Patterns of Cree preverb usage in early child language: A longitudinal case study

by

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Abstract

This thesis offers a preliminary investigation into the acquisition of a class of morpheme called "preverb" in Northern East (NE) Cree (Central Algonquian, ISO 639-3 code crl), for one child code-named "Daisy", acquiring NE Cree as a first language. Daisy is one of three participants who were filmed for the Chisasibi Child Language Acquisition Study (CCLAS), which is the first in-depth longitudinal acquisition project of an Algonquian language. Her language development was documented for 27 months with 32 sessions (3;08.10 – 5;11.25), and for this research, of 32 sessions present, 11 of them were considered. This is the second study on preverb acquisition in the literature, and the first in depth case study of Daisy's acquisition of preverbs.

The first study on preverb acquisition in NE Cree was conducted by Brittain & Rose (2021), in which they examined a younger child code-named Ani (2;01 to 4;03). They argue that Ani's pattern of development suggests a learning path which is driven by grammatical complexity, as Ani's preverb inventory consists only of what they refer to as "phonologically stable" forms (forms which do not alternate for initial change) and "positionally stable" forms (forms which can only occupy one position in the verb stem). Ani uses preverbs with the potentially more complex conjunct order seven months later than with the independent. Also, she does not combine preverbs even though it is quite common in the language, and she used each preverb in her inventory with one inflection type only, even where a choice of inflections was available. My research revolves around these findings, and in addition to this, in order to see a sample of preverb usage in child-directed speech (CDS), one session of the adult input was considered.

Findings show Daisy using even the supposedly more challenging forms (as argued for by Brittain & Rose) from the earliest session (at age 3;08). Moreover, based on the research questions examined in this thesis, no pattern of acquisitional development emerged in Daisy's usage of preverbs, contrasting with findings for Ani. Crucially, Daisy's pattern of preverb production resembles more closely that of the adult as represented by the CDS: both speakers pair preverbs more frequently with the conjunct than with the independent; both frequently use combinations of two and sometimes three preverbs; and, where a given preverb allows combining with more than one type of inflection, both Daisy and the adult use varieties of inflection. Brittain & Rose found that Ani never uses initial change with preverbs, while Daisy and the adult both do, but with relatively few preverb types. Additionally, the most frequent types of preverbs in Daisy's speech are also the most common ones in the adult input, and similarly, the least frequent ones are not present in the CDS.

