auxiliaries were previously discussed in §3.5.3.2, where they all collectively cause syntactically conditioned ablaut in the lexical verb. The list of auxiliaries is reproduced below:

6 Syntax and clause structure

(34) Ablaut-triggering auxiliary verbs

/háqkE/	<i>háqke</i>	'standing' positional auxiliary verb
/rąqkE/	<i>náake</i>	'sitting' positional auxiliary verb
/rąqkah/	<i>náakah</i>	'sitting' habitual auxiliary verb
/ruurj/	<i>núunih</i>	plural durational auxiliary verb
/wąqkE/	<i>máake</i>	'lying' positional auxiliary verb
/wąqkah/	<i>máakah</i>	'lying' habitual auxiliary verb

The list of auxiliaries above are mostly derived from positionals, as previously discussed in §5.7.2.3. The diversity in the morphological realization of positionals can cause some confusion, given that many of the texts in the corpus do not distinguish between vowel length. Positional determiners are those with short vowels, and they are reduced versions of these lexical positional verbs. The morphological split reflects the semantic split that occurred at an earlier stage of language development in Pre-Mandan, where the Proto-Siouan *wúq-kE 'lie,' *rąq-kE 'sit,' and *háq-kE 'stand' underwent semantic bifurcation, where the literal, lexical semantics of 'lie,' 'sit,' and 'stand' remained in Mandan, but there was also a shift to a more existential reading for all three verbs. This existential reading became associated with habitual or progressive acts, and as such, another semantic bifurcation took place: i.e., the creation of periphrastic aspect marking through the use of an auxiliary verb.

The positional auxiliaries *háqke*, *máake*, and *náake* can all be used to express an existential proposition. However, these existential meanings still have a progressive aspectual reading: i.e., these positionals are intrinsically progressive, while *hák*, *mák*, and *nák* have non-specific aspect marking. While both *hák* and *háqke* mean 'stand,' the former is used to express a discrete action, while the latter is used to express an activity that was in progress or that took place over a period of time. We can see examples of this existential use of these auxiliaries below.

(35) Examples of the existential use of positional auxiliaries

- a. *Nákani rá'hashoomako'sh.*
rąqkE=rj *ra'-hash=oowąk=o'sh*
sit.POS.AUX=SS INS.HEAT-be.disintegrated=NARR=IND.M
'He was [sitting] there and he burned it up.' (Hollow 1973b: 182)
- b. *kohúyre wóorut ísekini*
ko-húq=E wV-o-rut i-sek=rj
3POSS.PERS-mother=SV UNSP-PV.IRR-eat PV.INS-make=ss

6.3 Multiclausal structures

- máakeki*, *kí'hoomako'sh*
 wąqkE=ki ki'h=oowąk=o'sh
 lie.POS.AUX=COND arrive.back.there=NARR=IND.M
 'he got back when his mother was [lying] there and she was making dinner' (Hollow 1973a: 67)
- c. *Háqkenashki*, *máxanana "ómiko'sh.*
 hąqkE=rąsh=ki wąxrą=rą o-wík=o'sh
 stand.POS.AUX=ATT=COND one=TOP PV.IRR-be.none=IND.M
Wáahynash *téereherenashini*
 waa-hü=rąsh tee#re-hrE=rąsh=rí
 NOM-many=ATT die#2A-CAUS=ATT=SS
wá'a'orahqakhaxi'sh."
 waa-o-ra-hąqk=ka=xi=o'sh
 NEG-PV.IRR-2A-not.know=HAB=NEG=IND.M
 'When he was [standing] there, one of them was like, "I don't think so. You aren't capable of killing that many.'" (Trechter 2012b: 7)

When these positional auxiliaries are used in conjunction with another verb, they result in a progressive reading of the proposition. As previously stated, these constructions trigger ablaut in the final vowel of the lexical verb. If the verb stem ends in a short vowel, no ablaut occurs due to the fact that only /E/ and /EE/ can undergo ablaut. Furthermore, if we assume that a stem vowel /E/ is encliticized onto the stem, hiatus resolution rules will delete the second short vowel in a sequent of two short vowels, eliminating the /E/ and preserving the final short vowel of the stem. Therefore, ablaut most often occurs when the stem ends in a consonant or a long vowel, which allows the /E/ to manifest without syncope and be subject to ablaut.

In (36), we see that the verb immediately preceding the positional auxiliary gets progressive aspect. However, this auxiliary is able to take scope over multiple predicates, as we see in (36b), where the positional auxiliary *háqka* bestows progressive aspect not only on the immediately preceding *sí* 'travel,' but also on *íxatanashini* 'look over' in the previous clause. Thus, in same-subject switch-reference constructions, multiple verbs can receive progressive aspectual semantics through this construction. The overwhelming majority of instances of positional auxiliaries being used in the corpus involve a single verb, however.

We can see further examples of these progressive constructions with positional auxiliaries in the data below in (36). The elements that bear progressive semantics are marked in bold.

6 Syntax and clause structure

(36) Examples of progressive constructions with positional auxiliaries

- a. *máareksuks katq̄hini rutá náakek*
 wáq̄areksuk=s ka-tq̄ah=r̄i rutE r̄aq̄kE=ak
 bird=DEF INS.FRCE-pound=ss eat sit.POS.AUX=DS
 'he pounded the birds and was there eating' (Hollow 1973a: 146)
- b. *máa'qk úypat íxatanashini sí h̄aq̄ka*
 waa'qk úypat i-xat=r̄ash=r̄i si h̄aq̄kE=∅
 land be.different PV.DIR-look.at=ATT=ss travel stand.POS.AUX=CONT
inák kúhoomaksjh
 iraq̄ kuh=oowaq̄k=o'sh
 again come.back.here=NARR=IND.M
 'he was looking over different lands and traveling around, and then he
 came back again' (Hollow 1973a: 8)
- c. *Káare rá'taxa h̄aq̄kata!*
 kaare ra'-tax=E h̄aq̄kE=ta
 IMP.NEG INS.HEAT-make.loud.noise=sv stand.POS.AUX=IMP.M
 'Don't be crying!' (Hollow 1973b: 322)
- d. *Káni míhs wíihara náakeroomako'sh.*
 ka=r̄i wíih=s wV-i-hrE r̄aq̄kE=oowaq̄k=o'sh
 PROV=SS woman=DEF NOM-PV.INS-CAUS sit.POS.AUX=NARR=IND.M
 'And then, the woman was doing quillwork.' (Hollow 1973b: 46)

There is a variant on these positional auxiliaries that carries habitual aspectual semantics: i.e., *h̄aq̄kah*, *máakah*, and *náakah*. These auxiliaries appear to be derived from the base positional verbs, and the final /E/ in each has undergone ablaut with the addition of some formative that begins with /h/. Generally, when a Mandan verb ends with /h/, it is because that /h/ is a reflex of the Proto-Siouan stem augment *-hE. It is not clear if this /h/ is historically linked to this stem augment, or if it is tied to the simultaneous aspectual enclitic /=h̄aq̄/, which is an ablaut-triggering enclitic. The synchronic manifestation of habitual aspect marking in Mandan is /=ka/, which does not trigger ablaut, so we are left with the mystery of whether the additional morphology that is present in these habitual positional auxiliaries are a reflex of an older system from Pre-Mandan or even Proto-Siouan, or if they are innovations that developed after the proliferation of /=ka/ as the habitual aspect marker. These verbs maintain the progressive aspectual semantics of the base auxiliary with the added semantics of these activities being habitual.

6.3 Multiclausal structures

We can see examples of these constructions below. Like the simple progressive constructions above, we can see examples of these habitual positional auxiliaries being used in situations where multiple verbs receive aspectual semantics from the same auxiliary, such as in (37b). Such constructions are rare in the corpus, but they clearly do occur. Within the corpus, there are no attested examples of an analogous *háqkah* form of *háqke*. It is not clear whether such a form exists but is uncommon, or if there is a gap in this paradigm. It is worth noting that *háqke* is less common overall than either *máake* and *náake* in the corpus, and the habitual forms are even more exceptional.

(37) Examples of habitual positional auxiliaries

- a. *Kará'taxa* *náakaha* *inák*
 ka-ra'-tax=E rąqkah=E=Ø irąk
 INS.FRCE-INS.HEAT-make.loud.noise=SV sit.POS.AUX.HAB=SV=CONT again
koshúykas *húuroomako'sh.*
 ko-shuŋka=s huu=oowąk=o'sh
 3POSS.PERS-younger.brother=DEF come.here=NARR=IND.M
 'He was there crying, so his younger brother came again.' (Hollow 1973b: 221)

b. *Ó* *ó'harani* *wóo'ipkekères* *áqwe*
 oo o'#hrE=rı wV-o-i-pke=krE=s aqwe
 DEM.MID be#CAUS=SS NOM-PV.IRR-PV.INS-taste=3PL=DEF all
xamáhana *rupáaxini* *ú'shkahara*
 xwąh=rą ru-paax=rı ú'sh=ka#hrE
 be.small=TOP INS.HAND-be.broken=ss be.thus=HAB#CAUS
máakahini *áqwe rushínashhqa*
 wąqkah=rı aqwe ru-shi=rąsh=hąq
 lie.POS.AUX.HAB=SS all INS.HAND-be.good=ATT=INS
kí'kereroomako'sh.
 kí'k=krE=oowąk=o'sh
 finish=3PL=NARR=IND.M
 'From there, he kept doing it that way and breaking up all the dry meats
 into small pieces and they finished it all nicely.' (Hollow 1973b: 224)

c. *Ó'sh, téehq* *óminitaa*
 o'sh teehq o-w-rı=taa
 gosh be.long.distance PV.LOC-1A-2S=LOC

6 *Syntax and clause structure*

mamáakahinito'sh.

wa-wąqkah=rít=o'shí

1A-lie.POS.AUX.HAB=2PL=IND.M

‘Gosh, I have been staying with you all for a long time.’ (Hollow 1973a: 31)

The lone non-positional auxiliary is the plural durational auxiliary *núunih*. It is most typically translated by Mandan speakers as ‘they are there.’ On its own, this verb is used to express that a plural subject exists at a specific point, as determined by the narrative. We can see examples of the non-auxiliary use of *núunih* ‘be.PL there’ below. Each instance of the verb in question is shown in bold.

(38) Examples of non-auxiliary use of *núunih*

- a. *íwahuurahka* *núunihoomako'sh*
 i-wa-huu=ahka ruurjh=oowąk=o'sh
 PV.POSS-UNSP-bone=only be.there.PL.DUR=NARR=IND.M
 'only his bones were there' (Hollow 1973b: 199)

b. *Karóotiki* *róoktini* *núunihkereroomako'sh.*
 ka=rooti=ki rookti=rj ruurjh=krE=oowąk=o'sh
 PROV=EVID=COND make.camp=ss be.there.PL.DUR=3PL=NARR=IND.M
 'And then they camped and they were there.' (Hollow 1973b: 171)

c. *Nihúuxi'he* *ítoop* *q'teroo*
 rj-hüyü#xi'h=E i-toop q't=roo
 2POSS-mother#be.old=sv PV.POSS-four DEM.ANAP=DEM.MID
núuniho're.
 ruurjh=o're
 be.there.PL.DUR=IND.F
 'Your four grandmothers are there.' (Hollow 1973a: 104)

When used as an auxiliary verb, *núunih* has similar semantics as a progressive positional auxiliary does. That is to say, they express an ongoing event or state. However, there appears to be a slight aspectual difference between the positional auxiliaries and *núunih* in that *núunih* is used only for plural subjects where a proposition takes place over a prolonged duration. We can see examples of this use of the durational auxiliary below. The instances of durational constructions are shown in bold.

(39) Examples of *núunih* as an auxiliary

6.3 Multiclausal structures

One peculiarity of the auxiliary verb *núunih* is that it is intrinsically plural. However, we do see instances of additional plural marking in the corpus, such as in (39b). In (39b), the third person plural enclitic *=kere* appears after the auxiliary. It is unclear if this plural marking is optional for all speakers or if it is marking another plural argument that is otherwise not obvious from the context.

6.3.4 Causatives

Mandan employs the causative verb *heré* to create constructions where an agent is involved in making a proposition happen. Causative constructions are complex words where the causative verb becomes part of the same prosodic word as the verb being causativized. The causative verb will bear agreement marking for the causer and the causee. No other elements are able to appear between the causative verb and the causativized verb, and the causativized verb and causative verb will share a single primary stress.

The semantics of causatives in Mandan are more broad than that of 'X made Y do Z.' Causatives in the corpus are often translated as 'X told Y to do Z,' 'X allowed Y to do Z,' or even 'X wanted Y to do Z.' Thus, causatives can indicate direct causation in the sense that someone is causing someone or something else to do something or be a certain way. However, causatives can also indicate indirect causation, as someone may ask or implore or require someone to do

6 Syntax and clause structure

something or be a certain way. We can see examples of causative constructions in the data below. The causative constructions have been shown in bold.

(40) Examples of causative constructions

- a. *Ptamíihe, wiipe wáa'isekminihere're.*
 p-ta-wíjh=E wiipe waa-i-sek#w-rj-hrE=o're
 1POSS-AL-woman=sv cornballs some-PV.INS-make#1A-2S-CAUS=IND.F
 'My sister, I want you to make some cornballs.' (Hollow 1973b: 299)
- b. *Ratóoreena waktáni íshqaqhe*
 ratoor=ee=rä wa-ktE=rj i-shaqh=E
 be.old=DEM.DIST=TOP UNSP-kill=ss PV.POSS-be.across=sv
kaxípmaherek...
 ka-xip#wq-hrE=ak
 INS.FRCE-peel.skin#1s-CAUS=DS
 'That old one killed something and he made me skin half of it...' (Hollow 1973a: 42)
- c. *Na'é réehrohereso'sh.*
 rä'e rEEh#ro-hrE=s=o'sh
 mother.voc go.there#1s.PL-CAUS=DEF=IND.M
 'Mother told us to go there.' (Hollow 1973a: 166)
- d. *kikü'minihere'sh*
 ki-kü'#w-rj-hrE=o'sh
 SUUS-give#1A-2S-CAUS=IND.M
 'I told you to give it to him.' (Hollow 1973a: 59)

Negation in causative constructions depends on the intended semantics of what part of the proposition is being negated. The negative prefix *waa-* always appears in initial position within the overall causative complex, which means that *waa-* always appears prefixed onto the causativized verb. The negative enclitics *=xi* and *=nix*, however, can appear either after the causativized verb or on the causative verb itself. Again, the placement of the enclitics indicate what component of the proposition is negated. In (41a) below, we see that the negation enclitic *=nix* appears on the causativized verb. This placement indicates that the entire proposition is not negated, just that it was caused to not be the case. Thus, *wáara'hashinixhara* is more literally 'it made him not be burnt up completely.' We can contrast this placement of a negative enclitic with that of the one in (41b), where the *=xi* after the causative indicates that the causers did not make the situation be a certain way. Negative causative imperatives, however, have

6.3 Multiclausal structures

no such variability in what can be negated within a causative construction. The locus of negation in these constructions is from the negative imperative *káare*, and no negative enclitics appear on the imperative itself. Thus, negation in imperative causative constructions is always on the causative element, never on the causativized element in the corpus. We see this in (41c).

(41) Examples of negation in causative constructions

In all the examples above in (40), only the causative verb bears any agreement morphology for the arguments involved in the proposition. Speakers can optionally mark the causativized verb for its agent or experiencer instead of the causative verb itself. We can see an example of variable agreement placement in the data below, where each causative construction involves a third person plural argument that acts as the subject of the causativized verb. The third person plural enclitic *=kere* appears on the causativized verb in (42a), yet it appears on the causative verb in (42b). The translations below are given by the consultants working with Hollow (1973a), so it is unclear if there are any semantic or pragmatic differences in why plural marking takes place on the causativized verb in one construction but on the causative verb in the other.

(42) Examples of variable agreement marking with causative constructions

6 Syntax and clause structure

- a. *Károotiki* *wíipes* *páqtaha* *xtékereharani*
 ka=ooti=ki wiipe=s páqtah=E=Ø xtE=krE#hrE=rj
 PROV=EVID=COND cornball=DEF mix=SV=CONT be.big=3PL#CAUS=SS
tóop ísekoomako'sh.
 toop i-sek=oowąk=o'sh
 four PV.INS-make=NARR=IND.M
 'And then, mixing up the cornballs, she made them big and she made
 four.' (Hollow 1973b: 268)
- b. *i'aaki'esh* *húuherekerek*
 i-aaki-esh huu#hrE=krE=ak
 PV.DIR-above-SMLT come.here#CAUS=3PL=DS
minisweerutseena *wakíkų'teroomako'sh*
 wris#wee#rut=s=ee=rą wa-kikų'tE=oowąk=o'sh
 dog#feces#eat=s=DEM.DIST=TOP UNSP-help=NARR=IND.M
 'he made them come further up and the dog helped them' (Hollow
 1973a: 181)

Agreement marking on the causativized verb is rare in the corpus, as the causative verb is the expected locus of agreement marking. It is unclear if there is any pragmatic reason for using one tactic for agreement marking or another, or if both are equally grammatical and simply a matter of personal style on the part of the speaker.⁴

6.3.5 Desideratives

Switch-reference is the most common tactic to connect clauses in Mandan. Constructions involving switch-reference consistently indicate a link between two different propositions by indicating whether there is a shared subject or not. We see switch-reference marking co-opted in a construction that would typically be associated with subordination in other languages: i.e., raising, where the subject of a subordinate clause is treated as the direct object of the superordinate clause.

In desiderative constructions involving the verb *éereh* 'to want,' this desiderative verb appears after a clause bearing same-subject switch-reference marking if the subject of the raised verb is the same as that of *éereh*, while the conditional

⁴This floating agreement marking is reminiscent of clitic raising in Romance languages like Spanish, where clitics can appear before the finite verb or after an infinitive verb and have the same meaning: e.g., Spanish *Io quiero comer* versus *quiero comerlo* 'I want to eat it.'

6.3 Multiclausal structures

=*ki* is used if the subjects do not match. We can see examples of desideratives involving the same subject below, where the desiderative constructions are shown in bold.

(43) Examples of same-subject desideratives

- a. *Ptamáahe* *íwasekini* *éewereho're.*
 p-ta-waqh=E i-wa-sek=rj ee-we-reh=o're
 1POSS-AL-arrow=SV PV.INS-1A-make=SS PV-1A-want=IND.F
 'I want to make my arrows.' (Hollow 1973b: 284)
- b. *Watewé* *írasekini* *éerareho'sha?*
 wa-t-we i-ra-sek=rj ee-ra-reh=o'sha
 UNSP-WH-INDF PV.INS-2A-make=SS PV-2A-want=INT.M
 'What do you want to do?' (Hollow 1973b: 305)
- c. *q̄qwena kú'hini* *éerehkerekiki,*
 q̄qwe=rq k'-q̄uh=rj ee-reh=krE=kti=ki
 all=TOP 3POSS.PERS-wife=SS PV-want=3PL=POT=COND
kirúkqha *náaka...*
 ki-ru-kah=E r̄aqkE=∅
 ITER-INS.HAND-refuse=SV sit.POS.AUX=CONT
 'when everyone wanted to be able to marry her, she would keep refusing them...' (Hollow 1973a: 125)
- d. *ninúpshashka* *raráahini* *éerehinitki,*
 rj-rup-sha-shka ra-rEEh=rj ee-reh=rjt=ki
 2s-two-COLL-INTS.COLL 2A-go.there=SS PV-want=2PL=COND
ptúuhqhka *wawí* *wahékto'sh*
 p-tuuhqk=ka wa-wi=∅ wa-hE=kt=o'sh
 1POSS-sister's.child=HAB 1A-watch.over?=CONT 1A-see=POT=IND.M
 'if both of you want to go there, I will look after my nephews' (Hollow 1973b: 64)
- e. *Kináatani* *karóoskani* *éerehak,* *máa'qks*
 ki-naqtE=rj ka-rooskE=rj ee-reh=ak waa'qk=s
 ITER-stand.up=SS INS.FRCE-get.down=SS PV-want=DS land=DEF
ókaroooske *náaku míkoomako'sh.*
 o-ka-rooskE r̄aku w̄lk=oowqk=o'sh
 PV.LOC-INS.FRCE-get.down road be.none=NARR=IND.M
 'He stood up again and he wanted to get down, but there was no path for him to get down the hill.' (Hollow 1973a: 210)

6 Syntax and clause structure

Different-subject desideratives are distinct from same-subject desideratives in that they do not employ switch-reference marking to express the connection between the two clause. Instead, different-subject desideratives use the conditional enclitic *=ki*. We can see examples of different-subject desiderative constructions below. The constructions in question are shown in bold.