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List of Abbreviations

1 = first person

2 = second person

3 = third person animate

NON3 = non-third person

AI = animate intransitive

AI-TR = transitivized AI verbs

AN.PL = animate plural

APPL = applicative

CAUS = causative

CIN = conjunct indicative neutral

CIN.SJ = conjunct indicative neutral subjunctive

CMP = completive aspect

DEM = demonstrative

DIM = diminutive

EMPH = emphasis particle

ENG = English

EPEN = epenthesis

FIN = verb final

FOC = focus particle

FUT = future tense

HES = hesitation particle

IC = initial change

II = inanimate intransitive

IMP = imperative

IMP,NEG = imperative negative

IMPERS = impersonal

INAN = inanimate

INCL.PL = inclusive plural

INDEF = indefinite

IIN = independent indicative neutral

INCL = inclusive

INTR = intransitive

LIC = lexicalized initial change

LOC = locative

NEG = negative

NT = neutral

O = object

OBV = obviative

PASS = passive

PAST = past tense

PL = plural

PQP = polar question particle

PRON = pronoun

PVB = preverb

REL = relational

RFLX = reflexive

S = subject

SG = singular

SJ = subjunctive

TA = transitive animate

TI = transitive inanimate

WH = wh word

Chapter 1: Introduction

1 Scope and objectives

The question of how children acquire a language looms large in language studies. Various hypotheses have been put forward in an attempt to solve this puzzle: some scholars argue for an innate, universal, and language-specific learning mechanism for children which is driven by grammatical complexity (Chomsky, 1959), while others reject the notion of innate language-specific instinct, and appeal solely to environmental factors such as input frequency and experience in language learning. However, much of the data analyzed are coming from only a relatively small number of languages, many of which tend toward the isolating end of the typological scale, mostly Indo-European languages, while polysynthetic languages have not been the subject of much acquisition work. Given that children's tasks in learning languages would seem to differ depending on the position where the language falls in the continuum, polysynthetic languages may offer unique puzzles and problems to our understanding of language acquisition. Additionally, due to the increasing impact of English on these languages, many of which are endangered, the number of people learning polysynthetic languages as their first language have been decreasing dramatically, therefore, as Mithun (1989, p.286) noted, "there is much to discover and little time". In order to contribute to this under-represented body of research and close the gap in the literature, the Chisasibi Child Language Acquisition Study (CCLAS) was initiated in 2004 at Memorial University, in collaboration with the Cree School Board of Québec in Chisasibi (Brittain et al., 2007). Three children participated in the study, one of whom was aged 1;09 (one year nine months) at the start of the study, the two forming an older cohort, entering the study at ages 3.08 and 4.04. Their first language is Northern East (NE) Cree (Central

Algonquian, ISO 639-3 code crl). The details of the methodology employed in CCLAS can be found in Chapter 3, Methodology. To date, a number of studies have been undertaken on these three children's first language acquisition in terms of their phonological and morphological development (among others, Swain, 2008; Terry, 2010; Johansson, 2012; O'Neill, 2014; Bryant, 2013; Pile, 2018). Brittain & Rose 2021 (henceforth referred to as Brittain & Rose unless the full reference is required for clarity) is the only research that has been undertaken on the acquisition of the class of morpheme in Algonquian studies referred to as the "preverb", in which they examine data from the youngest child, Ani, for the age range 2;01.12 to 3;08.24.

In this thesis, I investigate the acquisition of the preverb, for one of the two older CCLAS participants, code-named "Daisy" (3;08.10 – 5;11.25). Additionally, in order to see whether Daisy's linguistic behaviour is a feature of acquisition (shows a developmental pattern) or resembles more an adult-like behaviour that reflects the frequency distribution of preverbs in the language, one session of child-directed speech (CDS) is considered. Building on Brittain & Rose's research on Ani's acquisition of preverbs, I identified a number of specific questions to address in my research. These are listed below, and for any reader unfamiliar with the technical terminology I use at this point, such terms will be explained at the relevant points in my work:

1. As verbs inflected with the conjunct order appear relatively late in Ani's speech (Terry, 2010), Brittain & Rose (2021) argue the conjunct may pose a greater learning challenge to the child than the independent, leading to the question: In Daisy's productions of verbs with preverbs, is there evidence of an early preference for the independent over the conjunct? I examine, for constructions with preverbs, the relative

proportions of all three inflection types (independent, conjunct and imperative) in Daisy's speech over time.

2. Ani's inventory doesn't include any changed form preverbs, leading to the question: Does Daisy apply initial change to preverbs?

3. All but one of the preverbs in Ani's inventory are of the grammatical type, leading to the question: Does Daisy use grammatical, directional and lexical preverbs?

4. Although more than one preverb can appear in a given verb complex, Ani never uses more than one preverb per verb complex, leading to the question:. What are the details of preverb combination in Daisy's speech?

5. Ani always pairs a given preverb with just one inflectional order, even if there is a choice; for example, although *wîh* 'want' can be used with independent or conjunct verbs, Ani only uses it with independent verbs. My final question arising from Brittain & Rose is thus: Does Daisy pair a given preverb type with more than one inflectional order in cases where this is possible, and if so, what are the details?

Brittain & Rose argue that the details of Ani's preverb production may be accounted for in terms of development; for example, using one preverb is arguably less complex than using two (question 4), and using a given preverb with one inflectional order may be less complex a task

than using it with the full range of inflectional orders possible for a given preverb. Details of Brittain & Rose's arguments are discussed in Chapter 2.

2 Significance of the research

The present study has significance for different areas of language studies. First, it contributes to the literature on the acquisition of complex predicates, as well as, more generally, on acquisition in polysynthetic languages. Given that just a small number of languages have been subject of acquisition work, and that these tend towards isolating in their typology, (despite the recent efforts to rectify this; cf. Forshaw, 2016)), it remains the case that little is known about the acquisition of the complex paradigms of polysynthetic languages (Stoll, 2015). Acquisition studies of languages with greater morphological complexity remain an important research priority. Further, no study has been undertaken on the acquisition of preverbs except for the work of Brittain & Rose. Therefore, this research stands to shed light on this aspect of the Cree verb complex. Additionally, the CCLAS project is cooperating with Speech Language Pathologists (SLPs) in Chisasibi to generate screening materials for children between the ages two and five, and to help SLP practitioners develop a list of language milestones. Having knowledge of the details of the developmental sequence of preverbs and having the details of preverbs themselves will contribute to achieving these goals.