(44) Examples of different-subject desideratives

- a. *ní'o'na áarakxuhki éewereho'sh*
r̥i-o'=r̥a aa-ra-kxuh=ki ee-we-reh=o'sh
 2s-be=TOP PV.TR-2A-lie.down=COND PV-1A-want=IND.M
 'you are the one who I want to sleep with her' (Trechter 2012b: 75)
- b. *ptéhini nukíkiki éewereho'sh*
ptEh=r̥i r̥u-kiki=ki ee-we-reh=o'sh
 run=ss 1A.PL-race=COND PV-1A-want=IND.M
 'I want us to run a race' (Hollow 1973a: 39)
- c. *páqhi's róotki, páqhi' éerehini...*
páqhi'=s rootki=Ø páqhi'
 porcupine=DEF hit=CONT porcupine
ókaptihki éerehini...
o-ka-ptik=ki ee-reh=r̥i
 PV.LOC-INS.FRCE-be.falling.down=COND PV-want=ss
 'hitting the porcupine, she wanted the porcupine to fall off...' (Hollow 1973a: 65)
- d. *órati róo órahoreki éewereho'sh*
o-ra-ti roo o-ra-hrE=ki ee-we-reh=o'sh
 PV.LOC-2A-dwell DEM.MID PV.IRR-2A-CAUS=COND PV-1A-want=IND.M
 'I want you to make your house here' (Hollow 1973b: 299)

Different-subject desideratives are uncommon in the corpus. This rarity could be due to the fact that causative constructions often carry out a similar function. Same-subject desideratives are extremely common throughout the corpus. It is not clear what the cause of this asymmetry is. One possibility is that same-subject desideratives in the corpus are so common due to the fact that the corpus is built from traditional narratives that involve a single undertaking a task over an extended period of time by themselves. As such, if an individual is the sole focus of the discourse for an extended period of time, then that individual would naturally be expressing what they want and their own desires, as there is no other individual in the discourse upon which to express other desires.

6.3 Multiclausal structures

6.3.6 Clausal coordination and connections

Kennard (1936: 24) states that *=ni* is a general connective element, and he often translates it as ‘and.’ Hollow (1973a,b) and Trechter (2012b) likewise also translate *=ni* as ‘and’ in their interlinear gloss of Mandan narratives. However, Hollow (1970: 472) defines this element as an infinitive or conjunctive. Conversely, *=ak* is often translated as non-finite clauses that have no overt subject, given that Kennard (1936: 22) defines it as a past particle marker, a treatment that is echoed in Hollow (1970: 430).

Despite the fact that these two elements are often translated by researchers and Mandan speakers as conjunctions, switch-reference markers do not behave as coordinators in terms of how they function morphologically and syntactically. Kasak (2019: 53) argues that switch-reference in Mandan marks adjunct clauses. Assuming this analysis, that leaves the question open as to how Mandan forms coordinated clausal constructions.

6.3.6.1 Clausal coordination

Analysis of the corpus reveals that coordination is not a common tactic. Within the narratives from Hollow (1973a,b), there are several times that *éeheni* is used in a way that resembles a coordinator like ‘and.’ However, this form seems to have been lexicalized as a postposition that means ‘with.’ We have previously seen this use in nominal constructions, as discussed earlier in §6.1.5. Below, we can see an example of this use of *éeheni*.

(45) Example of *éeheni* as a postposition

<i>ká'herektiki</i> ,	<i>húpinihe éeheni</i>	<i>íkihíjra</i>
<i>ka'hrE=kti=ki</i>	<i>húprjh=E ee-he=rj</i>	<i>i-ki-híj=E</i>
possess#CAUS=POT=COND	soup=SV	PV-say=SS PV.INS-ITER-drink=SV
<i>máakaha</i> .		
<i>wáqkah=E=Ø</i>		
lie.AUX.POS.HAB=SV=CONT		
‘whenever she would give it to them, they would be drinking it with soup’		
(Hollow 1973a: 207)		

This *éeheni* has also been translated as ‘both’ elsewhere in the corpus, such as the example below. We can also see in (46) that the construction ‘both mother and father’ does not feature an overt coordinator. Furthermore, this treatment of *éeheni* as a quantifier is restricted to the narratives in Hollow (1973b), which are just re-elicitations from Kennard (1934). It could be that treating *éeheni* as a

6 Syntax and clause structure

quantifier could be a feature of older varieties of Mandan, given the fact that Kennard's (1934) worked with consultants who were prior to the reservation period up to the late nineteenth century. It is also possible that the treatment of *éeheni* as 'both' is an artifact of translation.

- (46) Example of *éeheni* as a quantifier

<i>na'é</i>	<i>taté</i>	<i>éeheni</i>	<i>wáarokü're</i>	<i>tékara</i>
rä'e	tate	ee-he=rj	waa-ro-ku'=E	te=krE=Ø
mother.voc	father.voc	PV-say=ss	NOM-1S.PL-give=sv	stand=3PL=CONT
<i>makü'kereka'sh</i>				
<i>wä-kü'=krE=ka=o'sh</i>				
1s-give=3PL=HAB=IND.M				

'both mother and father are always standing there and give me what he gives us' (Hollow 1973b: 128)

What is evident is that there is no overt morpho-syntactic construction for clausal coordination that is clearly identifiable in Mandan within the same utterance. Mandan nominal constructions have a variety of coordination strategies: i.e., asyndeton, monosyndeton, and polysyndeton. Clauses lack any means to express coordination beyond juxtaposition, but it becomes difficult to argue whether strings of verbs in juxtaposition with each other are truly coordinated or if they are involved in a series of fragments or pivots by a speaker who started to say one thing but shifted to rephrase what they were talking about. For this reason, I argue that there is no true clausal coordination in Mandan. The function that clausal coordination plays in languages like English are carried out by switch-reference and serial verb constructions in Mandan. Both of these constructions are structurally adjunct clauses. A proposition like 'She walked into the garden and sang' in English, which involves two coordinated clauses, could be rephrased as a single matrix clause with an adjunct clause that has a non-finite verb: i.e., 'Walking into the garden, she sang.' Languages like English has at least two strategies to encode the proposition here, while languages like Mandan have just the one.⁵

⁵Lefebvre & Muysken (1988: 72) note that Quechua lacks a true coordinator, where the comitative case marker *-wan* is often used to coordinate nouns. Many Quechua varieties borrow Spanish coordinators like *y* 'and' or *o* 'or,' given the fact that Quechua lacks morpho-syntactic markers of coordination. Quechua also appears to rely on adjunct clauses to express relationships between clauses in ways similar to Mandan, but that topic is beyond the present scope of this work.

6.3 *Multiclausal structures*6.3.6.2 **Clausal subordination and adjunction**

Clauses within the same sentence in Mandan are linked by producing a clause that ends in a complementizer and juxtaposing that clause with a matrix clause that bears some kind of illocutionary force marker. In §4.3.5, I extensively detail the variety and functions of these enclitic complementizers, so I will not repeat them all here. However, it is worth noting that the syntactic behavior of clauses bearing these subordinators and adjunct-marking complementizers is very consistent.

Non-matrix clauses in Mandan routinely appear before matrix clauses, regardless of what complementizer appears on the non-matrix clause. We can see examples of this below, where the matrix verb appears in bold and the non-matrix clauses appear within square brackets.

(47) Examples of clause ordering

- a. [*pt̪iire* *h̪uso'nik*], *nihkipatuna*
pt̪iir=E *h̪u-so'rik* *rik=ka#i-paturaq*
 buffalo=sv many=COMP.CAUS offspring=HAB#PV.ORD-be.two.years.old
mí'he *ruh̪iitthereoomakosh*
wi'h=E *ru-hiit#hrE=oowąk=o'sh*
 robe=SV INS.HAND-tan.hide#CAUS=NARR=IND.M
 'he had her tan a two-year-old calf robe, [since there were many buffalo]' (Hollow 1973b: 280)
- b. [*róo* *wakxūhk̪i*], *ó'irahēkq't*
roo *wa-kxuh=ki* *o-i-ra-hek=q't*
 DEM.MID 1A-lie.down=COND PV.IRR-PV.INS-2A-know=HYP
 'you would know it, [if I lay down here]' (Hollow 1973a: 1)
- c. [*Úkereshka'nik*], *wáateenixka'sh*.
u=krE=shka'rik *waa-tee=rjx=ka=o'sh*
 shoot=3PL=DISJ NEG-die=NEG=HAB=IND.M
 'He never dies, [but they would shoot him]' (Hollow 1973b: 117)
- d. [*óo* *wíiwaraxirutini*] *óo*
oo *wV-i-wa-ra-xrut=rj* *oo*
 DEM.MID some-INS.DIR-1A-INS.FOOT-drive.herd=ss DEM.MID
wahúuro'sh
 wa-huu=o'sh
 1A-come.here=IND.M
 'I will bring them there [by driving some there]' (Trechter 2012b: 255)

6 Syntax and clause structure

- e. **Óo** **ó'harani** [máapsitaaki], [ráaha núuniha]
 oo o'#hrE=rj wqapsi=taa=ki rEEh=E ruurjh=E=Ø
 DEM.MID be#CAUS=SS morning=LOC=COND go.there=SV be.PL.DUR=SV=CONT
wíiratqare hékereroomako'sh.
 wíiratqá=E hE=krE=oowák=o'sh
 enemy=SV see=3PL=NARR=IND.M
 'From there, they saw the enemy [when it was morning] [as they were going along].' (Hollow 1973a: 98)

The general ordering of clauses is clear from the examples above. In situations where there are multiple clauses within the same sentence, as in (47e), all non-matrix clauses will still routinely precede the matrix verb. Topicalized elements, such as locatives and adverbs, may precede even the non-matrix verbs, as is the case in the aforementioned example, where *óo ó'harani* 'from there' is associated with the action in the matrix clause *wíiratqare hékereroomako'sh* 'they say the enemy,' rather than in the following non-matrix clause *máapsitaaki* 'when it was morning.'

Non-matrix clauses are able to be postposed after matrix verbs, if the speaker wishes to accentuate that particular clause or add it as an addendum. The matrix clauses in the examples below are shown in bold, with the postposed non-matrix clauses appearing with an underline beneath. The typical preposed non-matrix clauses appear within square brackets.

(48) Examples of postposed non-matrix clauses

- a. *Hiré*, [ráahini] [ísekini] [éerehak] **míhka'eheroo**,
 hire rEEh=rj i-sek=rj ee-reh=ak wík=ka'ehe=roo
 now go.there=SS PV.INS-make=SS PV-want=DS be.none=QUOT=DEM.MID
míkini.
wík=rj
 be.none=ss
 'Now, [he went] and [he wanted [to do it]], though they say that it did not work then, there being nothing there.' (Hollow 1973a: 17)
- b. [Máatah íwokahqá kasími]
 wqatah i-woka=hqá ka-si=wí=Ø
 river PV.DIR-edge=INS INCH-travel=PROG=CONT
wa'érōomako'sh, *wáasherok*.
 wa-E=oowák=o'sh waa-shro=ak
 UNSP-hear=NARR=IND.M some-shout=DS
 '[While traveling along the river edge], he heard something, someone

6.3 Multiclausal structures

shouting: (Hollow 1973a: 28)

- c. [máakaha] **hiré'oshka máakahkerekto'sh,**
 wąqah=E=Ø hire-oshka wąqah=krE=kt=o'sh
 lie.AUX.HAB=SV=CONT now-EMPH lie.AUX.HAB=3PL=POT=IND.M
tami'tikereso'nik.
 ta-wi'#ti=krE=so'rjik
 AL-stone#dwell=3PL=COMP.CAUS
 '[Being there], they must live there even now, since it is their village.
 (Hollow 1973b: 91)

It is uncommon for non-matrix verbs to appear after matrix verbs in Mandan, but they do appear in the corpus. These constructions provide additional evidence against an analysis of switch-reference markers indicating coordinated clauses. If these markers really did indicate coordination, it would be unexpected that we could simply move the coordinator-bearing element (i.e., the element bearing =ni or =ak) elsewhere in the utterance. If the =ni or =ak corresponded to a coordinator like 'and,' we would not be able to move a coordinated element outside of the coordination phrase. Mandan is a head-final language where the heads of phrases are always the final element in their respective domains. If switch-reference markers were the heads of coordination phrases, they would be unique within the language in that they were not head-final, but head-initial like English. We would expect a coordinator to appear after the final element in the coordination phrase, but we instead see =ni and =ak in a variety of positions within a series of clauses, namely before or after a matrix verb.

If switch-reference markers indicated coordination, then the data in (48) should be ungrammatical, since the coordinated elements are illicitly sequenced for coordination. We can see this fact exemplified below in (49), where a grammatical coordinated phrase appears in (49a), but an ungrammatical one appears in (49b). The construction in (49b) is illicit in English, but it mirrors the constructions we see above in (48).

- (49) Evidence against switch-reference as coordination in Mandan

- a. [They took it] and [they went home].
- b. *[They went home] [they took it] and.

As §6.3.6.1 argues, there is no obvious morpho-syntactic mechanism for clausal coordination in Mandan. Therefore, we can assume by the existence of postposed clauses bearing switch-reference marking or bearing other complementizers that

6 Syntax and clause structure

we are not dealing with clausal coordination. Instead, we are looking at a relationship where a single clause is designated as the superordinate matrix clause and all other clauses present in that sentence must necessarily be non-matrix.

The constructions in (48) are evidence that Mandan relies on clausal adjunction as a strategy for expressing clausal relationships rather than clausal adjunction. Furthermore, the fluidity with which Mandan sentences are created in the corpus suggests that non-matrix clauses are adjuncts. We can see in the example below that the Mandan data from (48c) is represented in English in two different ways. The example in (50b) reflects the data seen above, while preposing the non-matrix clause does not affect the grammaticality of the example in (50a). The word order in (50a) is reflective of the general word order of non-matrix clauses with respect to matrix clauses in Mandan, but the order in (50b) is clearly possible, given the data above.

(50) Evidence for non-matrix clauses as adjuncts in Mandan

- a. [Since it is their village], **they must live there even now.**
- b. **They must live there even now, [since it is their village].**

It is unclear what kinds of constructions are true subordination in Mandan, given the fact that non-matrix clauses in Mandan all appear to be optional elements and can be excluded from a sentence without affecting its grammaticality. There is no clear evidence that non-matrix clauses in Mandan are embedded within the matrix clauses. Further study of the corpus and examination of the data could result in the discover of clauses that are complements of a verb instead of adjuncts, but the overwhelming preponderance of non-matrix clauses that bear a complementizer in Mandan exhibit characteristics of clausal adjunction instead of subordination.

6.3.7 Relativization

Mandan makes heavy usage of relative clauses to describe nominals and to act as nominals in their own right. Like other non-matrix clauses in Mandan, relative clauses are adjuncts, where they are optional to the syntax. The morphological manifestations of relativization has been discussed in §4.1.1.4 and more extensively in §4.1.2.6. The purpose of this section is to outline the syntactic patterns of relativization in the corpus, not to review the ways in which relativization is morphologically marked.

Like other Siouan languages, relative clauses can be divided into lexically headed types and non-lexically headed types: e.g., Crow (Graczyk 1997: 252), Hidatsa

6.3 Multiclausal structures

(Boyle 2007: 296), Lakota (Ingham 2003: 79), *inter alios*. The subsections below outline the behavior of these two relative clause types in Mandan.

6.3.7.1 Lexically headed relative clauses

Relative clauses, like verbal adjuncts, appear after the nominal to which they are adjoined. The lexical head of a relative clause is a noun or even a nominalized relative clause.

The most transparent manifestation of relativization is the presence of the relativizer *ko-*. This prefix appears as the leftmost element within the verbal template and serves to indicate that the verb in question is part of a relative clause. We can see examples of this relativizer in the examples below in (51). The lexical head of the relative clause is shown in angled brackets, with the relative clause itself also within angled brackets but shown in bold.

- (51) Examples of lexically headed relative clauses with *ko-*

 - a. [río *numá'ks [kotíseena]*]] mí'he
roo ruwa'k=s ko-ti=s=ee=rä wí'h=E
DEM.MID man=DEF REL-arrive.there=DEF=DEM.DIST=TOP robe=SV
paxápini *ná'teroombao'sh*
pa-xap=rí rä'tE=oowäk=o'sh
INS.PUSH-peel=ss stand.up=NARR=IND.M
'[This man [who arrived]] threw off his robe and got up.' (Hollow 1973b: 94)
 - b. río [*numá'kaaki [kosúhkères]*]], [*kosúkanashkere*] 're,
roo ruwa'k-aaki ko-suk=krE=s ko-suk=räsh=krE=o're
DEM.MID person-COLL REL-exit=3PL=DEF REL-exit=ATT=3PL=IND.F
óti *íkisekini*
o-ti i-ki-sek=rí
PV.LOC-dwell PV.INS-ITER-make=ss
'there [the people [who came out]] were [the ones who came out], repairing their homes' (Trechter 2012b: 198)
 - c. [kú'hs [*koxamáhsh*]] inák rátinik...
k'-uþh=s ko-xwäh=sih iräk rat=rík
3POSS.PERS-wife=DEF REL-be.small=INTS again call.name=ITER
'he again kept calling the name of [the wife [who was young]]...' (Trechter 2012b: 32)

6 Syntax and clause structure

- d. *Óo ó’harani [ú’té [koréehraheres]]*
 oo o’#hrE=rj ú’t=E ko-rEEh#ra-hrE=s
 DEM.MID be#CAUS=SS be.first=SV REL-go.there#2A-CAUS=DEF
rakirúshekto’sh.
 ra-k-ru-shE=kt=o’sh
 2A-VERT-INS.HAND-grasp=POT=IND.M
 ‘From there, you should take [the first one [that you put down]] back.’
 (Hollow 1973b: 228)
- e. *[kotámihs ko-ta-wíjh=s 3POSS.PERS-AL-woman=DEF*
[kíihkarahseena]] “hiré ptamíihe,
kV-i-k-krah=s=ee=rq hire pta-wíjh=E
REL-PV.INS-MID-be.afraid=DEF=DEM.DIST=TOP now 1POSS.AL-woman=SV
wasíi warého’xere’re, káni téehqki
wa-sii wa-reh=o’xre=o’re ka=rj teehq=ki
UNSP-travel 1A-think=DUB=IND.F PROV=SS be.long.distnce=COND
ówakiri’eshka’re,” éeheka’ehe
o-wa-kri-eshka=o’re ee-he=ka’ehe
PV.IRR-1A-arrive.back.here-SMLT=IND.F PV-say=QUOT
 ‘He told [the sister [that he was afraid of]] “now, my sister, I am thinking of traveling and I will come back after a long time”’ (Hollow 1973b: 281)
- f. *[Wáaratoonkaxi’h [kowápashiriihshis]]*
 waa-ratoo=ka#xi’h ko-wa-pa-shriih#shi=s
 NOM-be.mature=HAB#be.old REL-UNSP-INS.PUSH-think#be.good=DEF
kirúharanista!
kru#hrE=rj=ta
call#CAUS=2PL=IMP.M
 ‘Call him [an old man [who has good ideas]].’ (Hollow 1973b: 167)

These kinds of relative clauses are found throughout the corpus. They are especially common when used with stative verbs to convey superlative or comparative semantics, as discussed previously in §4.1.2.6. However, a more common kind of relative clause is one where the there is no relativizer *ko-*, but the relativizer is the preverb. We can see examples of these relativized preverb constructions below, where the head of the relative clause appears within square brackets, and the relative clause also appears within square brackets but bolded.

6.3 Multiclausal structures

(52) Examples of lexically headed relative clauses with preverbs

- a. [Súknuma'k [ówaahijkuunashkereka]]
 suk#ruwə'k o-waa-hijkuu=rash=krE=ka
 child#man PV.IRR-NEG-be.difficult=ATT=3PL=HAB
 j'xtitaa réehererekere'sh.
 j'-xti=taa rEEh#hrE=krE=o'sh
 PV.RFLX-be.pointed=LOC go.there#CAUS=3PL=IND.M
 'They put [young men [who are clever]] at the point.' (Hollow 1973b: 210)
- b. kawóomihka [áakinuma'kaaki [óroos]]
 ka-wV-o-wiḥ=ka aaki#ruwə'k-aaki o-roo=s
 AGT-UNSP-PV.LOC-point.at=HAB above#person-COLL PV.IRR-speak=DEF
 kawóomihka túhererekarani...
 ka-wV-o-wiḥ=ka tu#hrE=krE=rj
 AGT-UNSP-PV.LOC-point.at=HAB some#CAUS=3PL=SS
 'the teachers made some of the [Native Americans [who speak their language]] teachers and...' (Treichter 2012b: 236)
- c. komíhere [mána [ósasak]]
 ko-wiḥh=re wrə o-sa~sak
 3POSS.PERS-woman=DEM.PROX wood PV.IRR-AUG~be.dry
 rutq̣nik...
 ru-taq=rjik
 INS.HAND-drag=ITER
 'his sister would be dragging [wood [that was dry]]...'
- d. [máareksukeena [“piṣka”, éeheekerekas]] ú'shkanak
 wáareksuk=ee=rə pis=ka ee-hee=krE=ka=s ú'sh=ka=rək
 bird=DEM.DIST=TOP sniffle=HAB PV-say=3PL=HAB=DEF be.thus=HAB#POS.SIT
 kí'kare'ra máakahak...
 kí'kare'=E wáqkah=ak
 fly=SV lie.POS.AUX.HAB=DS
 '[a bird [that they call “sniffler”]], that sort [of bird] was there flying around...' (Hollow 1973a: 18)
- e. [wáa'ahuu [áahinashs]] óhi,
 waa-aa-huu aa-hi=rash=s o-hi
 NOM-PV.TR-come.here PV.TR-arrive.there=ATT=DEF PV.IRR-arrive.there

6 Syntax and clause structure

<i>kú'here,</i>	<i>máapsitaarak,</i>	<i>súkini</i>
<i>k'-uuh=re</i>	<i>wáapsi=taa=ak</i>	<i>suk=rí</i>
3POSS.PERS-wife=DEM.PROX	morning=LOC=DS	exit=ss
<i>réehoomako'sh</i>		
<i>rEh=oowák=o'sh</i>		
go.there=NARR=IND.M		
'when he arrived with [the belongings [that he arrived with]], the wife went out and left in the morning' (Trechter 2012b: 67)		
f. [<i>A' t</i> [i'q'ska]],	<i>ptamíihe</i>	
<i>q't</i> i- <i>q's=ka</i>	<i>p-ta-wíjh=E</i>	
DEM.ANAP PV.DIR-be.near=HAB	1POSS-AL-man's.sister=sv	
<i>áahuurak,</i>	<i>ó'ro'sh.</i>	
aa-huu=ak	<i>o'=o'sh</i>	
PV.TR-come.here=DS	be=IND.M	
'[That one [who is that way], my sister brought him, so he is here.'		
(Hollow 1973a: 129)		

The majority of cases where a preverb is used to indicate a relative clause involves the irrealis preverb *ó-*, however, there are numerous examples of the other preverbs being used in a similar fashion throughout the corpus. The use of *ó-* to create relative clauses is reminiscent of the relativizers *agu-* and *aru-* in Hidatsa, which also have the allomorph *oo-* before certain stems (Boyle 2007: 40), though it is not clear whether this /o/-shaped relativization marker is parallel evolution or influence from one language upon the other.

One final source of relative clauses in the corpus involves verbs that bear no relativization morphology at all. In these constructions, the only indication that the clauses are relativized comes from the translations offered by the transcriber. We can see an example of one such instance below with its original translation represented in the two-line interlinear gloss style that Hollow (1973a: 61) uses.

(53) Example of relative clauses without relativization marking

<i>Mishúykak, koník koxamáhere, ráse</i>	<i>ínupshashka, q't, ráse</i>
my brother his son the youngest	his names both of them those names
<i>tükere'sh.</i>	

that he got

The translation of the example above appears to be periphrastic in that there is no relativization marking whatsoever present.⁶ Instances such as the one above

⁶This example has appeared previously in (74b) in Chapter 5 with my own interpretation, given its context in the narrative.

6.3 Multiclausal structures

are almost certainly artifacts of translation rather than true instances of relativization. The corpus is generated from narratives that are delivered initially in Mandan, then translated into English. In the case of Hollow (1973a), the Mandan consultants give free translations into English afterward the initial Mandan telling, and then Hollow goes back later to give a word by word translation of what has been transcribed with the help of his consultants or other Mandan community members. Trechter (2012a,b) employs a similar strategy with Mr. Edwin Benson and Mr. Corey Spotted Bear. With these instances of relative clauses in the corpus being the result of paraphrasing from Mandan into English rather than direct translations, I argue that Mandan has only the two strategies for relativization that are described above: using *ko-* or a preverb.

The choice of which relativizer to use is not completely obvious. Kennard (1936: 15) states that *ko-* is used for constructions where the action involves an agent, and Hollow (1970: 451) similarly describes *ko-* as an agentive relativizer, but for non-stative verbs. We see that *ko-* can be used with stative verbs as well, however

(54) Examples of stative verbs bearing *ko-*

- a. *manáwerexe* *ko'ú'st* *kotké* *kokámix*
 wrą#wrex=E ko-ú't=t ko-tke ko-kawix
 wood#kettle=sv REL-be.in.past=LOC REL-be.heavy REL-be.round
koxtés *kixúq'h*
 ko-xtE=s kixuq'h
 REL-be.big=DEF five

‘five big, round, heavy, old drums [lit. ‘five drums that are big, that are round, that are round, that are heavy, and that are old.’]’ (Mixco 1997a: 21)

- b. *ímashut* *ko'áaki*
 i-wąshut ko-aaki
 PV.INS-clothe REL-above
 ‘top coat [lit. ‘shirt that is on top’]’ (Hollow 1970: 56)

In the examples above, we see stative verbs being used with *ko-*, which is something that Hollow (1970: 451) states provides nominalizing semantics. This use of *ko-* has already been detailed in §4.1.2.6. However, relative clauses in general can be treated as nominals in Mandan, as detailed further in §6.3.7.2 below.

6.3.7.2 Lexically headless relative clauses

Relative clauses happen throughout the corpus with great frequency. One of the most productive methods of adding nouns to the lexicon is to describe what that

6 Syntax and clause structure

entity does or what it is for. These novel terms are often derived from a relative clause. Furthermore, these relative clauses are typically absent a lexical head. Headless relative clauses can be seen throughout Hollow's (1970) dictionary. Several examples of headless relative clauses treated as nouns appear below.

In (55), we see numerous instances of a noun that is compositionally a relative clause that employs a preverbal relativizer. In each of the examples below, there is no lexical head to which each relative clauses adjoins. For example, *ó'aakü* 'a shadow' in (55a) involves the irrealis preverb *o-* prefixed onto the verb *áakü* 'cast a shadow.' The literal translation of this item is 'when a shadow is cast,' but it is the case that Mandan speakers have lexicalized this term to mean a specific noun. We can see other similar nouns that occur in the lexicon that are transparently relative clauses in (55) below.

(55) Examples of nouns that are headless relative clauses

- a. *ó'aakü*
o-aakü
 PV.IRR-cast.a.shadow
 'a shadow [lit. 'when a shadow is cast']' (Hollow 1970: 57)
- b. *ímikiha*
i-wi-ki-hE
 PV.INS-1s-RFLX-see
 'a mirror [lit. 'what I see myself with']' (Hollow 1970: 71)
- c. *ihijka*
i-hij=ka
 PV.INS-drink=HAB
 'a pipe [lit. 'what one smokes with']' (Hollow 1970: 74)
- d. *óhop*
o-hop
 PV.LOC-be.hollow
 'a hole [lit. 'where it is hollow']' (Hollow 1970: 77)
- e. *írukaxka*
i-ru-kEx=ka
 PV.INS-INS.HAND-scrape=HAB
 'a rake [lit. 'what one holds in one's hands to scrape with']' (Hollow 1970: 107)

6.3 Multiclausal structures

- f. *ókso*
 o-kso
 PV.IRR-spit
 ‘saliva [lit. ‘when one spits’]’ (Hollow 1970: 121)
- g. *ópshii*
 o-pshii
 PV.LOC-be.flat
 ‘plains [lit. ‘where it is flat’]’ (Hollow 1970: 445)

One salient quality of these relative clauses is that they lack any kind of lexical head. There is no overt noun that can be inserted to maintain the same lexical semantics. For example, the word *ópshii* ‘plains’ in (55g) does not have the same meaning when used as a bona fide relative clause, as we see below.

- (56) Example of polysemy of certain relative clauses

<i>mí'tis</i>	<i>nátoo</i>	[ópshiiitaa]	<i>óo</i>
wí'#ti=s	rát=oo	o-pshii=taa	oo
stone#dwell=DEF be.middle.of=DEM.MID PV.LOC-be.flat=LOC DEM.MID			
<i>ó'harani</i>	<i>wíiskek</i>	<i>náapextekereroomako'sh</i>	
o'#hrE=rí	wV-i-skE=k	ráp(E)-xtE=krE=oowák=o'sh	
be#CAUS=SS UNSP-PV.INS-jump=HAB	dance-AUG=3PL=NARR=IND.M		
‘[The village center there [where it was flat]], they danced a lot to praise songs from there’ (Hollow 1973b: 251)			

The use of *ópshiiitaa* in (56) above obviously excludes the reading of *ópshii* as ‘plains,’ given the context. A village center is clearly not big enough to encompass an extended geographical features like a plain, so this polyseme must indicate the meaning of ‘where it is flat’ instead. The use of *ópshii* with a lexical head in (56) above makes it obvious that this polyseme cannot be referring to the plains, but relative clauses without a lexical head are common throughout the corpus. In the examples below, headless relative clauses are represented with a \emptyset in place of where a lexical head should be, followed by the relative clause in square brackets and in bold.

- (57) Examples of headless relative clauses

- a. *ptasúknuma'ke* *qqwe* $[\emptyset$ **[ótawiiratqare]** $]$ *kitúni...*
 p-ta-suk#ruwá'k=E qáwe o-ta-wiirataq=E ki-tu=rí
 1POSS-AL-child#man=sv all PV.LOC-AL-enemy=SV ITER-some=ss
 ‘I have all my young men [\emptyset [where their enemies are]]...’ (Hollow 1973a: 56)

6 Syntax and clause structure

- b. [Ø [*watámaana ókimimanashini, téetokinashini, ú'kanashoo*]]
 waa-ta-waarq o-kiwq=rash=rj teetoki=rash=rj u'=ka=rash=oo
 UNSP-TA-winter PV.IRR-SIX=ATT=SS eight=ATT=SS be.thus=HAB=DEM.MID
wiupto íminixkere...
wiupto i-wrjx=krE
 ball PV.INS-play=3PL
 '[The ones [who were about six or eight or something like that]
 played ball' (Hollow 1973a: 126)
- c. *káni* [Ø [*óranuunihinit*]] *áakihqq waaki'kare'ra*
 ka=rj o-ra-ruurih=rj=s aaki=hq̄a waa-ki'kare'=E
 PROV=SS PV.LOC-2A-be.AUX.PL.DUR=2PL=DEF above=INS someone-fly=SV
máanaakiki
waa-rqakE=ki
 someone-sit.POS.AUX=COND
 'and when there is someone flying above [Ø [where you are]]' (Hollow
 1973a: 130)
- d. *Mákak* [Ø [*Kowóoxohkas*]]
 wák=ak ko-wV-o-xok=ka=s
 POS.LIE=DS REL-UNSP-PV.LOC-swallow=HAB=DEF
téhereroomaksjh.
 tee#hrE=oowák=sjh
 die#CAUS=NARR=INTS
 'He was there and [the One [who Swallows⁷]] killed him.' (Hollow
 1973a: 97)
- e. [Ø [*Koháni éerehs*]] *ótoomako'sh.*
 ko-hE=rj ee-reh=s o=t=oowák=o'sh
 REL-see=SS PV-want=DEF PV.LOC=LOC=NARR=IND.M
 '[The one [who he wanted to see]] was with them.' (Hollow 1973a: 127)
- f. *Kixéektek*, [Ø [*mí'ti kotkás*]] *q̄qwena pó*
 ki-xee=ktE=ak wj'#ti ko-tka=s aqwe=rq̄ po
 MID-be.slow=POT=DS stone#dwell REL-reside.in=DEF all=TOP fish

⁷The translation typically given for *Kowóoxohkas* in Mandan narratives is 'the Swallower,' a monster who has a man-like shape, but with no head and a mouth that goes from shoulder to shoulder. A similar figure appears in Hidatsa narratives as *līhdia* 'Big Mouth' (Matthews 1878: 136).

6.3 Multiclausal structures

- xtés *wakirútoomako'sh.*
 xtE=s wa-k-rut=oowąk=o'sh
 be.big=DEF UNSP-ITER-eat=NARR=IND.M
 'When he could stop, he would eat all [the ones [who lived in the
 village]]'s big fish.' (Hollow 1973b: 201)
- g. Károotiki, [Ø [*koxópiniseena*]]: "Xéepa,
 ka=ooti=ki ko-xopri=s=ee=rą xeeapa
 PROV=EVID=COND REL-be.holy=DEF=DEM.DIST=TOP hold.up
núunihinista!"
 ruurjh=rj̥=ta
 be.AUX.PL.DUR=2PL=IMP.M
 'And then, the holy one was like, "wait a minute, stay there!"' (Hollow
 1973b: 259)
- h. [Ø [*Ktisehka*]], *kakí'ųy̥tka* *tükereka'sh.*
 kV-i-sek=ka ka-ki-ųy̥t=ka tu=krE=ka=o'sh
 REL-PV.INS-make=HAB AGT-MID-be.first=HAB some=3PL=HAB=IND.M
 '[One [who does it]], there is always a leader.' (Trechter 2012b: 238)

The English translation for relative clauses bearing *ko-* typically follow some formula of 'the one who *ko-X*', where X is whatever the relativized predicate is. The translations of these relative clauses have a head (i.e., 'the one(s)'), but there is no such head present in the syntax in Mandan in the examples above. Furthermore, many of these headless relative clauses are treated as nominals on their own. We see in (57c) through (57g) that the verb of the headless relative clause bears the definite article =s 'the,' and (57g) in particular bears the topic marker =na. These are all formatives associated with nominals. Headless relative clauses stand as one of the most productive methods of building novel nominals in Mandan.

The majority of headless relative clauses in the corpus involve a preverb. One reason for this distribution is that *ko-* is most often associated with relative clauses with an animate subject. The irrealis preverb *o-* can be used in similar ways throughout the corpus, though it is not clear if there is a semantic or pragmatic reason for using *ko-* versus *o-* for relative clauses that modify a human or otherwise animate entity involving a stative verb. One possible difference is that *ko-* might imply some unique characteristic about the entity in question, as we saw in example (54), where each adjectival use of a stative verb received a *ko-*, while *o-* might imply a quality that is not permanent or is subjective, as we see in (52a). Without an L1 speaker to elucidate the strategy for selecting one relativizer

6 Syntax and clause structure

over another, we can only postulate why speakers opt for *ko-* in some in some instances, but *o-* in others.

7 Narrative structure

This chapter is devoted to the study of the discourse structure of Mandan. Items such as subjects, direct objects, and other semantic roles that would otherwise be clarified by the overt presence of an element in the syntax must often be inferred through context within the narrative structure of an exchange. The bulk of the Mandan corpus is derived from extemporaneous speech in the form of traditional and personal narratives, which can obscure the immediate syntactic structure of any given sentence. Each sentence, therefore, requires the context of the preceding narrative to interpret.

The main goal of this chapter is to provide an interlinear gloss of Mandan narratives to aid in their analysis by learners, linguists, and other interested parties. Before going through these narratives, I provide an overview of discourse markers used in Mandan. These discourse markers range from interjections to items used to indicate a connection or separation from previously described situations. After this overview of discourse markers, I provide an interlinear gloss of a Mandan narrative. This narrative is one that appears in [Hollow \(1973a\)](#), which has a basic two-line interlinear gloss. Here, I provide an elaborated four-line gloss that provides a morphological breakdown and shows the underlying lexical and grammatical formatives present in the narrative. [Coberly \(1979\)](#), [Carter \(1991b\)](#), and [Mixco \(1997a\)](#) all provide more nuanced glosses of the [Hollow \(1973a,b\)](#) narratives, and I continue that tradition here.

7.1 Discourse markers

The syntactic composition of phrases and clauses appears in Chapter 6. One aspect of Mandan grammar that has heretofore been mentioned only in passing is the treatment of linguistic material that does not fit neatly into a particular syntactic position within the structure of an utterance is that of discourse markers. These discourse markers include interjections, filler words, and sentential connectors.

7 Narrative structure

7.1.1 Interjections

Kennard (1936: 32) provides the first known account of interjections in Mandan. This list is short, though we see that the system of interjections in Mandan is likely more complex than we can glean from this information alone. Namely, we see that injections are largely gendered in Mandan, where certain interjections are used only by men, while others are used only by women. These interjections are represented in the table below, with interjections associated with a man are denoted with the ♂ symbol, interjections associated with a woman are denoted with the ♀ symbol, and interjections that do not depend on the sex of a person are denoted with the Ⓛ symbol.

Table 7.1: Mandan interjections

<i>íshkahqq</i>	♀	‘now I remember’
<i>kaháqroo o’s</i>	♀	‘now I remember’
<i>shokishka</i>	♂	‘now I remember’
<i>anáa</i>	♀	expression of disgust
<i>shók</i>	♂	expression of disgust
<i>pxók</i>	♂	‘how silly!’
<i>h̥ih̥jhee</i>	♂	exclamation of surprise or delight
<i>katáshka</i>	♂	‘what of it!’

These interjections rarely appear in the corpus, as they would only appear in cited speech. Furthermore, the corpus is assembled from one-on-one style consultation sessions where a single Mandan speaker is providing narration while at least one other individual is writing down what is being said. There is an absence of interpersonal data in the discourse that is not just a direct or indirect quotation of an individual in a narrative. Furthermore, there is another interjection in the corpus that has not been listed by Kennard (1936) or Hollow (1970); *xéepa* is often translated as ‘wait!’ or ‘hold on!’ in Hollow (1973a,b), and it does not change for number of addressees, so it is clearly an immutable form that is just used as an attention-grabbing interjection. Likewise, *hée* ‘hey!’ is used as an attention-grabber, though it is not clear if this term is a loan from English or a native Mandan term that just happens to be phonetically similar.

On top of these interjections, we also frequently see interjections for ‘yes’ and ‘no’ throughout the corpus. There are at least two ways to provide an affirmative in Mandan, with *híy* being most frequent and prototypical. There are several alternative to *híy*, including *hóo*, *háq*, and *háu*. The *hóo* seems related to the general Plain exclamation *ahóo*, which carries various greeting or affirming

7.1 Discourse markers

semantics in various languages of the Plains. Likewise, *háu* is a general greeting in Mandan and is a borrowing that is shared with other Plains languages for greeting. The *hqq* is noteworthy in that is a greeting in Lakota and Dakota, but only when used from a woman to greet another woman. It is unclear if there is any pragmatic reason for using one version of ‘yes’ over the other.

A refusal or negation in Mandan makes use of the verb *mík* ‘be none,’ along with the allocutive agreement marker that matches the sex of the addressee or addressees: *mikó’sh* ‘no’ for speaking to a man, a group of men, or mixed company versus *mikó’re* ‘no’ for speaking to a woman or group of women. Unlike ‘yes,’ there are no attested alternatives for ‘no’ in Mandan. One Mandan consultant offered up a third option for a response to a yes–no question: *áahahii* (Little Owl, p.c.). This interjection is uttered when the speaker does not wish to respond ‘yes’ or ‘no’ to a proposition, but simply wishes to acknowledge that they have heard it and are contemplating it. This interjection has not been attested in the speech of other Mandan speakers, however, and the consultant in question comes from a family who historically spoke the *Rúptaa* variety of Mandan. Whether this is a dialectal item or a more generalized one is unclear.

An interjection of greeting in Mandan is *háu*, which has already been stated to be a loan word that is common to languages of the Plains. Likewise, *ahóo* or *hahóo* can be used to greet someone, though they are most usually used as an exclamation of gratitude. Both the latter terms are likewise words that are common to Plains languages.

7.1.2 Filler words

All languages have sets of words that have no lexical meaning of their own but serve to cue the listener in on the fact that the speaker is reflecting on what they are saying or buying time to think about what is about to be said. Mandan likewise has a set of filler words that are common in recordings. Trechter (2012b) most faithfully records these filler words in her transcriptions of the narratives provided by Mr. Edwin Benson and Mrs. Otter Sage, while filler words are absent almost entirely from Kennard (1934) and Hollow (1973a,b). A list of filler words appears in the table below. Note that there is no apparent gender distinction between filler words in Mandan, unlike interjections. While all these filler words serve similar purposes within the discourse, they are glossed with different English translations to help approximate any distinctions that exist between them.

7 Narrative structure

Table 7.2: Mandan filler words

<i>aa</i>	‘oh’ (thinking)
<i>ee</i>	‘eh’ (displeased or sad)
<i>he</i>	‘uh’
<i>hi</i>	‘um’ (continuing same idea)
<i>u'</i>	‘sort of’ (unsure or hedging)
<i>u'sh</i>	‘so’
<i>waa</i>	‘well (gearing up to say something)’

Throughout the narratives that Trechter (2012b) transcribes, almost all of these filler words have been translated with the English word ‘and’ multiple times. The most straightforward explanation for why these filler words are sometimes translated as conjunctions is to express their function as trying to keep the same utterance going while the speaker thinks about what to say next. These filler words are not true coordinators, as Mandan seems to lack dedicated coordinators in this sense, as previously discussed in §6.3.6.1.

7.1.3 Narrative connectors

Mandan has several strategies for demonstrating that the grammatical subject of one clause is the same or different from that of a subsequent clause. These strategies have been discussed previously in §6.3.1 and §6.3.2. However, Mandan relies on different strategies for connecting one sentence back to one that has previously been uttered. Mixco (1997a: 57) identifies two items, *ha-* and *ka-*, which he labels as a pro-verb and pro-sentence, respectively. I treat both these items as pro-verbs, which act to take the place of a whole clause or utterance.

Both *ha-* and *ka-* are historically derived from Proto-Siouan demonstratives. Proto-Siouan **ha* is a determiner that has more proximal semantics: e.g., Hidatsa *hawá* ‘and then, so,’ Crow *hawá* ‘some, one,’ *hasaa'haatiiriye* and ‘he began to step out **here**.’ Rankin et al. (2015) likewise analyze the *-ha* in the autonym *Dhegiha* as being cognate, where the terms means ‘one who dwells **here**.’ Proto-Siouan **ka* has more distal semantics: e.g., Crow *kan* ‘then, already,’ Hidatsa *ga-* ‘be there,’ Lakota *ká* ‘that (far away),’ *ga'a* ‘that,’ Osage, *ga* ‘that (out of sight),’ Catawba *kat* ‘now.’

In terms of how *ha-* and *ka-* are used in Mandan, there is a slight distributional difference. The pro-verb *ka-* is far more common within the corpus, almost always occurring with the same-subject switch-reference marker *=ni*. *Káni* is a general utterance linker that appears sentence-initially to connect the content

7.1 Discourse markers

of the previous sentence to what is happening in the sentence where *káni* appears. While this term bears the same-subject switch-reference marker, its use does not require that the last subject of the previous sentence be the first subject within the sentence with *káni*.

Mandan uses *=ni* and *=ak* on adjunct clauses to indicate canonical switch-reference, but *káni* is an marker of non-canonical switch-reference in the sense that the reference this term is tracking is the overall topic in question. Using *káni* signifies that the topic from the previous sentence is carried over to the present sentence. We can see examples of this discourse item in the data below.