3 Presentation of the data in the text

For the reader's convenience, following the conventions adopted by Brittain (2001), although the community orthographic standard is to use syllabics, all the data in this thesis are represented in roman orthography, and long vowels are represented as <â>. In the cases where data from other

sources are cited, the key to abbreviations is footnoted. Unless otherwise noted, all data samples provided in this thesis are NE Cree and all child examples and CDS samples are from the CCLAS database. NE Cree data are presented in the following manner:

(1)

Line 1	Orthographic representation	*Nîyi niki muwâu.*		
Line 2	Morphological components	nîyi	ni-ki	muwâ-u
Line 3	Morphological analysis	PRON.1	1-PVB.FUT	eat(TA)-IND.S:1.SG/O:3.SG
Line 4	English translation	'I myself will eat it (an).'		

The level of glossing detail I provide varies to meet what the discussion requires. In the CCLAS database, names have been removed to protect the identity of the participants and their families and friends. All names of people are replaced in Phon by the sequence 'nnn'. I have systematically replaced this sequence, to make the examples easier to interpret, with "Lucy" for a girl/woman, and "James" for a boy/man. Note that these are code names and don't represent any real people, for privacy reasons. All examples of CDS are taken from Daisy's corpus.

4 Thesis structure

This thesis is organized in the following manner. Chapter 2 sets the stage for the thesis by providing geographic, demographic and linguistic information about NE Cree, and lays out the grammatical details of preverbs in Algonquian languages. I also present and detail preverbs in NE Cree and discuss Brittain & Rose (2021), in detail. Chapter 3 details the methodology employed in this study, providing information pertinent to the fieldwork, source of the data, data processing, sampling, criteria for productivity, potentially innovative forms and excluded utterances. In

Chapter 4, I provide an overview of Daisy's preverb usage as well as a summary of preverb distribution in one session of the CDS. In Chapter 5, I provide details of Daisy's preverb production, analyzing each preverb respectively with a focus on the issue of productivity, and Chapter 6 discusses the results in light of research questions and summarizes the observations.

Chapter 2: Background

1 Introduction

In this chapter I provide a brief summary of the geography and demography of NE Cree, together with the description of pertinent linguistics characteristics of the language (Section 2). In Section 3, I introduce preverbs, and in Sections 4 and 5, respectively, I discuss the three types of preverbs for NE Cree: grammatical (Section 4) and directional and lexical (Section 5). The final section describes Brittain & Rose's main findings.