(1) Examples of *káni*

7 Narrative structure

While *ka-* most often appears with *=ni*, we do see variants in the corpus with differing enclitic markings. *Károotiki* is composed of the pro-verb *ka-* plus the indirect evidential enclitic *=ooté* and the conditional complementizer *=ki*.

Like *káni*, this item indicates a shared topic is being carried over to this new sentence. However, the presence of the evidential and the conditional complementizer alter the semantics of *ka-*. *Károotiki* is used in situations where the events of the sentence where it occurs must necessarily happen as a consequence of the events of the previous sentence. This word is always translated as ‘and then’ throughout the corpus. We can see examples of *károotiki* in the data below.

(2) Examples of *károotiki*

- a. *Minísweerut* *xi’hseena* *kikú’teroomako’sh, inák*
wrís#wee#rut *xi’h=s=ee=rq* *kikú’tE=oowák=o’sh irák*
horse#feces#eat be.old=DEF=DEM.DIST=TOP help=NARR=IND.M *again*
súks. *Károotiki,* “*éepeso’sh.*” *MiníKEE,*
suk=s *ka=ooti=ki* *ee-pE=s=o’sh* *wj-rík=E*
child=DEF PROV=EVID=COND PV-say.1A=DEF=IND.M 2POSS-1POSS-son=SV
riréesike *manakú’ki,* “*éepeso’sh.”*
ri-reesik=E w-rq-kú’=ki *ee-pE=s=o’sh*
tongue=sv 1s-2A-give=COND PV-say.1A=DEF=IND.M
- ‘The old dog helped him, the child once again. **And then**, he was like “I said it. I said that you should give me your tongue.” (Hollow 1973a: 190)
- b. “*Réeharata* *ósuuharani* *réna* *kú’ta,”*
rEh#hrE=ta *o-suu#hrE=rj* *re=rq* *kú’=ta*
go.there#CAUS=IMP.M PV.LOC-be.filled#CAUS=SS DEM.PROX=TOP give=IMP.M
éeheeroomako’sh. *Károotiki* *numá’kseena* *manásh*
ee-hee-oowák=o’sh *ka=ooti=ki* *ruwá’k=s=ee=rq* *wrash*
PV-say=NARR=IND.M PROV=EVID=COND man=DEF=DEM.DIST=TOP tobacco
ósuuharani *kú’roomako’sh.*
o-suu#hrE=rj *kú’=oowák=o’sh*
PV.LOC-be.filled#CAUS=SS give=NARR=IND.M
- ‘He said, “Go on, fill it and give it to this one!” **And then**, the man filled it with tobacco and gave it to him.’ (Hollow 1973b: 175)

The pro-verb *ka-* can also be used in a disjunctive sense. When the same topic is carried over from the previous sentence, but the speaker wishes to contrast some aspect of this topic, then the pro-verb takes the disjunctive *=shka* or

7.1 Discourse markers

=shka'nik. *Káshka* or *káshka'nik* are always translated as 'but' in the corpus, but they behave more like an adverbial than a true conjunction. There does not appear to be an obvious semantic or pragmatic difference between these two items. We can see examples of these disjunctive sentence connectors in the data below.

(3) Examples of *káshka* and *káshka'nik*

- a. *Kiná'ki, ókaakuhq't; ée*
 kirq'=ki o-k-aa-kuh=q't ee
 tell=COND PV.IRR-VERT-PV.TR-come.here.VERT=HYP DEM.DIST
kowóorooreena ókaakuhq't.
 ko-wooroo=ee=rq o-k-aa-kuh=q't
 3POSS.PERS-husband=DEM.DIST=TOP PV.IRR-VERT-PV.TR-come.here.VERT=HYP
Káshka, mítihé róoxkaso'nik,
 ka=shka wíjh=E rV-o-xka=so'rik
 PROV=DISJ woman=sv 1A.PL-PV.IRR-be.wild=COMP.CAUS
wáa'oksahanash ótaa rísekq't.
 waa-o-ksah=rash o=taa rV-i-sek=q't
 NOM-PV.IRR-way=ATT PV.LOC=LOC 1A.PL-PV.INS-make=HYP
 'If she talked about it, he would bring her back; that husband of hers
 there would bring her back. **But**, since women are untamable, we would
 do it anyway with sneaky ways.' (Hollow 1973a: 80)
- b. *Wáatishi'sh. Káshka wáarakina'nixo'sh.*
 waa-ti=ishi=o'sh ka=shka waa-ra-kirq'=rjx=o'sh
 some-arrive.here=VIS=IND.M PROV=DISJ NEG-2A-tell=NEG=IND.M
 'Someone must have been here. **But**, you're not telling.' (Hollow 1973a:
 162)
- c. *Wáashi wáherés wáaxte íwasekak... Káshka'nik,*
 waa-shi wa-hrE=s waa-xtE i-wa-sek=ak ka=shka'rik
 NOM-be.good 1A-CAUS=DEF NOM-be.big PV.INS-1A-make=DS PROV=DISJ
mi'óshka íwasekq't; ptamáah tóps
 wi-oshka i-wa-sek=q't p-ta-wqah top=s
 1S-EMPH PV.INS-make=HYP 1POSS-AL-arrow four=DEF
wakírushekere'sh.
 wa-ki-ru-shE=krE=o'sh
 1A-VERT-INS.HAND-grasp=3PL=IND.M
 'I really did my medicine badly. **But**, I myself did it; [when] I took my
 four arrows back.' (Hollow 1973a: 35)

7 *Narrative structure*

- d. *Róopxata. Káshka'nik, raróopxeki, inihj káare*
 roopxE=ta ka=shka'rj̥k ra-roopxE=ki i-rj̥-hj kaare
 enter=IMP.M PROV=DISJ 2A-enter=COND PV.POSS-2POSS-hair IMP.NEG
kishíharata.
 ki-shih#hrE=ta
 MID-be.sharp#CAUS=IMP.M
 'Go in. **But**, when you go in, don't let your hair become sharp.' (Hollow
 1973b: 4)

The other pro-verb *ha-* is almost always followed by the conditional =*ki* throughout the corpus. The purpose of this discourse marker is to indicate that the topic of the sentence beginning with *háki* is different from the topic of the previous sentence. In this way, *ha-* serves as a non-canonical switch-reference marker, signaling to the listener that there is a shift in aboutness from one sentence to the next. In the corpus, this item is regularly translated into English as 'so.' We can see examples of *háki* in the data below.

(4) Examples of *háki*

- a. *Hj he, Níhkasiire, rá'ts*
 hj he rj̥k=ka#sii=E r'=at=s
 uh um offspring=HAB#be.yellow=SV 2POSS-father=DEF
wáa'owakiniire áqwe maséero'sh. Háki,
 waa-o-wa-ki-rj̥i=E áqwe wq-see=o'sh ha=ki
 NOM-PV.IRR-1A-RFLX-run=sv all 1s-defeat=IND.M PROV=COND
ptijre weréhe rusékereki, ptijre ta'qq
 ptij=E wreh=E ru-sE=krE=ki ptij=E ta'qq
 buffalo=sv door=sv INS.HAND-grasp=3PL=COND buffalo=sv how.many
súhkereki, hák i'kapqt numá'kaakina
 suh=krE=ki hák i'-ka-pqt ruwq'k-aaki=rq
 exit=3PL=COND POS.STND PV.RFLX-INS.FRCE-increase person-COLL=TOP
rúta ómaakakara't, rá'ts
 rut=E=Ø o-wqakE=krE=q't r'-at=s
 eat=SV=CONT PV.IRR-lie.POS.AUX=3PL=HYP 2POSS-father=DEF
maséero'sh.
 wq-see=o'sh
 1s-defeat=IND.M
 'Um, uh, Young Calf, your father beat me every time that I raced him.
 So, if they opened the cows' doorway, if however many of those cows

7.1 Discourse markers

got out, then there would be an increase of people there eating, [which is how] your father beat me.' (Hollow 1973a: 124)

- b. "Ptaniishkeres q'te," éeheerak, "Háki,
 p-ta-ríjishkrE=s q't=E ee-hee=ak ha=ki
 1POSS-AL-medicine=DEF DEM.ANAP=SV PV-say=DS PROV=COND
 nitániishkerek, kék'kaani numá'k ratóokta'shka
 rí-ta-ríjishkrE=ak ke'kaa=rí ruwá'k ratoo=kt=a'shka
 2POSS-AL-medicine=DS keep=ss man be.mature=POT=ABLE
 éewerehini, kék'kaahere, kikí'minihere'sh."
 ee-we-reh=rí ke'kaa#hrE ki-kú'#w-rí-hrE=o'sh
 PV-1A-think=ss keep#CAUS SUUS-give#1A-2S-CAUS=IND.M
 "That is my medicine," he said, "so, if it is your medicine and he keeps it, then I think that he is sure to grow to be a man, causing him to keep it, so I told you to give it to him." (Hollow 1973a: 59)

The pro-verb *ha-* can also take the potential modal =*kt* plus the different-subject switch-reference marker =*ak*. It functions as a counterpart to *károotiki* in that it is not merely a jumping off point into a new sentence, but it indicates that there is some aspect of the present sentence that is caused by or reliant on the topic of the previous sentence with the added caveat that the topic is pivoting to a new one. It is usually just translated as 'so' or and so' in the corpus. We can see examples of *hátek* in the data below.

(5) Examples of *hátek*

- a. Károotiki, súkeena minísishataa
 ka=ooti=ki suk=ee=rá wríš#i-shE=taa
 PROV=EVID=COND child=DEM.DIST=TOP horse#PV.INS-hold=LOC
 náhka'eeheero'sh. **Hátek**, minísweeruts ptíj
 rák=ka'eehee=o'sh ha=kte=ak wríš#wee#rut=s ptíj
 POS.SIT=QUOT=IND.M PROV=POT=DS horse#feces#eat=DEF buffalo
 jxini réehak xawáakereká'ehe.
 jx=rí rEEh=ak xwaa=krE=ka'ehe
 bark=ss go.there=DS be.lost=3PL=QUOT
 'And then, a child was sitting on a travois, it is said. So, the dog was barking at a cow and left, so they got lost, it is said.' (Hollow 1973b: 278)
- b. Numá'k Máxana éeheeni Kinúma'kshi
 ruwá'k wáxraq ee-he=rí ki-ruwá'k#shi
 man one PV-say=SS MID-man#be.good

7 Narrative structure

ikirookereroomako'sh, *kotewé* *óratoore*.
 i-ki-roo=krE=oowąk=o'sh ko-t-we o-ratoo=E
 PV.INS-RFLX-talk=3PL=NARR=IND.M REL-WH-INDF PV.IRR-be.mature=SV
Háktek, *“A’taaka’t* *róo* *wakxúhki*,
 ha=kte=ak *aq’taaka=aq’t* *roo* *wa-xúh=ki*
 PROV=POT=DS be.alright=HYP DEM.MID 1A-lie.down=COND
ó’irahekq’t,” *éeheni* *Kinúma’kshi*
 o-i-ra-hek=aq’t ee-he=rí ki-ruwą’k#shi
 PV.IRR-PV.INS-2A-know=HYP PV-say=SS MID-man#be.good
kxúhoomako’sh.
 kxúh=oowąk=o'sh
 lie.down=NARR=IND.M

‘First Creator and Lone man argued about it, [about] which one was older. So, he said “All right, if I lay down here, you would know it,” and First Creator layed down.’ ([Hollow 1973a](#): 1)

All of the narrative connectors that have been mentioned above are purely optional from a syntactic point of view. Unlike canonical switch-reference markers, these non-canonical switch-reference markers are pragmatic in nature and do not form integral parts of the morpho-syntax of the Mandan language. Furthermore, they do not occupy a position within the syntax as rigidly as the switch-reference enclitics do, as they can be postposed at the right edge of a clause, as we see below.

(6) *Hókeena* “*Kók Kí're*” *éehees*
 hok=ee=rɑ̃ kok ki'=E ee-hee=s
 story=DEM.DIST=TOP antelope pack.on.back=SV PV-say=DEF
iwarooni *éewereh* *shí're.* *Íwahekanashe*
 i-wa-roo=r̩i ee-we-reh shi=o're i-wa-hek=r̩ash=E
 PV.INS-1A-speak=SS PV-1A-want be.good=IND.F PV.INS-1A-know=ATT=SV
qqwe wáashiwaharaxi'sh, *káshka.*
qawwe waa-shi#wa-hrE=xi=o'sh ka=shka
 all NEG-be.good#1A-CAUS=NEG=IND.M
 ‘The story called “Packs Antelope” that I want to tell is good. I won’t do a good job of telling all of what I know about it, **however.**’ (Hollow 1973a: 210)

These words function as pragmatic connectors between one sentence and another, but they behave like adverbials in that they appear sentence-initially most

7.2 Narrative: “Eye Juggler”

often due to being topicalized. The fact that *káshka* above occurs sentence-finally is evidence that these items are adjuncts that can appear in different parts of the sentence according to how the speaker wishes to highlight or downplay the connection between the sentence bearing the narrative connector and the preceding sentence.

7.2 Narrative: “Eye Juggler”

This narrative comes from Mrs. Otter Sage as recorded by Dr. Robert Hollow in Twin Buttes on July 13, 1967. Dr. Hollow was conducting fieldwork that would lead to his dissertation [Hollow \(1970\)](#), while Mrs. Sage was one of the three principal Mandan-speaking consultants who agreed to record and translate a series of narratives.

Mrs. Sage was a frequent source of information about the Mandan language within her own community, and she also worked with several outside scholars beyond [Hollow \(1970, 1973a,b\)](#), such as Dr. Alfred [Bowers \(1971\)](#), who recorded over 150 hours alongside Mrs. Anna Eagle that deal with the traditional narratives and other knowledge presented in [Bowers’s \(1950\)](#) book. Mrs. Sage was also a Mandan language teacher at the school in Twin Buttes. After her passing, that position came to her relative, Mr. Edwin Benson.

The narrative below is a traditional one. “Eye Juggler” is about Royal Chief (*Kinúma’kshi*) traveling in his role as the Coyote, who engages in different cultural *faux pas* to instruct listeners on what not to do. This version of “Eye Juggler” involves Royal Chief encountering a group of children who have medicine that allows them to remove their eyes, throw them somewhere else, and then call them back again. Royal Chief asks for this medicine and buys it from the children for the price of four arrows.

The boys teach Royal Chief how to do what they do, and he quickly leaves as soon as he masters the medicine, to the chagrin of the children. Royal Chief engages in various bouts of mischief to scare small animals until he comes about a thicket of diamond willow trees. He throws his eyes into the trees, calls them back, and is very satisfied with himself. He then decides that this medicine is his and he should ask for his arrows back. The children sadly return his arrows, which ruins Royal Chief’s ability to perform his medicine correctly, and results in a series of misfortunes. After receiving help navigating blinding around from the trees in the area, Royal Chief makes it to the river, where the water restores his eyes and he sets off traveling again.

7 Narrative structure

The overall lesson here is to respect one's medicine and to follow the rules. Performing rites incorrectly or taking them for granted can incur negative consequences. The telling below is the Mandan version of the “Eye Juggler” narrative, a narrative that is shared by many other peoples of the Northern and Southern Plains (Lowie 1909, Thompson 1966, *inter alios*).¹

7.2.1 Interlinear gloss

The interlinear glosses here appear in the same format as the majority of glosses throughout this work. The number of each gloss represents a full sentence or utterance from this narrative. For the sake of counting the total number of utterances within this narrative, the numbering of examples has been reset.

- (1) *Kinúma'kshi* *kasímika'ehesj̫h*.
 ki-ruw̫aq'k#shi ka-si=aw̫j=ka'ehe=sj̫h
 MID-man#be.good INCP-travel=CONT=QUOT=INTS
 ‘Royal Chief was traveling along, it is certainly said.’
- (2) *Máatah íwokahqq* *kasími* *wá'a'eroomako'sh*,
 w̫aq̫atah i-woka=hq̫aq ka-si=aw̫j waa-E=oow̫ak=o'sh
 river PV.DIR-edge=INS INCP-travel=CONT something-hear=NARR=IND.M
wáasherok.
 waa-shro=ak
 NOM-shout=DS
 ‘As he was traveling along the river edge, he heard something, and it was a shout.’
- (3) *Nakóxe kirúpsheroomako'sh*.
 r̫akox=E ki-ru-pshe=oow̫ak=o'sh
 ear=SV MID-INS.HAND-prick=NARR=IND.M
 ‘His ears pricked up.’
- (4) *Káni*, *wá'a'es* *i'ú'taa* *réehoomako'sh*.
 ka=r̫j waa-E=s i-ú'=taa rEEh=oow̫ak=o'sh
 PROV=SS NOM-hear=DEF PV.DIR-be.close=LOC go.there=NARR=IND.M
 ‘And he went toward what he heard.’

¹I make no attempt to draw any conclusions about the origin of this narrative. The thematic elements present in this narrative differ from those in the version of “Eye Juggler” told by other peoples, but any comparison of those narrative and thematic features is beyond the scope of this grammar.

7.2 Narrative: "Eye Juggler"

- (5) *Kinúma'kshi* *kasúhki* *súk* *húna* *miníxa*
 ki-ruẉaq'k#shi ka-suk=ki suk ḥu=ṛa wṛix=E
 MID-man#be.good INS.FRCE-exit=COND child man=TOP play=SV
máakaho'sh.
wáqkah=o'sh
 lie.POS.AUX.HAB=IND.M
 'When Royal Chief peaked out, a lot of children were playing there.'
- (6) *Háktek*, *súhkereseena* *Kirúma'kshi* *hékarani*
 ha=kte=ak suk=krE=s=ee=ṛa ki-ruẉaq'k#shi hE=krE=ṛi
 PROV=POT=DS child=3PL=DEF=DEM.DIST=TOP MID-man#be.good see=3PL=SS
óshiriiha *ptéhkereroomako'sh.*
 o-shriih=E=Ø ptEh=krE=ooẉaqk=o'sh
 PV.LOC-be.scattered=SV=CONT run=3PL=NARR=IND.M
 'So, the children saw Royal Chief and then scattered as they ran away.'
- (7) *Háktek*, *Kinúma'kshiseena:* "SúkiniTEE! Káare
 ha=kte=ak ki-ruẉaq'k#shi=s=ee=ṛa suk=ṛit=E kaare
 PROV=POT=DS MID-man#be.good=DEF=DEM.DIST=TOP child=2PL=SV IMP.NEG
ptáhinista! *Kúhinista!*
 ptEh=ṛit=ta kuh=ṛit=ta
 run=2PL=IMP.M come.here.VERB=2PL=IMP.M
Wáa'q'skaharaxi'sh, *kotáwaratoore*
 waa-ä's=ka#hrE=xi=o'sh ko-ta-wa-ratoo=E
 NEG-be.this.way=HAB#CAUS=NEG=IND.M 3POSS.PERS-AL-UNSP-be.mature=SV
húuki."
 huu=ki
 come.here=COND
 'So, Royal Chief was like, "O children! Don't run! Come back! It is rude to act this way, especially when one's elder is coming."
- (8) *Súhkeres* *áqwe kúhkereroomako'sh,* *Kinúma'kshi*
 suk=krE=s áqwe kuh=krE=ooẉaqk=o'sh ki-ruẉaq'k#shi
 child=3PL=DEF all come.here.VERB=3PL=NARR=IND.M MID-man#be.good
ü't.
ü't
 towards
 'All the children came back to him, to Royal Chief.'

7 *Narrative structure*

- (9) "Sháa nixíhkas, nuptéhq't."
 shaa r̥i-xik=ka=s r̥u-ptEh=a' t
 always 2s-be.bad=HAB=DEF 1A.PL-run=HYP
 "You are always bad, so we figured that we would run away," [said the children].'
- (10) "Ínikxqhinisto'sh, numá'kaaki
 i-r̥i-kxáh=r̥i=t=o'sh ruwá'k-aaki
 PV.INS-2s-laugh=2PL=POT=IND.M person-COLL
 ínihekinitki."
 i-r̥i-hek=r̥i=ki
 PV.INS-2s-know=2PL=COND
 "They will laugh at you, if people knew about you," [said Royal Chief].'
- (11) "Kotáwaratoore kikaráahkerek,'
 ko-ta-wa-ratoo=E ki-kraah=krE=ak
 3POSS.PERS-AL-UNSP-be.mature=sv SUUS-be.afraid=3PL=DS
 éenihenisto'sh."
 ee-r̥i-he=r̥i=t=o'sh
 PV-2s-say=2PL=POT=IND.M
 "They are afraid of their own uncle," they might say about you," [said Royal Chief].'
- (12) "Súkinite, matwé írasekinito'sha?"
 suk=r̥i=E wa-t-we i-ra-sek=r̥i=o'sha
 child=2PL=SV UNSP-WH-INDF PV.INS-2A-make=2PL=INT.M
 '[Royal Chief then asked them,] "Children, what are you doing?"'
- (13) "Nustámi nukirúsaani manátaa
 r̥u-ista#w̥i r̥u-k-ru-saa=r̥i wr̥a=taa
 1PL.POSS-face#orb 1A.PL-SUUS-INS.HAND-remove.meat.from.bone=ss tree=LOC
 róokasanito'sh."
 rV-o-ka-saa=r̥i=o'sh
 1A.PL-PV.LOC-INS.FRCE-hang=2PL=IND.M
 "We are taking out our eyes and hanging them on a tree," [the children replied].'
- (14) "Ptúunite, wahé íwateero'sh."
 p-tuu-r̥i=E wa-hE i-wa-tee=o'sh
 1POSS-sister's.child=2PL=SV 1A-see PV.INS-1A-die=IND.M
 "My nephews, I would like to see it," [Royal Chief said].'