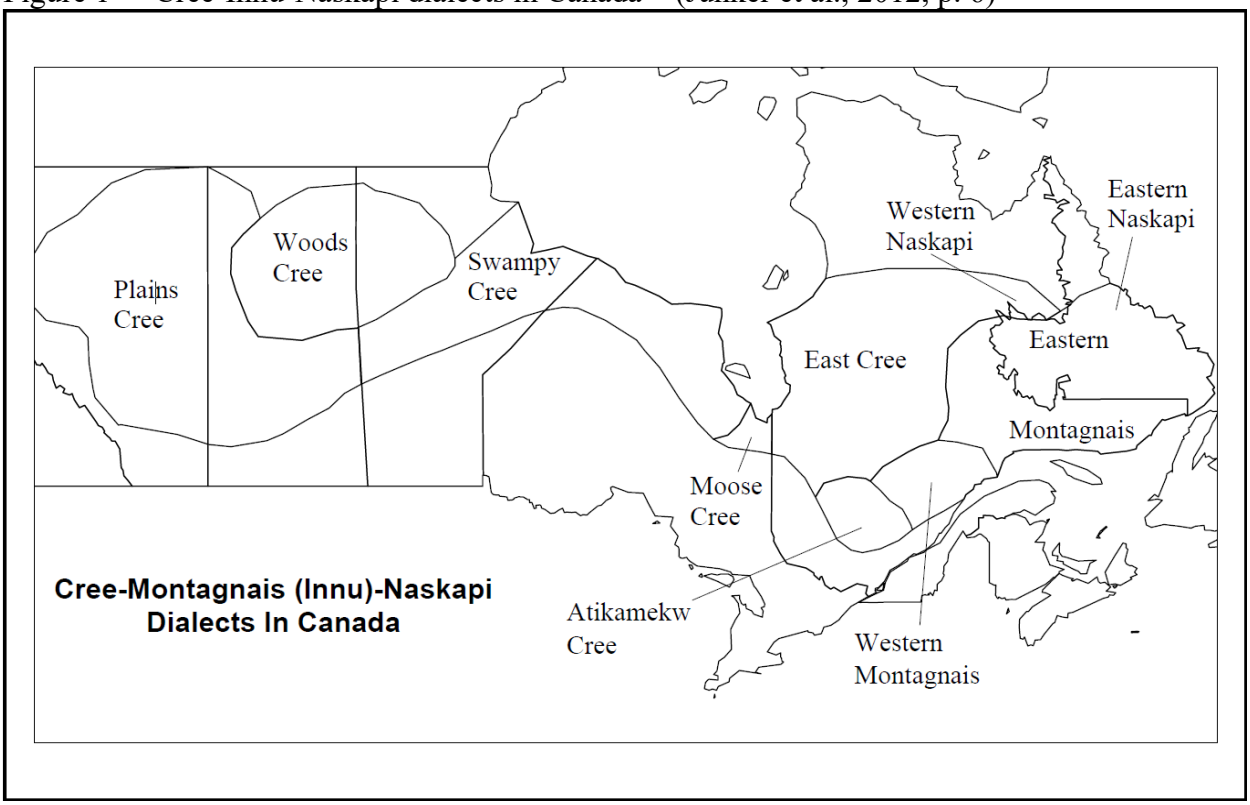
2 Overview of NE Cree

2.1 Situating NE Cree

The Algonquian language family is one of the Indigenous First Nations languages of Canada, and is divided into three subgroups: Plains, Central, and Eastern. The Cree-Innu-Naskapi (CIN)[1] dialect continuum is a Central Algonquian language that is spoken across Canada from the Rocky Mountains of Alberta to the eastern coast of Labrador (Figure 1). East Cree is one of several varieties of which the Cree sub-dialect is comprised, together with Swampy Cree, Moose Cree, Plains Cree and Woods Cree (Junker et al., 2012). For the purposes of this thesis, the continuum of Cree dialects will be referred to as 'Cree'.

1 Innu is formerly called Montagnais.

Figure 1 Cree-Innu-Naskapi dialects in Canada (Junker et al., 2012, p. 6)



East Cree, also known as James Bay Cree, is spoken in the James Bay region of northwest Quebec (MacKenzie, 1980). Brittain & MacKenzie (2010) reported the number of East Cree speakers as approximately 14,000, while, more recently, The Grand Council of the Crees puts the number at nearly 20,000 (Cree Nation Government, 2019).

East Cree divides into two major sub-dialect groupings: The Northern and Southern dialects. The former is spoken in the communities of Chisasibi, Eastmain, Wemindji, and Whapmagoostui (Junker et al., 2012); see Figure 2. The latter is further subdivided into the coastal and inland dialects. Southern Coastal East Cree is spoken in Eastmain and Waskaganish, and Southern Inland East Cree is spoken in the communities of Nemaska, Waswanipi, Ouje-Bougoumou and

Mistissini. The varieties differ from one another in fairly minor ways, such as in phonemic and phonetic inventories or lexical choices. Figure 2 shows the East Cree communities and the distribution of the sub-dialects just described.

Figure 2 East Cree communities (Junker & MacKenzie, 2003, p. 202)

Table 1 shows the estimated number of NE Cree speakers for each community, reported by Statistics Canada (2016). NE Cree is the primary language spoken in Chisasibi (formerly known

as Fort George), though some Inuktitut is also spoken there. English, and to a lesser extent French, is widely spoken as the second language, with most Cree speakers being bilingual, and in some cases trilingual.

Table 1 Distribution of NE Cree speakers by community (Statistics Canada, 2016)

Community	Population	Report Knowledge of Cree
Chisasibi	2967	2640
Eastmain	866	815
Wemindji	1444	1320
Whapmagoostui	984	905
Total	**6261**	**5680**

Even though these figures, in terms of language vitality, are not alarming, given the fact of English becoming increasingly widespread as a second language, some scholars believe that East Cree in general may face the risk of language loss in the future if the necessary precautions are not taken (Brittain & MacKenzie, 2010; Henke, 2020). Moreover, a report published by the Cree Nation Government (2018) identifies language loss as a serious issue and recommends urgent calls for action. The Endangered Languages Project (2020) categorizes East Cree as 'vulnerable' on the six point scale they adopt to classify levels of concern; categories on this scale, in descending order of viability, are 'at risk', 'vulnerable', 'threatened', 'endangered', 'severely endangered' and 'critically endangered'.