7.2 Narrative: "Eye Juggler"

- (15) *Háktek, súhkeres maná skikíka kaxteka*
 ha=kte=ak suk=krE=s wrä skiski=ka ka-xtE=ka
 PROV=POT=DS child=3PL=DEF tree diamond.willow=HAB AGT-be.big=HAB
ikisqapakereroomako'sh.
 i-ki-säapa=krE=oowäk=o'sh
 PV.DIR-MID-be.around=3PL=NARR=IND.M
 'So, the children went around a bunch of diamond willow trees.'
- (16) *Káni, súhkeres istámi kirúshani*
 ka=r̄i suk=krE=s ista#w̄i ki-ru-shE=r̄i
 PROV=SS child=3PL=DEF face#orb SUUS-INS.HAND-grasp=SS
ímanaseetaa ikü'tekereroomako'sh.
 i-wrä=s=ee=taa i-kü'tE=krE=oowäk=o'sh
 PV.DIR-tree=DEF=DEM.DIST=LOC PV.DIR-throw=3PL=NARR=IND.M
 'And then, the children took out their eyes and threw them towards the tree.'
- (17) *Máa'istami íra'shqashí*
 waa-ista#w̄i i-ra'-shqashí=∅
 NOM-face#orb PV.INS-INS.HEAT-be.glistening=CONT
núunihoomako'sh.
 ruurjh=oowäk=o'sh
 be.PL.AUX.DUR=NARR=IND.M
 'Their eyes were there, glistening.'
- (18) *Háktek, Kinúma'kshi: "Súkinité,*
 ha=kte=ak ki-ruwa'k#shi suk=r̄it=E
 PROV=POT=DS MID-man#be.good child=2PL=SV
wáa'okipkaxanashxte'sh."
 waa-o-ki-k-pax=räsh=xtE=o'sh
 NOM-PV.IRR-ITER-MID-be.broken=ATT=AUG=IND.M
 'So, Royal Chief [said,] "Children, that is really pretty."
- (19) *Háktek, súhkeres istámi kirúherekereroomako'sh:*
 ha=kte=ak suk=krE=s ista#w̄i k-ru#hrE=krE=oowäk=o'sh
 PROV=POT=DS child=3PL=DEF face#orb VERT-call#CAUS=3PL=NARR=IND.M
"mí'stami kúha skóte; mí'stami
 w'~ista#w̄i kuh=E=∅ skot=E w'~ista#w̄i
 1POSS-face#orb come.here.VERT=SV=CONT go.plop=SV 1POSS-face#orb

7 *Narrative structure*

- kúha* *skóte!*”
 kuh=E=Ø skot=E
 come.here.VERB=SV=CONT go.plop=SV
 ‘So, the children called their eyes back, [saying] “My eyes go plop coming back; my eyes go plop coming back!”
- (20) *Háktek, ratóore tashíxteroomako’sh.*
 ha=kte=ak ratoo=E ta-shi-xtE=oowąk=o’sh
 PROV=POT=DS be.mature=SV AL-be.good-AUG=NARR=IND.M
 ‘So, the elder really liked it.’
- (21) “*Ómiha makú’nistā,*
 o-wiḥ=E wą-kų’=rịt=ta
 PV.LOC-point=SV 1s-give=2PL=IMP.M
wáa’irasekinitq’t.”
 waa-i-ra-sek=rịt=q’t
 NOM-PV.INS-2A-make=2PL=DEM.ANAP
 ‘[Royal Chief said,] “Teach it to me, that thing that you did.”’
- (22) *Háktek, súhkereseena “Háu,” éeheekereroomao’sh.*
 ha=kte=ak suk=krE=s=ee=ra hau ee-hee=krE=oowąk=o’sh
 PROV=POT=DS child=3PL=DEF=DEM.DIST=TOP yes PV-say=3PL=NARR=IND.M
 ‘So, the children said “yes.”’
- (23) “*Matewé róorakų’ro’sha?*”
 wa-t-we rV-o-ra-kų’=o’sha
 UNSP-WH-INDF 1S.PL-PV.IRR-2A-give=INT.M
 ‘“What will you give us for it?” [asked the children].’
- (24) *Kinúma’kshi: “Ptamáah tóops minikų’nistō’sh.”*
 ki-ruwą’k#shi p-ta-wąq toop=s w-rị-kų’=rịt=t=o’sh
 MID-man#be.good 1POSS-AL-arrow four=DEF 1A-2s-give=2PL=IND.M
 ‘Royal Chief was like, “I will give you my four arrows.”’
- (25) *Háktek, súhkeres nátkā*
 ha=kte=ak suk=krE=s rąt=ka
 PROV=POT=DS child=3PL=DEF be.middle.of=HAB
shikereroomako’sh.
 shi=krE=oowąk=o’sh
 be.good=3PL=NARR=IND.M
 ‘So, the children were happy.’

7.2 Narrative: "Eye Juggler"

- (26) *Kinúma'kshina:* "Ptúunite, ómiha
 ki-ruwą'k#shi=rą p-tuu=rj̥t=E o-wiḥ=E
 MID-man#be.good=TOP 1POSS-sister's.child=2PL=SV PV.LOC-show=SV
makú'nista."
 wą-kų'=rj̥t=ta
 1s-give=2PL=IMP.M
 'Royal Chief was like, "Nephews, show me how to do it."
- (27) *Háktek, súhkereseena Kinúma'kshi iq't:*
 ha=kte=ak suk=krE=s=ee=rą ki-ruwą'k#shi u't
 PROV=POT=DS child=3PL=DEF=DEM.DIST=TOP MID-man#be.good be.near
"Ríisehki, ó'kashka
 rV-i-sek=ki o'=ka=a'shka
 1A.PL-PV.INS-make=COND be=HAB=ABLE
írasekto'sh."
 i-ra-sek=t=o'sh
 PV.INS-2A-make=POT=IND.M
 'So, the children said to Royal Chief, "If we do it, you should do it the exact same way."
- (28) *"Nustámi nukirúsheki, ni'shak*
 rų-ista#wi̥ rų-k-ru-shE=ki r'̥-ishak
 1PL.POSS-face#orb 1A.PL-SUUS-INS.HAND-grasp=COND 2s-PRO
írasekto'sh."
 i-ra-sek=t=o'sh
 PV.INS-2A-make=POT=IND.M
 '[The children explained,] "When we take our eyes, you should do it, too."
- (29) *Háktek, súhkeres istámi qqwe*
 ha=kte=ak suk=krE=s ista#wi̥ aqwe
 PROV=POT=DS child=3PL=DEF face#orb all
kirushékereroomako'sh.
 k-ru-shE=krE=oowąk=o'sh
 SUUS-INS.HAND-grasp=3PL=NARR=IND.M
 'And so, the children grabbed all of their eyeballs.'
- (30) *Káni, ímanataa wíiku'tekereroomako'sh.*
 ka=rj̥ i-wrą=taa wV-i-kų'tE=krE=oowąk=o'sh
 PROV=SS PV.DIR-tree=LOC UNSP-PV.DIR-throw=NARR=IND.M
 'And then, they threw them toward the tree.'

7 *Narrative structure*

- (31) *Háktek, māa'istami ókasaara mákoomako'sh,*
 ha=kte=ak waa-ista#w̃i o-ka-saa=E w̃ak=oow̃ak=o'sh
 PROV=POT=DS NOM-face#orb PV.LOC-INS.FRCE=hang=SV POS.LIE=NARR=IND.M
manátaa.
wr̃a=t aa
tree=LOC
 ‘And so, their eyes were just hanging there all over, on the tree.’
- (32) *Háktek, iq'ka, súhkereseena: “Ratóore,*
 ha=kte=ak ɿ'=ka suk=krE=s=ee=r̃a ratoo=E
 PROV=POT=DS be.near=HAB child=3PL=DEF=DEM.DIST=TOP be.mature=sv
ní'shak inák éetekto'sh, wáaroo'eeheere: 'Mí'stami
r'~ishak irák ee-tE=kt=o'sh waa-rV-o-ee-hee=E w'~ista#w̃i
 2S-PRO also PV-say.2A=POT=IND.M NOM-1A.PL-PV.IRR-PV-say=sv 1POSS-face#orb
kúha skóote; mí'stami kúha
 kuh=E=∅ skot=E w'~ista#w̃i kuh=E=∅
 come.here.VERB=SV=CONT go.plop=SV 1POSS-face#orb come.here.VERB=SV=CONT
skóte!”
 skot=E
 go.plop=sv
 ‘So, then, the children were like, “Elder, you should also say it, what we
 are going to say: ‘My eyes go plop coming back; my eyes go plop coming
 back!’”
- (33) *Háktek, istámikeres q̃qwe karóopxekerereroomako'sh.*
 ha=kte=ak ista#w̃i=krE=s q̃qwe ka-roopxE=krE=oow̃ak=o'sh
 PROV=POT=DS face#orb=3PL=DEF all INS.FRCE-enter=3PL=NARR=IND.M
 ‘So, all their eyes went back in.’
- (34) *Háktek, Kinúma'kshi tashíxteroomako'sh.*
 ha=kte=ak ki-ruw̃a'k#shi ta-shi-xtE=oow̃ak=o'sh
 PROV=POT=DS MID-man#be.good AL-be.good-AUG=NARR=IND.M
 ‘So, Royal Chief really liked that.’
- (35) “*Wāa'okipkaxanashxte'sh.*”
 waa-o-ki-k-pax=r̃ash=xtE=o'sh
 NOM-PV.IRR-ITER-MID-be.broken=ATT=AUG=IND.M
 “It is really pretty,” [said Royal Chief].’

7.2 Narrative: "Eye Juggler"

- (36) "Máama'sho, íwawaaxani mí'stami manátaa
 waa-wq̣ sho i-wa-waaxE=rj̄ w'~ista#w̄i wr̄q̄=taa
 NOM-be.infrequent PV.INS-1A-stop=ss 1POSS-face#orb tree=LOC
 ówakasaani, wakirúhereki, mí'stami
 o-wa-ka-saa=rj̄ wa-kru#hrE=ki w'~ista#w̄i
 PV.LOC-1A-INS.FRCE-hang=ss 1A-call#CAUS=COND 1POSS-face#orb
 karóopxekto'sh."
 ka-roopxE=kt=o'sh
 INS.FRCE-enter=POT=IND.M
 "Sometimes, I will stop and hang my eyes on a tree, so when I call them,
 my eyes will go back in," [said Royal Chief]."
- (37) Háktek, súhkereseet tamáah tóops
 ha=kte=ak suk=krE=s=ee=t ta-wq̄h toop=s
 PROV=POT=DS child=3PL=DEF=DEM.DIST=LOC AL-arrow four=DEF
 ka'hereroomako'sh.
 ka'#hrE=oowq̄k=o'sh
 possess#CAUS=NARR=IND.M
 'So, Royal Chief gave his four arrows to the children.'
- (38) Háktek, "Ptúunite, wakási
 ha=kte=ak p-tuu=rj̄=E wa-ka-si=∅
 PROV=POT=DS 1POSS-sister's.child=sv 1A-INCH-travel=CONT
 waréeho'sh."
 wa-rEEh=t=o'sh
 1A-go.there=POT=IND.M
 'So, [Royal Chief said], "My nephews, I am going to go head out traveling."
- (39) Súhkereseena rukq̄hkereroomako'sh.
 suk=krE=s=ee=ra rukq̄h=krE=oowq̄k=o'sh
 child=3PL=DEF=DEM.DIST=TOP forbid=3PL=NARR=IND.M
 'The children said not to.'
- (40) "Ratóore, wáashinuharanitak, ɿ'sh
 ratoo=E waa-shi#r̄q̄-hrE=rj̄=ak ɿ'sh
 be.mature=SV NOM-be.good#1A.PL-CAUS=2PL=DS be.thus
 rorárusanq̄hini raráahini éerereho'sh."
 ro-ra-ru-sr̄q̄=rj̄ ra-rEEh=rj̄ ee-re-reh=o'sh
 1S.PL-2A-INS.HAND-abandon=ss 2A-go.there=ss PV-2A-want=IND.M
 "Elder, we are having a good time, and you want to go and leave us just
 like that," [the children said]."

7 *Narrative structure*

- (41) *Kinúma'kshi:* “Ó'sh, téehq óminitaa
 ki-ruwə'k#shi o'sh teeħq o-w-rj=taa
 MID-man#be.good gosh be.far.away PV.LOC-1A-2S=LOC
mamáakahinito'sh.
 wa-waqah=rj=t=o'sh
 1A-lie.POS.AUX.HAB=2PL=IND.M
 ‘[Royal Chief replied,] “Gosh, I have been staying with you for a long time.”’
- (42) *Súhkereseena* rá'taxak,
 suk=krE=s=ee=rq ra'-tax=ak
 child=3PL=DEF=DEM.DIST=TOP INS.HEAT-make.loud.noise=DS
Kinúma'kshi kasi, máatah iwkahq
 ki-ruwə'k#shi ka-si=∅ waqtah i-woka=hq
 MID-man#be.good INCH-travel=CONT river PV.DIR-edge=INS
kasímiroomako'sh.
 ka-si=awj=oowaqk=o'sh
 INCH-travel=CONT=NARR=IND.M
 ‘The children cried as Royal Chief set off traveling, and he kept right on traveling along the edge of the river.’
- (43) *Íwaaxani* wáashiheres ikiishkani
 i-waaxE=rj waa-shi#hrE=s i-kikiishkE=rj
 PV.INS-stop=ss NOM-be.good#CAUS=DEF PV.INS-consider=ss
éerehoomako'sh.
 ee-reh=oowaqk=o'sh
 PV-want=NARR=IND.M
 ‘He stopped and he wanted to try out his medicine.’
- (44) *Maná skiskika* kaxtéka ték, híni
 wrq skiski=ka ka-xtE=ka tE=ak hi=rj
 tree diamond.willow=HAB AGT-be.big=HAB stand=DS arrive.there=ss
istámi kirúshani skiskika
 ista#wj k-ru-shE=rj skiski=ka
 face#orb SUUS-INS.HAND-grasp=ss diamond.willow=HAB
kaxtékaseet ik'ü'teroomako'sh.
 ka-xtE=ka=s=ee=t i-k'ü'tE=oowaqk=o'sh
 AGT-be.big=HAB=DEF=DEM.DIST=LOC PV.DIR-throw=NARR=IND.M
 ‘There stood a big bunch of diamond willows and he arrived there, so he took his eyes out and threw them towards that bunch of willows.’

7.2 Narrative: "Eye Juggler"

- (45) *Háktek, Kinúma'kshis: "Mí'stami*
 ha=kte=ak ki-ruwɑ'k#shi=s w'~ista#wi
 PROV=POT=DS MID-man#be.good=DEF 1POSS-face#orb
kúha skóte; mís'ami
 kuh=E=∅ skot=E w'~ista#wi
 come.here.VERB=SV=CONT go.plop=SV 1POSS-face#orb
kúha skóte!"
 kuh=E=∅ skot=E
 come.here.VERB=SV=CONT go.plop=SV
 'So, Royal Chief was like, "My eyes go plop coming back; my eyes go plop coming back!"'
- (46) *Istámis kúhini Kinúma'kshi istámis*
 ista#wi=s kuh=r̄i ki-ruwɑ'k#shi ista#wi
 face#orb=DEF come.here.VERB=SS MID-man#be.good face#orb=DEF
sowókini j'here karóopxeroomako'sh.
 sowok=r̄i j'-hrE ka-roopxE=oowąk=o'sh
 go.splash=SS PV.RFLX-CAUS INS.FRCE-enter=NARR=IND.M
 'His eyes came back to him and Royal Chief's eyes went in, kind of making a splash as they did.'
- (47) *Háktek, Kinúma'shi nátka*
 ha=kte=ak ki-ruwɑ'k#shi rąt=ka
 PROV=POT=DS MID-man#be.good be.middle.of=HAB
shixtéroomako'sh.
 shi-xtE=oowąk=o'sh
 be.good-AUG=NARR=IND.M
 'So, Royal Chief was really happy.'
- (48) *Wāa'okipkaxanasho'sh; shíwahere'sh,*
 waa-o-ki-k-pax=rąsh=o'sh shi#wa-hrE=o'sh
 NOM-PV.IRR-ITER-MID-be.broken=ATT=IND.M be.good#1A-CAUS=IND.M
éerehoomako'sh.
 ee-reh=oowąk=o'sh
 PV-think=NARR=IND.M
 "It is so pretty, what I know how to do," he thought.'
- (49) *Háktek, kixéeni kasí réehoomako'sh.*
 ha=kte=ak ki-xee=r̄i ka-si=∅ rEEh=oowąk=o'sh
 PROV=POT=DS MID-slow=SS INCH-travel=CONT go.there=NARR=IND.M
 'So, he quit doing that and he set out traveling.'

7 *Narrative structure*

- (50) *Kinúma'kshi* *máareksuke* *wapáxirutini*,
 ki-ruwá'k#shi wáareksuk=E wa-pa-xrut=r̄
 MID-man#be.good bird=sv UNSP-INS.PUSH-drive.a.herd=ss
máama'sho *máaxtihkshuk* *skéharani* *máareksuk*
 waa-wá' sho wáqxtik#kshuk skE#hrE=r̄ wáareksuk
 NOM-be.infrequent rabbit#be.narrow jump#CAUS=ss bird
ka'ó'j'tiharani *ú'shkami* *háp*
 ka-o-í'ti#hrE=r̄ ú'sh=ka=aw̄j háp
 AGT-PV.IRR-PV.RFLX-be.afraid#CAUS=ss be.thus=HAB=CONT day
náamininashini *íwaxaani* *skiskíka* *kaxtéka*
 raawr̄=r̄ash=r̄ i-wa-xaa=r̄ skiski=ka ka-xtE=ka
 three=ATT=ss PV.INS-1A-stop=ss diamond.willow=HAB AGT-be.big=HAB
ték, *wáashiheres* *kikíishkeroomako'sh.*
 tE=ak waa-shi#hrE=s kikiishkE=oowąk=o'sh
 stand=DS NOM-be.good#CAUS=DEF consider=NARR=IND.M
 'Royal Chief was making the birds scatter, and sometimes he made a cotta-
 tail jump, and he was a bird-scarer, continuing to do so for about three
 days, then he stopped and tried his medicine on a bunch of diamond wil-
 lows standing there.'
- (51) *Ísekoomako'sh.*
 i-sek=oowąk=o'sh
 PV.INS-make=NARR=IND.M
 'He did it.'
- (52) *Kinúma'kshis* *istámi* *manátaa*
 ki-ruwá'k#shi ista#w̄j wr̄=taa
 MID-man#be.good=DEF face#orb tree=LOC
ókasasaara: "Mí'stami
 o-ka-sa~saa=E=Ø w'~ista#w̄j
 PV.LOC-INS.FRCE-DIST~hang=sv=CONT 1POSS-face#orb
kúha *skóte;* *mí'stami*
 kuh=E=Ø skot=E w'~ista#w̄j
 come.here.VERB=SV=CONT go.plop=SV 1POSS-face#orb
kúha *skóte!"*
 kuh=E=Ø skot=E
 come.here.VERB=SV=CONT go.plop=SV
 'Royal Chief was hanging his eyes around on a tree, going "My eyes go
 plop coming back; my eyes go plop coming back!"'

7.2 Narrative: "Eye Juggler"

- (53) *Háktek, Kinúma'kshi "Ptawáa'iseks,"*
 ha=kte=ak ki-ruwá'k#shi p-ta-waa-i-sek=s
 PROV=POT=DS MID-man#be.good 1POSS-AL-NOM-PV.INS-make=DEF
éerehoomako'sh.
 ee-reh=oowák=o'sh
 PV-think=NARR=IND.M
 'So, Royal Chief thought, "It is my medicine."
- (54) *Kinúma'kshi: "Súhkereseet wakaráahini*
 ki-ruwá'k#shi suk=krE=s=ee=t wa-k-rEEh=rj
 MID-man#be.good child=3PL=DEF=DEM.DIST=LOC 1A-VERT-go.there=ss
ptamáah tóops wakirúshekto'sh."
 p-ta=wáqh toop=s wa-k-ru-shE=kt=o'sh
 1POSS-AL-arrow four=DEF 1A-VERT-INS.HAND-grasp=POT=IND.M
 'Royal Chief [thought,] "I'll go back to the children and get my four arrows
 back."
- (55) *Kinúma'kshi kiptáhini ráahami, súhkereseet*
 ki-ruwá'k#shi ki-ptEh=rj rEEh=awj suk=krE=s=ee=t
 MID-man#be.good VERT-run=ss go.there=CONT child=3PL=DEF=DEM.DIST=LOC
kí'hoomako'sh.
 ki'h=oowák=o'sh
 arrive.there.VERT=NARR=IND.M
 'Royal Chief turned back running and got back there to the children.'
- (56) *"Hée, ptúunite! Wáa, máa'ú'staa*
 hee p-tuu=rj=E waa waa-ú't=taa
 hey 1POSS-sister's.child=sv well NOM-be.far.away=LOC
ptawáa'iseko'sh."
 p-ta-waa-i-sek=o'sh
 1POSS-AL-NOM-PV.INS-make=IND.M
 "Hey, nephews! Well, I did my medicine a long time ago," [said Royal
 Chief].
- (57) *"Teweteroo ptamáah tóops ó'ro'sha?*
 t-we=t=roo p-ta=wáqh toop=s o'=o'sha
 WH-INDF=LOC=DEM.MID 1POSS-AL-arrow four=DEF be=INT.M
Makíhkú'nista!"
 wá-ki-k-kú'=rj=ta
 1S-VERT-SUUS-give=2PL=IMP.M
 '[Royal Chief continued,] "Where are my four arrows? Give them back to

7 Narrative structure

me!”