2.2 The structure of NE Cree

Algonquian languages are commonly considered to be polysynthetic (among others, Mithun (2001)) and to have so-called "non-configurational" syntax, the principal characteristic of which being the option for full argument omission in the appropriate discourse contexts (Hale, 1983).

Even though the distinction drawn between the concepts of "polysynthetic" and "non-polysynthetic" has been subject to some criticism in recent years (Fortescue et al., 2017; Haspelmath, 2018), given that NE Cree is head-marking (the referents are indexed on the verb complex (à la J. Nichols, 1986)), permits holophrasis (in which a single word can express a complex idea), and allows nominal elements to be incorporated into the verb, NE Cree will be considered polysynthetic in this study.[2]

Algonquian languages are traditionally described as having three parts of speech: nouns, verbs, and particles (Bloomfield, 1946), a classification system which has been refined in more recent scholarship (among others, Rhodes, 1985; Goddard & Bragdon, 1988; Nichols & Nyholm, 1995; Oxford, 2008).

Cree verbs are inflected in three orders: Independent, conjunct, and imperative (Bloomfield, 1946).[3] Independent verbs are distinguished by the use of distinct personal prefixes in first and second persons while the conjunct and imperative verbs have suffixal inflectional morphology. Independent inflection (2a) has been argued to have a wider distribution compared to the other two orders (Brittain, 2001), and may thus be the default, used when the conjunct and imperative are not. The distribution of conjunct inflection (the embedded verb in (2b)) is yet to be fully described but is canonically employed in complement and relative clauses, and clauses that

2 According to Baker (1996), Algonquian languages are best categorized as non-configurational head-marking languages. It is beyond the scope of the present work, however, to consider the issue any further.

3 There are 17 paradigms within these three orders: 10 independent, 5 conjunct, and 2 imperative. The paradigms under scrutiny are Independent Indicative Neutral, Conjunct Indicative Neutral, and Immediate Imperative. As the other paradigms are not present in the data and not relevant to this thesis, they will not be discussed in details. The readers are referred to https://www.eastcree.org/cree/en/grammar/northern-dialect/verbs/cree-northern-verb-conjugation-applet-legend/ for further details of the inflectional paradigm in NE Cree.

contain a *wh*-expression. Additionally, however, conjunct verbs may appear in main clauses that do not contain a *wh*-expression, such as focus constructions (James, 1991; Starks, 1994). Lastly, imperative inflection (2c) appears in constructions which involve giving commands and making suggestions. For further discussion of the inflectional orders, see section 3.3 in chapter 4.

(2) Inflectional paradigms relevant to this research

a) Independent

Nichischâyimâu.

ni-chischâyim-âu

1-know(TA)-IIN.S:1.SG/O:3.SG

'I know him/her.'

b) Conjunct

Nichischâyimâu awân âh chîh nipât.

Nichischâyimâu	awân âh	chîh	nipâ-t
know(TA).IIN.S:1.SG/O:3.SG	PRON LIC.PVB.NT	PVB.PST	sleep(AI)-CIN.3.SG

'I know someone had slept here.'

c) Imperative

Nipâh!

nipâ-h

sleep(AI)-IMP.2SG

'sleep!'

(Rose & Brittain, 2011, p. 202)

Cree verbs are classified into four basic classes. Transitive verbs agree with the grammatical gender of their objects yielding two classes: transitive animate (TA) and transitive inanimate (TI).

Intransitive verbs agree with their single argument, yielding two classes: animate intransitive (AI) and inanimate intransitive (II). Lastly, AI Transitive verbs are syntactically transitive, taking an inanimate object, but take AI morphology (Table 1).