- (58) *Háktek, súhkeres qqwe pá ókashukanashini*
 ha=kte=ak suk=krE=s aqwe pa o-ka-shuk=rash=rj
 PROV=POT=DS child=3PL=DEF all head PV.LOC-INS.FRCE-hang=ATT=SS
nátka xihkereroomako'sh.
 rąt=ka xik=krE=oowąk=o'sh
 be.middle.of=HAB be.bad=3PL=NARR=IND.M
 ‘So, all the children were hanging their heads and they were sad.’
- (59) *Tamáahs súhkereseena*
 ta-wąqh=s suk=krE=s=ee=rą
 AL-arrow=DEF child=3PL=DEF=DEM.DIST=TOP
kihkų'kereroomako'sh.
 ki-k-kų'=krE=oowąk=o'sh
 VERT-SUUS-give=3PL=NARR=IND.M
 ‘The children gave him his arrows back.’
- (60) *Súhkeres istámini óptik, tamáahs*
 suk=krE=s ista#wrj o-ptik ta-wąqh=s
 child=3PL=DEF face#water PV.LOC-fall AL-arrow
kihkų'kereroomako'sh.
 ki-k-kų'=krE=oowąk=o'sh
 VERT-SUUS-give=3PL=NARR=IND.M
 ‘The children’s tears were falling as they gave them back to him.’
- (61) *Háktek, Kinúma'kshi réehoomako'sh.*
 ha=kte=ak ki-ruwą'k#shi rEEh=oowąk=o'sh
 PROV=POT=DS MID-man#be.good go.there=NARR=IND.M
 ‘So, Royal Chief went off.’
- (62) *Tamáahs kék'a'ni Kinúma'kshi ráahini*
 ta-wąqh=s ke'ka'=rj ki-ruwą'k#shi rEEh=rj
 AL-arrow=DEF possess=ss MID-man#be.good go.there=ss
máa'qkeena ní'ni íkutaa ráahini
 waa'ąk=ee=rą rj'=rj i-ku=taa rEEh=rj
 earth=DEM.DIST=TOP climb=ss PV.DIR-be.opposite=LOC go.there=ss
tamáah tóops patíkini réehoomako'sh.
 ta-wąqh toop=s pa-tik=rj rEEh=oowąk=o'sh
 AL-arrow four=DEF INS.PUSH-throw=ss go.there=NARR=IND.M
 ‘Having his arrows, Royal Chief went along, then he climbed a hill, then
 got to the other side and threw his four arrows away as he left.’

7.2 Narrative: "Eye Juggler"

- (63) *Kinúma'kshi* *sími* *ítani*
 ki-ruwə'k#shi si=awⱼ i-tE=rⱼ
 MID-man#be.good travel=CONT PV.INS-stand=ss
íwaxeeroomako'sh.
 i-wa-xee=oowək=o'sh
 PV.INS-1A-be.slow=NARR=IND.M
 'As Royal Chief was traveling, he got tied and he stopped.'
- (64) *Káni*, *Kinúma'kshi* *haná'ni*,
 ka=rⱼ ki-ruwə'k#shi hrə'=rⱼ
 PROV=ss MID-man#be.good sleep=ss
"Wáa'okipkaxanasheena *shíwaheres*
 waa-o-ki-k-pax=rəsh=ee=rə shi#wa-hrE=s
 NOM-PV.IRR-ITER-SUUS-be.broken=ATT=DEM.DIST=TOP be.good#1A-CAUS=DEF
wakikiishkekto'sh," *éerehoomako'sh.*
 wa-kikiishkE=kt=o'sh ee-reh=oowək=o'sh
 1A-consider=POT=IND.M PV-think=NARR=IND.M
 'And, Royal Chief slept and thought, "I'll try that pretty thing that I know
 how to do."
- (65) *Káni*, *skiskíka* *kaxték* *kitaaroomako'sh*,
 ka=rⱼ skiski=ka ka-xtE=ak kitaa=oowək=o'sh
 PROV=ss diamond.willow=HAB AGT-be.big=DS wake.up=NARR=IND.M
Kinúma'kshi.
 ki-ruwə'k#shi
 MID-man#be.good
 'And, there were diamond willows in a bunch there as he woke up, that
 Royal Chief.'
- (66) *Skiskíka* *kaxték* *híni* *wáashiheres*
 skiski=ka ka-xtE=k hi=rⱼ waa-shi#hrE=s
 diamond.willow=HAB AGT-be.big=HAB arrive.there=ss NOM-be.good#CAUS=DEF
ísekoomako'sh.
 i-sek=oowək=o'sh
 PV.INS-make=NARR=IND.M
 'He got to that bunch of diamond willows and he did his medicine.'

7 *Narrative structure*

- (67) *Kinúma'kshi* *istámi* *kirusháni* *skiskíka*
 ki-ruwá'k#shi ista#wí k-ru-shE=rí skiski=ka
 MID-man#be.good face#orb SUUS-INS.HAND-grasp=ss diamond.willow=HAB
kaxtékseet *istámi*
 ka=xE=k=s=ee=t ista#wí
 AGT-be.big=HAB=DEF=DEM.DIST=LOC face#orb
íkú'teroomako'sh.
 i-kú'tE=oowák=o'sh
 PV.DIR-throw=NARR=IND.M
 'Royal Chief took out his eyes and threw his eyes at the bunch of willows.'
- (68) *Káni*, *Kinúma'kshi* "Mí'stami" *kúha*
 ka=rí ki-ruwá'k#shi w'~ista#wí kuh=E=Ø
 PROV=SS MID-man#be.good 1POSS-face#orb come.here.VERT=SV=CONT
skóte; *mí'tami* *kúha* *skóte,"*
 skot=E w'~ista#wí kuh=E=Ø skot=E
 go.plop=SV 1POSS-face#orb come.here.VERT=SV=CONT go.plop=SV
éeheeroomako'sh.
 ee-hee=oowák=o'sh
 PV-say=NARR=IND.M
 'And, Royal Chief said, "My eyes go plop coming back; my eyes go plop coming back."
- (69) *Háktek*, *istámis* *wáakuhinixoomako'sh.*
 ha=kte=ak ista#wí=s waa-kuh=ríx=oowák=o'sh
 PROV=POT=DS face#orb=DEF NEG-come.here.VERT=NEG=NARR=IND.M
 'So, his eyes did not come back.'
- (70) *Háktek*, *Kinúma'kshi* *hó* *íxaxqkereroomako'sh:*
 ha=kte=ak ki-ruwá'k#shi ho i-xa~xáq=krE=oowák=o'sh
 PROV=POT=DS MID-man#be.good voice PV.INS-AUG~be.loud=3PL=NARR=IND.M
Mí'stami *kúha* *skóte;* *mí'stami*
 w'~ista#wí kuh=E=Ø skot=E w'~ista#wí
 1POSS-face#orb come.here.VERT=SV=CONT go.plop=SV 1POSS-face#orb
kúha *skóte!"*
 kuh=E=Ø skot=E
 come.here.VERT=SV=CONT go.plop=SV
 'So, Royal Chief said in a loud voice, "My eyes go plop coming back; my eyes go plop coming back!"'

7.2 Narrative: "Eye Juggler"

- (71) *Istámis wáakuhinixoomako'sh.*
 ista#wj̥ waa-kuh=rj̥x=oowąk=o'sh
 face#orb NEG-come.here.VERB=NET=NARR=IND.M
 'His eyes did not come back.'
- (72) *Tu'éshka: "Mí'stami kúha skóte;*
 tu-eshka w'í-ista#wj̥ kuh=E=Ø skot=E
 some-SMLT 1POSS-face#orb come.here.VERB=SV=CONT go.plop=sv
mí'stami kúha skóte!"
 w'í-ista#wj̥ kuh=E=Ø skot=E
 1POSS-face#orb come.here.VERB=SV=CONT go.plop=sv
 '[With] some more [loud voice, he said,] "My eyes go plop coming back;
 my eyes go plop coming back!"
- (73) *Kinúma'kshi istámis wáakuhinixoomako'sh.*
 ki-ruwa'k#shi ista#wj̥ waa-kuh=rj̥x=oowąk=o'sh
 MID-man#be.good face#orb NEG-come.here.VERB=NET=NARR=IND.M
 'Royal Chief's eyes did not come back.'
- (74) *"Wáashiwaheres wáaxte íwasekak, kashká'nik*
 waa-shi#wa-hrE=s waa-xtE i-wa-sek=ak ka=shka'rj̥k
 NOM-good#1A-CAUS=DEF NOM-be.big PV.INS-1A-make=DS PROV=DSJ
mi'óshka íwasekq't, ptamáah tóops
 wj̥-oshka i-wa-sek=a't p-ta-wąq̥h toop=s
 1S-EMPH PV.INS-1A-make=DEM.ANAP 1POSS-AL-arrow four=DEF
wakirúshekere'sh.
 wa-k-ru-shE=krE=o'sh
 1A-VERB-INS.HAND-grasp=3PL=IND.M
 "I did my medicine poorly, but that was how I did it myself when I took
 my four arrows back," [thought Royal Chief].
- (75) *Háktek, Kinúma'kshi rá'taxini úypat*
 ha=kte=ak ki-ruwą'k#shi ra'-tax=rj̥ úypat
 PROV=POT=DS MID-man#be.good INS.HEAT-make.loud.noise=ss be.different
pakíshanasha níira maná wáa'ikatqk,
 pa-kish=nash=E=Ø rj̥j=E=Ø wrą̥ waa-i-ka-tąk
 INS.PUSH-feel=ATT=SV=CONT walk=SV=CONT tree some-PV.INS-INS.FRCE-bump
"Maná té, nimátewe'sha?"
 wrą̥ rj̥-wa-t-we=o'sha
 tree 2S-UNSP-WH-INDF=INT.M
 'So, Royal Chief cried out and as he was walking, feeling his way around,

7 *Narrative structure*

- he bumped into a tree, [asking,] “Tree standing there, what are you?””
- (76) *Háktek, manáseena: “Tapsá manáko’sh.”*
 ha=kte=ak wrq=s=ee=rq tapsa wa-rqk=o’sh
 PROV=POT=DS tree=DEF=DEM.DIST=TOP ash.tree 1s-POS.SIT=IND.M
 ‘So, the tree [replied,] “I am an Ash.”’
- (77) “*Hoo, wáaxte íwaseko’sh.*”
 hoo waa-xtE i-wa-sek=o’sh
 yes NOM-be.big PV.INS-1A-make=IND.M
 ““Yes, I really messed up,” [Royal Chief said].”
- (78) “*Wáawahe míko’sh.*”
 waa-wa-hE wjk=o’sh
 NOM-1A-see be.none=IND.M
 ““I cannot see anything,” [Royal Chief added].”
- (79) “*Mamáhenashinista.*”
 wq~wq-hE=rqsh=rjt=ta
 AUG~1s-see=ATT=2PL=IMP.M
 ‘[Royal Chief implored,] “You’ve got to try to see for me.”’
- (80) “*Ímaataht waréeh íwateero’sh.*”
 i-wqatah=t wa-rEEh i-wa-tee=o’sh
 PV.DIR-river=LOC 1A-go.there PV.INS-1A-die=IND.M
 ““I would like to go to the river.””
- (81) *Háktek, tapsáseena: “Ímaataht*
 ha=kte=ak tapsa=s=ee=rq i-wqatah=t
 PROV=POT=DS ash.tree=DEF=DEM.DIST=TOP PV.DIR-river=LOC
 órataaro’sh.”
 o-ra=taa=o’sh
 PV.LOC-2A=LOC=IND.M
 ‘So, the Ash [said,] “You are facing the river.”’
- (82) “*Á’s shíyshuka ráahtha!*”
 á’s shuyshu=ka rEEh=ta
 be.near be.straight.ahead=HAB go.there=IMP.M
 ‘[The Ash said,] “Go straight ahead this way!”’
- (83) “*Wáashirehere’sh; ú’shkakto’sh.*”
 waa-shi#re-hrE=o’sh ú’sh=ka=kt=o’sh
 NOM-be.good#2A-CAUS=IND be.thus=HAB=POT=IND.M
 ““Thank you,” [Royal Chief said,] “That is what I will do.”’

7.2 Narrative: "Eye Juggler"

- (84) *Háktek, Kinúma'kshi réeoomako'sh.*
 ha=kte=ak ki-ruwə'k#shi rEEh=oowək=o'sh
 PROV=POT=DS MID-man#be.good go.there=NARR=IND.M
 'So, Royal Chief went off.'
- (85) *Káni, maná íkatqk, "Maná matewé*
 ka=rj̥ wrə i-ka-tək wrə wa-t-we
 PROV=SS tree PV.INS-INS.FRCE-bump tree UNSP-WH-INDF
ni'ó'ro'sha?"
 rj̥-o'=o'sha
 2s-be=INT.M
 'And, bumping into a [different] tree, [Royal Chief asked,] "What kind of tree are you?"'
- (86) *Míihkatamanaka," éeheeroomako'sh.*
 wíjh=ka#ta-wrə=ka ee-hee=oowək=o'sh
 woman=HAB#AL-tree=HAB PV-say=NARR=IND.M
 "Box Elder," it said.'
- (87) *Hóo, wáashi'sh.*
 hoo waa-shi=o'sh
 yes NOM-be.good=IND.M
 '[Royal Chief said,] "Yes, that is good."
- (88) *Ítewetaa máataho'sha?"*
 i-t-we=taa wəqətah=o'sha
 PV.DIR-WH-INDF=LOC river=INT.M
 '[Royal Chief asked,] "Which way is the river?"'
- (89) *Shúyshuka q's ráahta!"*
 shuqshu=ka q's rEEh=ta
 be.straight.ahead be.near go.there=IMP.M
 "Go this way straight ahead!" [said the Box Elder].
- (90) *Wáashirehere'sh; ú'shkakto'sh.*
 waa-shi#re-hrE=o'sh ú'sh=ka=kt=o'sh
 NOM-be.good#2A-CAUS=IND be.thus=HAB=POT=IND.M
 "Thank you," [Royal Chief said,] "That is what I will do."

7 *Narrative structure*

- (91) *Háktek, Kinúma'kshi ráahami inák maná'na*
 ha=kte=ak ki-ruwə'k#shi rEEh=aw̃i irák wr̃ə=o'=rə
 PROV=POT=DS MID-man#be.good go.there=CONT again tree=be=TOP
ikatqoomako'sh.
 i-ka-ták=oowák=o'sh
 PV.INS-INS.FRCE-bump=NARR=IND.M
 'So, as Royal Chief was going, there was another tree that he bumped into.'
- (92) *Kinúma'kshiseena manáseet:*
 ki-ruwə'k#shi=s=ee=rə wr̃ə=s=ee=t
 MID-man#be.good=DEF=DEM.DIST=TOP tree=DEF=DEM.DIST=LOC
"Nimátewe ó'ro'sha?"
 rĩ-wa-t-we o'=o'sha
 2S-UNSP-WH-INDF be=INT.M
 'Royal Chief [said] to the tree, "What kind are you?"'
- (93) *Manáseena: "Mawáaxe'sh," éeheeroomako'sh.*
 wr̃ə=s=ee=rə wə-waaxE=o'sh ee-hee=oowák=o'sh
 tree=DEF=DEM.DIST=TOP 1s-cottonwood=IND.M PV-say=NARR=IND.M
 'The tree said, "I am a Cottonwood."
- (94) *Kinúma'kshiseena: "Wáa'oshka máatahe*
 ki-ruwə'k#shi=s=ee=rə waa-oshka wəqətah=E
 man#be.good=DEF=DEM.DIST=TOP NOM-EMPH river=SV
wahíroote'sh."
 wa-hi=ootE=o'sh
 1A-arrive.there=EVID=IND.M
 'Royal Chief [said,] "It's a good thing that I must have arrived at the river."
- (95) *Kinúma'kshi wáaxseeta: "Ítewetaa*
 ki-ruwə'k#shi waax=s=ee=taa i-t-we=taa
 MID-man#be.good cottonwood=DEF=DEM.DIST=LOC PV.DIR-WH-INDF=LOC
máatahe ó'ro'sha?"
 wəqətah=E o'=o'sha
 river=SV be=INT.M
 'Royal Chief [said] to the Cottonwood, "Which way is it to the river?"'
- (96) *Wáaxseena: "Máatahe órataaro'sh."*
 waax=s=ee=rə wəqətah=E o-ra=taa=o'sh
 cottonwood=DEF=DEM.DIST=TOP river=SV PV.LOC-2A=LOC=IND.M
 'The Cottonwood [replied,] "You are facing the river."

7.2 Narrative: "Eye Juggler"

- (97) "A's *shúyshuka* ráahita!"
 ą's shúyshu=ka rEEh=ta
 be.near be.straight.ahead=HAB go.there=IMP.M
 '[The Cottonwood said,] "Go straight ahead this way!"'
- (98) *Háktek*, *Kinúma'kshi* réehoomako'sh.
 ha=kte=ak ki-ruwą'k#shi rEEh=oowąk=o'sh
 PROV=POT=DS MID-man#be.good go.there=NARR=IND.M
 'So, Royal Chief went off.'
- (99) *Maná xamáhqa* íkatqka *Kinúma'kshi*: "Maná
 wrą xwąh=hąq i-ka-tąk=E=Ø ki-ruwą'k#shi wrą
 tree be.small=INS PV.INS-INS.FRCE-bump=sv=CONT MID-man#be.good tree
 nimátewe ó'ro'sha?"
 rj-wa-t-we o'=o'sha
 2s-UNSP-WH-INDF be=INT.M
 'Bumping into a little tree, Royal Chief [asked,] "What kind of tree are
 you?"'
- (100) "Mamanáseka'sh."
 wą-wrą#se=ka=o'sh
 1s-tree#be.red=HAB=IND.M
 "I am a Red Willow."
- (101) *Háktek*, *Kinúma'kshi*: "Wia'oshkanashe máatahe
 ha=kte=ak ki-ruwą'k#shi waa-oshka=rąsh=E wątah=E
 PROV=POT=DS MID-man#be.good NOM-EMPH=ATT=SV river=sv
 wahiroote'sh."
 wa-hi=ootE=o'sh
 1A-arrive.there=EVID=IND.M
 'So, Royal Chief was like, "It is kind of a good thing that I must have gotten
 to the river."
- (102) "Wáaxte íwaseke, wáawahé míko'sh."
 waa-xtE i-wa-sek=E waa-wa-hE wj̥k=o'sh
 NOM-be.big PV.INS-1A-make=SV NOM-1A-see be.none=IND.M
 '[Royal Chief said,] "After I did something awful, I cannot see anything."
- (103) "Mamáhenashinista."
 wą~wą-hE=rąsh=rj̥t=ta
 AUG~1s-see=ATT=2PL=IMP.M
 '[Royal Chief begged,] "You've got to try to see for me."

7 *Narrative structure*

- (104) “Máatahe, tewét ó’ro’sha?”
 wąątah=E t-we=t o’=o’sha
 river=SV WH-INDF=LOC be=INT.M
 “The river, where is it?” [Royal Chief asked].’
- (105) “Ímarushani róoskata.”
 i-wą-ru-shE=rị rooskE=ta
 PV.INS-1S-INS.HAND-grasp=ss climb.down=IMP.M
 “Grab hold of me and climb down,” [the Red Willow said].’
- (106) “Máatahe q’teroo máko’sh.”
 wąątah=E q’t=roo wąk=o’sh
 river=SV DEM.ANAP=DEM.MID POS.LIE=IND.M
 “The river is right there.”, [said the Red Willow].’
- (107) Háktek, Kinúma’kshi, áakereh, pakisha,
 ha=kte=ak ki-ruwą’k#shi aakreh pa-kish=E=∅
 PROV=POT=DS MID-man#be.good be.poor INS.PUSH-feel=sv=CONT
 māa’qkanasha, māaptes íwokahqq híni úkhqq
 waa’qk=rash=E=∅ wąapte=s i-woka=hąq hi=rị ąk=hąq
 earth=ATT=SV=CONT river.bank PV.DIR-edge=INS arrive.there=ss hand=INS
 minís rusháni istámis kirusa’roomako’sh.
 wrị=s ru-shE=rị ista#wị=s krusa’=oowąk=o’sh
 water=DEF INS.HAND-grasp=ss face#orb=DEF wash=NARR=IND.M
 ‘So, Royal Chief, poor thing, as he was feeling around, sort of on the ground,
 he got to the river bank edge and he took the water with his hands and
 washed his eyes.’
- (108) Istámi kináakaroomako’sh.
 ista#wị ki-rąaka=oowąk=o’sh
 face#orb MID-be.new=NARR=IND.M
 ‘His eyes became like new.’
- (109) Kinúma’kshi nátka shíroomako’sh.
 ki-ruwą’k#shi rąt=ka shi=oowąk=o’sh
 MID-man#be.good be.middle.of=HAB be.good=NARR=IND.M
 ‘Royal Chief was happy.’

7.2 *Narrative: "Eye Juggler"*

- (110) *Kináatani máapte kaní'ni kasími*
 ki-raqatE=rj wąapte ka-rj'=rj ka-si=awj
 ITER-stand.up=ss river.bank INS.FRCE-climb=ss INCH-travel=CONT
réehoomako'sh.
 rEEh=oowąk=o'sh
 go.there=NARR=IND.M

'He got up again, climbed up the river bank, and he set off traveling.'

7.2.2 Free translation

As they tell it, Royal Chief was traveling along. While he was traveling along the edge of the river, he heard something: a shout! His ears peaked up, and he headed over in the direction of what he had just heard.

When Royal Chief peeked through the trees, and he saw that there were many children playing there in the woods. The children spotted Royal Chief, causing them to all scatter and run away from him. When this happened, Royal Chief called after them, saying, "O children! Don't run! Come back! It is rude to act this way when an elder is approaching." The children came back after hearing what Royal Chief said.

"You are always up to no good, so we figured that we would run away," the children said to Royal Chief.

"People will laugh at you if they knew you were running away from your elders," warned Royal Chief. "So," Royal Chief continued, "children, what are you doing?"

The children explained: "We are taking out our eyes and throwing them up to hang them on a tree." Royal Chief became curious.

"My nephews, I would very much like to see you do it," said Royal Chief. At his request, the children took out their eyes and threw them at the tree. Their eyes were hanging there in the tree, glistening. Seeing this, Royal Chief was impressed, saying, "Children, that is really pretty."

After showing Royal Chief what they did, the children called their eyes back, saying "My eyes go plop coming back; my eyes go plop coming back!" The elder really liked what he saw.

"Teach it to me," said Royal Chief, "that thing that you did." The children said that would teach him.

"What will you give us for it?" asked the children.²

²It is customary to buy the rights to medicine from those who have knowledge of the medicine.

7 *Narrative structure*

Royal Chief thought and replied, “I will give you my four arrows.” The children were happy with this arrangement and the deal was struck. “Nephews,” said Royal Chief, “show me how to do it.”

At this, the children started to explain to Royal Chief what to do. “Whatever it is we do, you must do it in the exact same way. When we take our eyes out, you should do it, too.” And so, the children grabbed all of their eyeballs, then threw their eyeballs towards the tree. Their eyes were just hanging all over that tree.

So, Royal Chief told the children, “My nephews, I am going to head out traveling.” The children forbade him from leaving.

“Elder,” they said, “we are having a good time, and you want to go and leave us just like that.”

“Gosh,” mused Royal Chief, “I have already been here a long time, staying with you all.”

The children cried as Royal Chief set off traveling, and he kept right on traveling along the edge of the river. After traveling, he stopped and wanted to try out what he had learned. There was a big bunch of diamond willows nearby, so he headed over there, took out his eyes, and threw them towards the willow trees. His eyes were there in the trees, and Royal Chief admired what he had done. So, Royal Chief said, “My eyes go plop coming back; my eyes go plop coming back,” and his eyes came back to him and went back in, making a kind of splashing sound when they did. Having done it, Royal Chief was really happy.

“It is so pretty, what I know how to do,” Royal Chief thought. So, he stopped doing what he was doing and resumed his travels. In his travels, Royal Chief used this new medicine to do many mischievous things. He threw his eyes to make birds scatter. Sometimes, he used his medicine to make a cottontail jump in surprise, though he was mostly a bird-scarer, continuing with what he was doing for about three days. After about three days, he tried his medicine on a bunch of diamond willows standing nearby. Then, he threw his eyes at the willows.

Royal Chief was hanging his eyes around on a tree, going, “My eyes go plop coming back; my eyes go plop coming back!” After his eyes came back, Royal Chief thought, “This is *my* medicine. I should go back to the children and get my four arrows back.” He then turned back and ran back to where the children were.

“Hey, nephews,” Royal Chief called to the children. “Well, the thing is, I did what I did a long time ago. Where are my four arrows? Give them back to me!”

Hearing this, the children hung their heads and were sad. They did give him his arrows back, but their tears were falling as they did so. After getting his arrows back, Royal Chief went off.

Having his arrows, Royal Chief was going along. Eventually, he came to a hill, which he climbed. On the other side of the hill, he threw his four arrows away

7.2 *Narrative: "Eye Juggler"*

and left. After all that time traveling, Royal Chief became tired and stopped to take a rest. He slept, thinking, "I'll try that pretty thing that I know how to do when I wake up." As he woke up, there were a bunch of diamond willows standing nearby. He headed over to that bunch of diamond willows and did what he did.

He took out his eyes and threw them at the bunch of willows. After his eyes were hanging in the trees, Royal Chief said, "My eyes go plop coming back; my eyes go plop coming back." However, his eyes did not come back.

In a loud voice, Royal Chief said again, "My eyes go plop coming back; my eyes go plop coming back!" Again, his eyes did not come back.

"I did not do it right, but it was just how I did it when I took my four arrows back," thought Royal Chief.³ He cried out and tried to find his eyes. As he was walking, he was feeling his way around. While he was feeling around, he bumped into a tree. Royal Chief asked, "Hey, tree standing there, what are you?"

The tree responded, "I am an Ash."

Royal Chief sighed, saying, "Yes, I really messed up. I cannot see anything. Ash, you've got to try to see for me. I would like to go to the river."⁴

Hearing Royal Chief's predicament, Ash said, "You are actually facing the river. Go straight ahead this way!"

"Thank you," Royal Chief said. "That is what I will do." So, Royal Chief went off. As he went along, he bumped into a different tree. He then asked, "What kind of tree are you?"

"Box Elder," replied the tree.

"Yes," said Royal Chief. "That is good.⁵ Which way is the river?"

"Go this way, straight ahead," said the Box Elder.

"Thank you," said Royal Chief. "That is what I will do." So, Royal Chief kept going along until he bumped into yet another tree. "What kind are you?" he asked the tree.

The tree responded, "I am a Cottonwood."

³Royal Chief is unable to engage with the medicine as he did previously, because he has violated some aspect of the rules around using this medicine. Reneging on the agreement he had with the original bestowers of the medicine, the children, is likely what caused his eyes to no longer return when called.

⁴Royal Chief is looking for the river, since he threw his eyes at a group of diamond willows. These trees would grow close to water, versus the native ash species of the upper Plains, which tend to be found in woodlands more generally. Thus, if Royal Chief can find his way to the river, he would be in a better position to find where his eyes were.

⁵Box elder trees are most commonly found near alluvial soils by streams, so Royal Chief knows that he is getting closer to the river by finding a box elder.

7 *Narrative structure*

Royal Chief said, “It is a good thing that I must have arrived at the river.⁶ Royal Chief asked the Cottonwood, “Which way is it to the river?”

“You are facing the river,” the Cottonwood replied. “Go straight ahead this way!”

Royal Chief again went off. Bumping into a little tree, he asked, “What kind of tree are you?”

“I am a Red Willow,” replied the little tree.

Royal Chief was heartened, saying, “It is kind of a good thing that I must have gotten to the river.”⁷ Then, he explained to the tree, “After I did something awful, I cannot see anything. You’ve got to try to see for me. The river, where is it?”

“Grab hold of me and climb down,” said the Red Willow. “The river is right there.”

Royal Chief, poor thing, as he was feeling around on the ground, he got himself to the edge of the river bank. He cupped some water in his hands and he washed where his eyes were. His eyes came back and were like new. Royal Chief was quite happy. He got up again, climbed up the river bank, and he set off traveling.

⁶Cottonwoods typically require nutrients provided by the flooding of rivers, so if Royal Chief has found a cottonwood, that means that he is near a river. He is now very close in his mind to finding his eyes.

⁷Red willows are trees usually found on river banks, so Royal Chief is glad to finally be at the river.

References

- Aikhenvald, Alexandra Y. 2005. *Evidentiality*. Oxford, UK: Oxford University Press.
- Aikhenvald, Alexandra Y. 2018. *Serial verbs*. Oxford, United Kingdom: Oxford University Press.
- Allen, Paul. 1814. *History of the expedition under the command of Captains Lewis and Clark to the sources of the Missouri, thence across the Rocky Mountains and down the River Columbia to the Pacific Ocean performed during the years 1804-5-6 by order of the government of the United States*, vol. 1. Philadelphia, PA: Bradford & Inskeep.
- Ameka, Felix. 1992. Interjections: The universal yet neglected part of speech. *Journal of Pragmatics* 18(2-3). 101–118.
- Anderson, Stephen R. 1992. *A-morphous morphology*. Cambridge, UK: University of Cambridge Press.
- Anderson, Stephen R. 2005. *Aspects on the theory of clitics*. Oxford, UK: Oxford University Press.
- Axtell, James. 1981. *The Indian peoples of eastern America: A documentary history of the sexes*. New York, NY: Oxford University Press.
- Baird, Brandon O. 2010. Phonetic and phonological realizations of ‘broken glottal’ vowels in K’ichee’. In Kirill Shklovsky, Pedro Mateo Pedro & Jessica Coon (eds.), *Proceedings of Formal Approaches to Mayan Linguistics (FAMLi)* 1, 39–49. Cambridge, MA: MIT Working Papers in Linguistics.
- Beckman, Mary & Janet Pierrehumbert. 1986. Intonational structure in Japanese and English. *Phonology Handbook* 3. 255–309.
- Bennett, Ryan. 2016. Mayan phonology. *Language and Linguistics Compass* 10(10). 469–514.
- Benson, Edwin. 1999. *Mandan coloring book: An English & Mandan word builder - Book 5: Foods*. Twin Buttes, ND: Twin Buttes School District.
- Benson, Edwin. 2000. *Nu Eta — “We the People”: A Mandan language booklet for classroom use with simple vocabulary for anyone to learn a few everyday words in the Mandan language*. Twin Buttes, ND: Twin Buttes School District.
- Benson, Edwin, Corey Spotted Bear & Ryan Kasak. 2016. *Pt̄jini ropxímina’ki*. Bloomington, IN: Language Conservancy Press.

References

- Benson, Edwin, Cory Spotted Bear & Sara Trechter. 2009. *Transcription of Otter Sage's "Origin of the Mandan people" from 1988*. Ms. Twin Buttes, ND.
- Bhat, D. N. Shankara. 2004. *Pronouns*. Oxford, UK: Oxford University Press.
- Bird Bear, Martha. 2016. *Personal correspondence*. (In person conversations during fieldwork conducted in New Town and Mandaree, ND during the summer of 2015).
- Boas, Franz & Ella Deloria. 1941. *Dakota grammar*. Washington, DC: U.S. Government Printing Office.
- Boersma, Paul & David Weenik. 2020. *Praat: Doing phonetics by computer*. [Computer program]. Version 6.1.27, retrieved 13 October 2020 from <http://www.praat.org/>.
- Bonaparte, Louis-Lucien. 1862. *Langue basque et langues finnoises*. London, UK: Strangeways & Walden.
- Bowers, Alfred W. 1950. *Mandan social and ceremonial organization*. Chicago, IL: University of Chicago Press.
- Bowers, Alfred W. 1971. *Mandan-Hidatsa ethnohistory and linguistics*. (Collection of 155 hours of Mandan and Hidatsa narratives from Otter Sage and Annie Eagle archived at the American Philosophical Society in Philadelphia, PA).
- Boyle, John P. 2007. *Hidatsa morpho-syntax and clause structure*. Chicago, IL: University of Chicago dissertation.
- Boyle, John P. 2011. Switch-reference in Hidatsa: The evolution of a grammatical system. *International Journal of American Linguistics* 77(3). 413–428.
- Boyle, John P., Ryan Kasak, Sarah Lundquist, Armik Mirzayan, Jonnia Torres & Brittany Williams. 2016. *A preliminary study on accentuation in Hidatsa*. Paper presented at the annual meeting of Society for the Studies of Indigenous Languages of the Americas at the Linguistic Society of America annual meeting. Washington, DC.
- Caffarel, Alice, James Robert Martin & Christian M. I. M. Matthiessen. 2004. *Language typology: Functional perspective*. Philadelphia, PA: John Benjamins Publishing.
- Calloway, Colin G. 2008. *First peoples: A documentary history of American history*. 3rd edn. Boston, MA: Bedford/St. Martin's.
- Carmody, Maeve & Ryan M. Kasak. 2023. *Creating a treebank for Mandan*. Paper presented at the 43rd Siouan and Caddoan Languages Conference. University of Oklahoma: Norman, OK.
- Carter, Richard T. 1991a. Maximilian's Ruptare vocabulary: Philological evidence and Mandan phonology. In Frances Ingemann (ed.), *The Proceedings of the 1990 Mid-America Linguistics Conference and Conference of Siouan-Caddoan Linguistics*, 479–489. Lawrence, KS: University of Kansas.

- Carter, Richard T. 1991b. Old Man Coyote and the Wild Potato: A Mandan trickster tale. In H. Christopher Wolfart (ed.), *Linguistic studies presented to John L. Finlay*, 27–43. Winnipeg, MB: University of Manitoba.
- Carter, Richard T. 1983. Root-final consonant clusters in mandan. In Mary Marino (ed.), *Napao: A Saskatchewan Anthropology Journal*, vol. 13, 1–4.
- Catlin, George. 1844. *Letters and notes on the manners, customs, and condition of the North American Indians*. 3rd edn., vol. 2. New York, NY: Wiley & Putnam.
- Chafe, Wallace L. 1999. Florescence as a force in grammaticalization. In Spike Gildea (ed.), *Reconstructing grammar: Comparative linguistics and grammaticalization*, 39–64. Philadelphia, PA: John Benjamins Publishing.
- Chitoran, Ioana, Louis Goldstein & Dani Byrd. 2002. Gestural overlap and recoverability: Articulatory evidence from Georgian. In Carlos Gussenhoven & Natasha Warner (eds.), *Laboratory Phonology 7*, 419–447. New York, NY: Mouton de Gruyter.
- Cho, Taehong & Peter Ladefoged. 1999. Variation and universals of VOT: Evidence from 18 languages. *Journal of Phonetics* 27(2). 207–229.
- Chomsky, Noam. 1993. A minimalist program for linguistic theory. In Ken L. Hale & S. Jay Keyser (eds.), *The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, 1–52. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Coberly, Mary. 1979. A text analysis and brief grammatical sketch based on ‘Trickster Challenges the Buffalo’: A Mandan text collected by Edward Kennard. *Colorado Research in Linguistics* 8. 19–94.
- Coen, Noah. 2022. (para-)adpositional morphosyntax in Siouan: A case study of Lakota-Dakota-Nakota, Catawba, and Crow. In Ryan M. Kasak, Catherine Rudin, Armik Mirzayan & Samiron Dutta (eds.), *Proceedings of the 41st Siouan and Caddoan Languages Conference*, 13–58. Norman, OK: University of Oklahoma Department of Modern Languages, Literatures, & Linguistics.
- Croft, William. 2003. *Typology and universals*. 2nd edn. Cambridge, UK: Cambridge University Press.
- Cumberland, Linda A. 2005. *A grammar of Assiniboine: A Siouan language of the Northern Plains*. Bloomington, IN: Indiana University dissertation.
- Cumberland, Linda A. & Robert L. Rankin. 2012. *Kaáñze íe wayáje: an annotated dictionary of kaw (kanza)*. Kaw City, OK: Kanza Language Project of the Kaw Nation.
- Densmore, Frances. 1923. *Mandan and Hidatsa music* (Smithsonian Institution, Bureau of American Ethnology, Bulletin 80). Washington, DC: United States Government Printing Office.

References

- Dorsey, James Owen. 1885. On the comparative phonology of four Siouan languages. In *Annual report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and condition of the Institution for the year 1883*, 919–930. Washington, DC: Government Printing Office.
- Dorsey, James Owen & John R. Swanton. 1912. *A dictionary of the Biloxi and Ofo languages* (Smithsonian Institution, Bureau of American Ethnology, Bulletin 47). Washington, DC: United States Government Printing Office.
- Drummond, Alexei J. & Andrew Rambaut. 2007. BEAST: Bayesian evolutionary analysis by sampling trees. *BMC Evolutionary Biology* 7. 214.
- Dryer, Matthew S. 2013. Order of subject, object and verb (v2020.3). In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*. Zenodo. <https://doi.org/10.5281/zenodo.7385533>.
- Einaudi, Paula Ferris. 1976. *A grammar of Biloxi*. New York, NY: Garland Publishing.
- Elvira-García, Wendy. 2022. *Create-pictures-with-tiers.praat*. [Computer program]. Version 6, retrieved 9 August 2024 from https://github.com/wendyelviragarcia/create_pictures/blob/master/create_pictures.praat.
- Erdoes, Richard & Alfonso Ortiz. 1998. *American Indian trickster tales*. New York, NY: Penguin.
- Fenn, Elizabeth A. 2015. *Encounters at the heart of the world: A history of the Mandan people*. New York, NY: Hill & Wang.
- Gick, Bryan. 1999. A gesture-based account of intrusive consonants in english. *Phonology* 16(1). 29–54.
- Graczyk, Randolph. 1987. Switch reference in Crow: An emergent category. In Paul Kroeber & Robert Moore (eds.), *Native American languages and grammatical typology*, 119–135. Bloomington, IN: Indiana Linguistics Club.
- Graczyk, Randolph. 1997. *Switch-reference in Biloxi*. Paper presented at the annual meeting of the Society for the Studies of Indigenous Languages of the Americas in conjunction with the Linguistic Society of America. Chicago, IL.
- Graczyk, Randolph. 2007. *A grammar of Crow*. Lincoln, NE: University of Nebraska Press.
- Greer, Jill D. 2016. Baxoje-Chiwere grammar sketch. In Catherine Rudin & Binhah T. Gordon (eds.), *Advances in the study of Siouan languages and linguistics* (Studies in Diversity Linguistics 11), 183–228. Berlin, Germany: Language Science Press.
- Grimm, Thaddeus C. 2012. *The Siouan languages*. Newton, KS: Mennonite Press.
- Haiman, John & Pamela Munro. 1983. Introduction. In John Haiman & Pamela Munro (eds.), *Switch-reference and Universal Grammar*, ix–xv. Philadelphia, PA: John Benjamins.

- Hale, Kenneth & Josie White Eagle. 1980. A preliminary metrical account of Winnebago accent. *International Journal of American Linguistics* 46(2). 117–132.
- Hall, Nancy. 2006. Cross-linguistic patterns of vowel intrusion. *Phonology* 23(3). 387–429.
- Harper, Allan G. 1948. *Land problems on the Fort Berthold Indian Reservation arising from the Garrison Project*. Report. Missouri River Basin Investigations Staff. Region No. 2 Bureau of Indian Affairs. April 20, 1948. Revised, May 7, 1948.
- Headly, Robert K., Jr. 1971. *The origin and distribution of the Siouan speaking tribes*. Washington, DC: Catholic University of America M.A. thesis.
- Helmbrecht, Johannes. 2006. *Applicatives in Siouan languages: A study in comparative grammar*. Paper presented at the 3rd Workshop on Comparative Siouan Grammar. Rocky Mountain College: Billings, MT.
- Helmbrecht, Johannes. 2008. Decay and loss of applicatives in Siouan languages: A grammaticalization perspective. In Elisabeth Verhoeven, Stavros Skopeteas, Yong-Min Shin, Yoko Nishina & Johannes Helmbrecht (eds.), *Studies in grammaticalization*, 135–156. New York, NY: Mouton de Gruyter.
- Helmbrecht, Johannes & Christian Lehmann (eds.). 2006. *Hocqk-English/English-Hocqk Learner's Dictionary*. Erfurt, Germany: Arbeitspapiere des Seminars für Sprachwissenschaft der Universität Erfurt.
- Helmbrecht, Johannes & Christian Lehmann. 2008. Hocank's challenge to morphological theory. In K. David Harrison, David Rood & Arienne Dwyer (eds.), *Lessons from documented endangered languages*, 271–316. Philadelphia, PA: John Benjamins.
- Hollow, Robert C. 1970. *A Mandan dictionary*. Berkeley, CA: University of California, Berkeley dissertation.
- Hollow, Robert C. 1973a. Mandan texts. Box 3: Robert C. Hollow materials. (A set of 22 texts recorded, transcribed, and translated by Robert C. Hollow held at the North Dakota State Historical Society.)
- Hollow, Robert C. 1973b. Mandan texts. Box 5: Robert C. Hollow materials. (A set of Edward Kennard's (1933-1934) 22 texts re-elicited, transcribed, and translated by Robert C. Hollow held at the North Dakota State Historical Society.)
- Hollow, Robert C., A. Wesley Jones & David J. Ripley. 1976. *Mandan's teacher's guide: Elementary level*. Bismarck, ND: Mary College Indian Languages Program.
- Ingham, Bruce. 2003. *Lakota*. Munich, Germany: LINCOM Europa.
- Johnson, Craig M. 2007. *A chronology of Middle Missouri Plains village sites* (Smithsonian Contributions to Anthropology, Number 47). Washington, DC: Smithsonian Institution Scholarly Press.

References

- Jones, A. Wesley. 1983a. On Proto-Siouan ablaut and nasalization: a note to follow David S. Rood's paper. In Mary Marino (ed.), *Napao: A Saskatchewan Anthropology Journal*, vol. 13, 29–30.
- Jones, A. Wesley. 1983b. Some archaisms and innovations in Hidatsa. In Mary Marino (ed.), *Napao: A Saskatchewan Anthropology Journal*, vol. 8, 8–10.
- Jones, A. Wesley. 1991. The case of root extensions in Proto-Siouan. In Frances Ingemann (ed.), *The Proceedings of the 1990 Mid-America Linguistics Conference of Siouan and Caddoan Languages*, 505–517. Lawrence, KS: University of Kansas.
- Julian, Charles. 2010. *A history of the Iroquoian languages*. Winnipeg, MB: University of Manitoba dissertation.
- Kasak, Ryan M. 2012. *Treatment of verbitivity in Siouan languages*. Paper presented at the 32nd Siouan and Caddoan Languages Conference. University of Kansas: Lawrence, KS.
- Kasak, Ryan M. 2013. *A reconstruction of verbs of motion in Proto-Siouan*. Paper presented at the annual meeting of Society for the Studies of Indigenous Languages of the Americas at the Linguistic Society of America annual meeting. Boston, MA.
- Kasak, Ryan M. 2014a. *Núu’etaa íroonista! – Speak Mandan! Level 1*. Bloomington, IN: Language Conservancy Press.
- Kasak, Ryan M. 2014b. *Siouan preverbs, pronominals, and morphological theory*. Qualifying paper presented to the Yale University Linguistics Department. New Haven, CT.
- Kasak, Ryan M. 2015. A computational approach to Siouan phylogenetics. Ms. New Haven, CT: Yale University.
- Kasak, Ryan M. 2016. A distant genetic relationship between Siouan-Catawban and Yuchi. In Catherine Rudin & Binah T. Gordon (eds.), *Advances in the study of Siouan languages and linguistics* (Studies in Diversity Linguistics 11), 5–39. Berlin, Germany: Language Science Press.
- Kasak, Ryan M. 2019. *Affix ordering and templatic morphology in Mandan*. New Haven, CT: Yale University dissertation.
- Kasak, Ryan M. 2022. Topic and focus in Mandan. In Ryan M. Kasak, Catherine Rudin, Armik Mirzayan & Samiron Dutta (eds.), *Proceedings of the 41st Siouan and Caddoan Languages Conference*, 59–89. Norman, OK: University of Oklahoma Department of Modern Languages, Literatures, & Linguistics.
- Kasak, Ryan M. & Sarah Lundquist. 2019. Nasal harmony in hoocąk and mandan. In Ryan M. Kasak (ed.), *Proceedings of the 38th siouan and caddoan languages conference*, 99–122. Chicago, IL: Northeastern Illinois University Linguistics Department.

- Kaufman, David V. 2011. *Biloxi-English dictionary with English-Biloxi index*. Lawrence, KS: Kansas University ScholarWorks.
- Kennard, Edward. 1934. Mandan folkloristic texts. (Collection of 28 narratives elicited and transcribed by Edward Kennard held at the American Philosophical Society.)
- Kennard, Edward. 1936. Mandan grammar. *International Journal of American Linguistics* 9(1). 1–43.
- Kipp, James. 1852. Mandan vocabulary. Ms. Saint Louis, MO.
- Koontz, John E. 1984. Preliminary sketch of the Omaha-Ponka language. Ms. Boulder, CO: University of Colorado.
- Koontz, John E. 1985. Siouan subgrouping. Ms. Boulder, CO: University of Colorado.
- Kurz, Rudolf Friederich. 1937. *Journal of Rudolph Friederich Kurz: An account of his experiences among fur traders and American Indians on the Mississippi and the Upper Missouri Rivers during the years 1846 to 1852*. Washinton, DC: Government Printing Office.
- Larson, Rory M. 2005. *Acculturation terms in Omaha*. Lincoln, NE: University of Nebraska M.A. thesis.
- Larson, Rory M. 2016. Regular sound shifts in the history of siouan. In Catherine Rudin & Binah T. Gordon (eds.), *Advances in the study of Siouan languages and linguistics* (Studies in Diversity Linguistics 11), 63–82. Berlin, Germany: Language Science Press.
- Lefebvre, Claire & Pieter Muysken. 1988. *Mixed categories: Nominalizations in Quechua*. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Lehmer, Donald J. 1971. *Introduction to Middle Missouri archeology* (National Park Service, Anthropological Papers 1). Washington, DC: Department of the Interior.
- Leman, Wayne. 2013. *A reference grammar of the Cheyenne language*. 4th edn. Raleigh, NC: Lulu Press.
- Linn, Mary Sarah. 2000. *A grammar of Euchee (Yuchi)*. Lawrence, KS: University of Kansas dissertation.
- Lipkind, William. 1945. *Winnebago grammar*. New York, NY: King's Crown Press.
- Little Owl, Ronald Samuel & Christian Engell Rhod. 1992. *Núeta-Mandan*. (Unpublished textbook to accompany Mandan course at Fort Berthold Community College.) Ms. New Town, ND.
- Lombardi, Linda. 2001. Why place and voice are different: Constraint-specific alternations in Optimality Theory. In Linda Lombardi (ed.), *Segmental phonology in Optimality Theory*, 13–45.

References

- Lovett, William Andrew. 1975. *Last Mandan Indian, 108, is buried*. News release. Department of the Interior, Bureau of Indian Affairs. Prepared Jan. 14, 1975.
- Lowie, Robert H. 1909. *The assiniboine*, vol. 4 (Anthropological papers of the American Museum of Natural History). New York, NY: American Museum of Natural History.
- Lowie, Robert H. 1913. Societies of the Crow, Hidatsa and Mandan Indians. *Anthropological Papers of the American Museum of Natural History* 11(3). 145–358.
- Lowie, Robert H. 1942. The Crow language: grammatical sketch and analyzed text. In *University of California Publications in American Archaeology and Ethnology*, vol. 39(1), 1–142.
- Lundquist, Sarah. 2015. *Phonology and function of reduplication in Hoocqk*. Paper presented at the 35nd Siouan and Caddoan Languages Conference. Tunica-Biloxi Tribe: Marksville, LA.
- Maddieson, Ian. 2013a. Absence of Common Consonants. In Matthew S. Dryer & Martin Haspelmath (eds.), *The World Atlas of Language Structures Online*. Leipzig, Germany: Max Planck Institute for Evolutionary Anthropology. <http://wals.info/chapter/18>.
- Maddieson, Ian. 2013b. Consonant inventories. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*. Leipzig, Germany: Max Planck Institute for Evolutionary Anthropology. <https://wals.info/chapter/1>.
- Malouf, Carling. 1963. Crow-Flies-High (32MZ1), a historic Hidatsa village in the Garrison Reservoir Area, North Dakota. In Frank H. H. Roberts Jr. (ed.), *Smithsonian Institution Bureau of American Ethnography Bulletin 185* (River Basin Survey Papers, No. 29), 133–166. Washington, DC: United States Government Printing Office.
- Manova, Stela & Mark Aronoff. 2010. Modeling affix order. *Morphology* 20(1). 109–131.
- Mapp, Paul W. 2013. *The elusive West and the contest for empire*. Chapel Hill, NC: University of North Carolina Press.
- Matthews, Washington. 1877. Ethnography and philology of the Hidatsa Indians. In *United States Geological and Geographical Survey Miscellaneous Publications* 7, iii–238. Washington, DC: Government Printing Office.
- Matthews, Washington. 1878. A folk-tale of the Hidatsa Indians. *The Folk-Lore Record* 1. 136–143.
- Maximilian, Prinz zu Wied-Neuwied. 1839. *Reise in das innere Nord-America in den Jahren 1832 bis 1834*. Koblenz, Prussia: J. Hölscher.
- McCarthy, John J. 1986. OCP effects: Gemination and antigemination. *Linguistic Inquiry* 17(2). 207–263.

- Medicine Horse, Mary Helen. 1987. *Apsaalooke bacheeitche [Crow chiefs]*. Crow Agency, MT: Bilingual Materials Development Center.
- Meyer, Roy W. 1977. *The village Indians of the Upper Missouri: The Mandans, Hidatsa, and Arikaras*. Lincoln, NE: University of Nebraska Press.
- Miner, Kenneth L. 1979. Dorsey's Law in Winnebago-Chiwere and Winnebago accent. *International Journal of American Linguistics* 45(1). 25–33.
- Miner, Kenneth L. 1981. Metrics, or Winnebago made harder. *International Journal of American Linguistics* 47(4). 340–342.
- Mirzayan, Armik. 2010. *Lakota intonation and prosody*. Boulder, CO: University of Colorado, Boulder dissertation.
- Mithun, Marianne. 1986. Evidential diachrony in Northern Iroquoian. In Wallace Chafe & Johanna Nichols (eds.), *Evidentiality: The linguistic coding of epistemology*. Norwood, NJ: Ablex Publishing Corporation.
- Mixco, Mauricio. 1997a. *Mandan*. Munich, Germany: LINCOM Europa.
- Mixco, Mauricio. 1997b. Mandan switch reference: A preliminary view. *Anthropological Linguistics* 39. 220–298.
- Moore, John H. 1999. *The Cheyenne*. Malden, MA: Blackwell Publishing.
- Neely, Justin. 2019. *Potawatomi dictionary*. Online dictionary of Potawatomi and English lexemes compiled by Justin Neely in association with the Citizen Potawatomi Nation. Accessed 6-10-2020. Available online at: <http://www.potawatomidictionary.com/>.
- Nespor, Marina & Irene Vogel. 1986. *Prosodic phonology*. Dordrecht, Netherlands: Foris.
- Nichols, Johanna. 1988. On alienable and inalienable possession. In William Shipley (ed.), *In honor of Mary Hass: From the Haas Festival Conference on Native American linguistics*, 557–609. Berlin, Germany: Mouton de Gruyter.
- Oliverio, Giulia R. M. 1997. *Tutelo instrumental prefixes: Implications for Siouan*. Paper presented at the 17th annual Siouan and Caddoan Languages Conference. Wayne State College: Wayne, NE.
- Panick, Sean D. 2021. *R-nasalization in Hoocqk: A diachronic and synchronic perspective*. Long Beach, CA: California State University, Long Beach M.A. Thesis.
- Park, Indrek. 2012. *A grammar of Hidatsa*. Bloomington, IN: Indiana University dissertation.
- Park, Indrek. 2021. *Animacy in Hidatsa*. Paper presented at the 41st Siouan and Caddoan Languages Conference. Held online via Zoom due to the COVID-19 pandemic.
- Parks, Douglas R. 1976. *A grammar of Pawnee*. New York, NY: Garland Publishing.
- Parks, Douglas R., Janet Beltran & Ella P. Waters. 1979. *Introduction to the Arikara language*. Bismarck, ND: Mary College.

References

- Parks, Douglas R. & Raymond J. Demallie. 2002. *AISRI Interactive Database Search*. Online database of Yanktonai Dakota, Arikara, Assiniboine, Skiri Pawnee, and South Band Pawnee compiled by Douglas Parks and Raymond Demallie at the American Indian Studies Research Institute at Indiana University, Bloomington. Accessed 1-23-2016. Available online at: <http://zia.aisri.indiana.edu/dict-search/>.
- Parks, Douglas R., A. Wesley Jones & Robert C. Hollow (eds.). 1978. *Earth lodge tales from the Upper Missouri: Traditional stories of the Arikara, Hidatsa, and Mandan*. Bismarck, ND: Mary College.
- Parks, Douglas R. & Robert L. Rankin. 2001. Siouan languages. In Raymond J. DeMallie (ed.), *Handbook of North American Indians*, Vol. 13 (Plains), 94–114. Washington, DC: Smithsonian Institution.
- Picard, Marc. 1994. *Principles and methods in historical phonology: From Proto-Algonkian to Arapaho*. Montreal, QC: McGill-Queen's University Press.
- Pierrehumbert, Janet & David Talkin. 1992. Lenition of /h/ and glottal stop. In Gerard J. Docherty & D. Robert Ladd (eds.), *Papers in Laboratory Phonology II: Gesture, segment, prosody*, 90–127. Cambridge, UK: Cambridge University Press.
- Prince, Alan. 1990. Quantitative consequences of rhythmic organization. In Michael Ziolkowski, Manuela Noske & Karen Deaton (eds.), *Parasession on the syllable in phonetics and phonology*, 355–398. Chicago, IL: Chicago Linguistic Society.
- Prince, Alan & Paul Smolensky. 1993. *Optimality Theory: Constraint interaction in Generative Grammar*. Ms. New Brunswick, NJ: Rutgers University, New Brunswick, and University of Colorado, Boulder.
- program, North Dakota Studies. n.d. *Mandan, Hidatsa, Sahnish*. Website created by the Audience Engagement and Museums division of the State Historical Society of North Dakota. Available online at: <https://www.ndstudies.gov/mandan-hidatsa-sahnish>.
- Quintero, Carolyn. 2004. *Osage grammar*. Lincoln, NE: University of Nebraska Press.
- Quintero, Carolyn F. 1997. *Osage phonology and verbal morphology*. Amherst, MA: University of Massachusetts Amherst dissertation.
- Rankin, Robert L. 1977. From verb to auxiliary to noun classifier and definite article: Grammaticalization of the Siouan verbs 'sit', 'stand', 'lie'. In Robert Brown Jr., Kathleen Houlihan, Larry G. Hutchinson & Andrew MacLeish (eds.), *Proceedings of the 1976 Mid-America Linguistics Conference*, 273–283. Minneapolis, MN: University of Minnesota Departments of English & Linguistics.

- Rankin, Robert L. 1995. *On Quapaw (and Siouan) “ablaut”*. Paper presented at the 15th Annual Siouan and Caddoan Languages Conference. University of New Mexico: Albuquerque, NM.
- Rankin, Robert L. 1996. Deeper genetic relationships in North America: Some tempered pessimism. In David Librik & Roxane Beeler (eds.), *Berkeley linguistics society: special session on historical issues in Native American languages: proceedings of the 22nd annual meeting*, 117–128.
- Rankin, Robert L. 1998. *Siouan-Catawban-Yuchi genetic relationship: With a note on Caddoan*. Paper presented at the 18th Annual Siouan-Caddoan Linguistics Conference. Indiana University: Bloomington, IN.
- Rankin, Robert L. 2004. The history and development of Siouan positional with special attention to polygrammaticalization in Dhegiha. *Sprachtypologie und Universalienforschung* 57. 202–227.
- Rankin, Robert L. 2005. Quapaw. In Heather K. Hardy & Janine Scancarelli (eds.), *Native languages of the Southeastern United States*, 454–540. Lincoln, NE: University of Nebraska Press.
- Rankin, Robert L. 2010. *The place of Mandan in the Siouan language family*. Paper presented at the 30th annual Siouan and Caddoan Languages Conference. Northeastern Illinois University: Chicago, IL.
- Rankin, Robert L., John Boyle, Randolph Graczyk & John Koontz. 2003. A synchronic and diachronic perspective on ‘word’ in Siouan. In Robert M. W. Dixon & Alexandra Y. Aikhenvald (eds.), *Word: A cross-linguistic typology*, 180–204. Cambridge, UK: Cambridge University Press.
- Rankin, Robert L., Richard T. Carter & A. Wesley Jones. 1998. Proto-Siouan phonology and grammar. In Xingzhong Li, Luis Lopez & Tom Stroik (eds.), *Papers from the 1997 Mid-America Linguistics Conference*, 366–375. Columbia, MO: University of Missouri-Columbia.
- Rankin, Robert L., Richard T. Carter, A. Wesley Jones, John E. Koontz, David S. Rood & Iren Hartmann (eds.). 2015. *Comparative Siouan dictionary*. Available online at <http://csd.clld.org/>. Leipzig, Germany: Max Planck Institute for Evolutionary Anthropology.
- Riggs, Stephen Return. 1893. *Dakota grammar, texts, and ethnography*. Washington, DC: Government Printing Office.
- Rood, David S. 1979. Siouan. In Lyle Campbell & Marianne Mithun (eds.), *The languages of Native America*, 236–298. Austin, TX: University of Texas Press.
- Rood, David S. 1983. A preliminary consideration of Proto-Siouan abalut. In Mary Marino (ed.), *Napao: A Saskatchewan Anthropology Journal*, vol. 13, 24–28.

References

- Rood, David S. & Allan R. Taylor. 1996. Sketch of Lakota, a Siouan language. In Ives Goddard (ed.), *Handbook of North American Indians*, vol. 17. Washington, D.C.: Smithsonian Institute.
- Rudes, Blaire A. 2007. *Catawba verb morphology*. Ms. Charlotte, NC: University of North Carolina at Charlotte.
- Sampson, Rodney. 1999. *Nasal vowel evolution in Romance*. New York, NY: Oxford University Press.
- Sapir, Edward. 1929. Central and North American languages. In *Encyclopædia Britannica*, vol. 5, 138–141.
- Schoolcraft, Henry Rowe. 1853. *Historical and statistical information respecting the history, condition, and prospects of the Indian tribes of the United States; collected and prepared under the direction of the Bureau of Indian Affairs per act of Congress of March 3rd, 1847*, vol. 3. Philadelphia, PA: Lippincott, Grambo & Company.
- Selkirk, Elizabeth O. 1986. On derived domains in sentence phonology. *Phonology Yearbook* 3. 371–405.
- Selkirk, Elizabeth O. 2011. The syntax-phonology interface. In John Goldsmith, Jason Riggle & Alan C. Yu (eds.), *The handbook of phonological theory*, 2nd edn., 435–484.
- Silverman, Daniel. 1995. *Phasing and recoverability*. Los Angeles, CA: University of California, Los Angeles dissertation.
- Stearn, Esther W. & Allen E. Stearn. 1945. *The effect of smallpox on the destiny of the Amerindian*. Boston, MA: B. Humphries.
- Taylor, Allan R. 1976. On verbs of motion in Siouan languages. *International Journal of American Linguistics* 42(4). 287–296.
- Thompson, Stith. 1966. *Tales of the North American Indians*. Bloomington, IN: Indiana University Press.
- Tomkins, William. 1926. *Universal Indian Sign Language of the Plains Indians of North America*. San Diego, CA: General Grand Chapter.
- Torres, Jonnia. 2013a. *An acoustic analysis of Mandan voiceless stops*. Chicago, IL: Northeastern Illinois University Master's thesis.
- Torres, Jonnia. 2013b. Corpus-based linguistic investigation of stop consonants for Siouan languages: A Lakota case study. Ms. Boulder, CO: University of Colorado.
- Torres, Silvana Karin. 2010. *Switch-reference in Biloxi: The architecture of a complex morpho-discourse phenomenon*. Chicago, IL: Northeastern Illinois University Master's thesis.
- Trechter, Sara. 1995. *The pragmatic functions of gender deixis in Lakota*. Lawrence, KS: University of Kansas dissertation.

- Trechter, Sara. 2012a. In the Words of Our Ancestors: The Mandan Language and Oral Traditions Preservation Project. (Transcriptions that accompany two DVDs of Edwin Benson relaying traditional Mandan narratives.)
- Trechter, Sara. 2012b. *Mandan texts*. (A set of 16 narratives collected by Sarah Trechter in Twin Buttes, ND with Edwin Benson and Cory Spotted Bear between 2007 and 2010.)
- Trechter, Sara. 2013. *Spatial shift and Mandan positionals*. Paper presented at the annual meeting of Society for the Studies of Indigenous Languages of the Americas at the Linguistic Society of America annual meeting. Boston, MA.
- Uffmann, Christian. 2007. Intrusive [r] and optimal epenthetic consonants. *Language Sciences* 29(2-3). 451–476.
- Ullrich, Jan (ed.). 2011. *New Lakota dictionary*. 2nd edn. Bloomington, IN: Lakota Language Consortium.
- Ullrich, Jan & Ben Black Bear. 2016. *Lakota grammar handbook*. Bloomington, IN: Lakota Language Consortium.
- Voegelin, Charles F. 1941. Historical results of Crow-Hidatsa comparisons, according to three methods. *Proceedings of the Indiana Academy of Science* 50. 39–42.
- Wallace, Karen Kay. 1993. *Verb incorporation and agreement in Crow*. Los Angeles, CA: University of California, Los Angeles dissertation.
- Whitman, William. 1947. Grammar of Ioway-Oto. *International Journal of American Linguistics* 13(4). 233–248.
- Will, George F. & Herbert J. Spinden. 1906. The Mandans: A study of their culture, archaeology and language. *Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University* 3(4). 79–219.
- Wol fart, H. Christoph & Janet F. Carroll. 1981. *Meet Cree: A guide to the language*. 2nd edn. Lincoln, NE: University of Nebraska Press.
- Wolff, Hans. 1950a. Comparative Siouan I. *International Journal of American Linguistics* 16(2). 61–66.
- Wolff, Hans. 1950b. Comparative Siouan II. *International Journal of American Linguistics* 16(3). 113–121.
- Wolff, Hans. 1950c. Comparative Siouan III. *International Journal of American Linguistics* 16(4). 168–178.
- Wolff, Hans. 1951. Comparative Siouan IV. *International Journal of American Linguistics* 17(4). 197–204.
- Wolvengray, Arok. 1991. A marker of focus in Mandan discourse. In Frances Ingemann (ed.), *The proceedings of the 1990 Mid-America Linguistics Conference and Conference of Siouan-Caddoan Languages*. Lawrence, KS: University of Kansas.

References

- Wright, Richard. 1996. *Consonant clusters and cue preservation in Tsou*. Los Angeles, CA: University of California, Los Angeles dissertation.
- Zimmerman, Larry J. & Richard Whitten. 1980. Mass grave at Crow Creek in South Dakota reveals how Indians massacred Indians in 14th century attack. *Smithsonian* 11(6). 100–109.

A grammar of Mandan

This book presents an overview of the grammar of the Mandan language (Siouan), traditionally spoken in North Dakota along the Upper Missouri River in the United States. The last L1 speaker of Mandan passed away in 2016, so this book stems from personal fieldwork and fieldwork done by earlier researchers in the 20th century. This work has been written with a dual purpose: to be used by members of the the Mandan community who wish to better understand the workings of their ancestral language, but also as a resource for linguists who wish to investigate several of the typologically notable features of the Mandan language.