Table 1 NE Cree verb classes

Transitive	Transitive Animate (TA) Object is animate	Transitive Inanimate (TI) Object is inanimate AI Transitive Object is inanimate
Intransitive	Animate Intransitive (AI) Subject is animate	Inanimate Intransitive (II) Subject is inanimate

The Cree verb complex, minimally bipartite and maximally tripartite, consists of three basic components: an "initial", which conveys the lexical information, and is commonly considered as the "root" of the verb stem (Bloomfield, 1946; Wolfart, 1973); an optional medial, the position where the classifiers and incorporated nouns are included (Bloomfield, 1946; Vaughan, 2010); and a final, a verbalizer which establishes the valency and the grammatical gender (animacy) of the arguments. This structure holds good for all Algonquian languages (Bloomfield, 1946; Wolfart, 1973; Goddard, 1990) (3).

(3) Algonquian Verb Stem
Initial + (Medial) + Final

Additionally, the verb stem can be preceded by a class of morpheme called “preverb”, the focus of this study. A detailed discussion of preverbs will be presented in section 3. Preverbs, also, can be preceded by a pronominal clitic (personal prefix) in cases where the verb is independent. The stem is generally followed by inflectional morphology. Although the positions described here may be occupied by more than one morpheme, since the present study focuses on child speech, there is no need to consider highly complex verb forms (e.g., of secondary derivation). The following template shows the general ordering of the morphemes in Cree (4).

(4) General Template of Cree Verb Complex

a) Independent: (Pronominal Clitic) + (preverb(s)) # initial + (medial) + final + inflection

b) Conjunct: (preverb(s)) # initial + (medial) + final + inflection

Cree conjunct verbs are also subject to “initial change”, a morpho-phonological process of “a systematic alternation of the first vowel of a stem”, resulting in a “changed form” (Wolfart, 1973, p. 82). The following table shows the most common alternations that NE Cree exhibits.[4]

Table 2 Initial change in NE Cree (C)V

Phonological form	After initial change
/i, a/	[â]
/u, û/	[wâ~û]
/î/	[â~iyâ]
/â/	[iyâ~âyâ]
/yu/	[yu]

4 See https://www.eastcree.org/cree/en/grammar/northern-dialect/verbs/cree-verb-inflection/initial-change/ for the complete list of rules of initial change.

Initial change is obligatory in *wh*-clauses, and also affects verb stems in a wide range of complement clauses. Given that initial change targets the first syllable of the verb complex, either the lexical stem (5), or a preverb (as in (6), where *wîh* (want to) appears in changed form, (*wâh*) is affected by initial change.

(5) *Châkwân mânihkwâyin?*

châkwân	mânihkwâ-yin
WH	IC.drink(AI)-CIN.2.SG

'What are you drinking?'

(6) *Châkwân wâh minihkwâyin?*

châkwân	wâh	minihkwâ-yin
WH	IC.PVB.want	drink(AI)-CIN.2.SG

'What do you want to drink?'

(Brittain & Rose, 2021, p. 6)

In cases where multiple preverbs are combined, only the leftmost preverb undergoes initial change, as illustrated in (7).

(7) *Oh! Kûyâkw âti ki chischisiyân.*

oh kûyâkw âti		ki	chischisi-yân
oh ok	IC.PVB.begin	PVB.FUT	remember(AI)-CIN.1.SG

'Oh! I am starting to remember.'

(Adult, session 3;09.23)

Preverbs that are not affected by the synchronic process of initial change, and have only citation form, are referred to as "phonologically stable" (Brittain & Rose, 2021), as they do not alternate between citation and changed forms.

Not all changed forms are produced through the initial change rule, however. To be precise, the conjunct preverbs *kâ*, *âh*, and *châ* are considered to be lexicalized changed forms (Brittain & Rose, 2021), because they have no unchanged (citation) for counterparts which can be derived transparently via the synchronous process of initial change.

3 Overview of preverbs

Preverbs are a small set of morphemes that precede the verb stem and function to express grammatical (tense, aspect, mood), lexical, deictic (directional) information. All Algonquian languages have preverbs (Bloomfield, 1946), and they have been the subject of a relatively large amount of research to date: e.g. Wolfart, 1973 for Plains Cree; Rhodes, 1976 and Malone, 1999 for Central Ojibwa; James, 1991 for Moose Cree; Starks, 1992 for Woods Cree; Clarke et al., 1993 for Cree-Innu-Naskapi dialect continuum; Jancewicz & Mackenzie, 1998 for Western Naskapi; Costa, 2002 for Shawnee; Bannister, 2004 and Oxford, 2008 for Innu; Pentland, 2005 for Algonquian languages in general; Shields, 2005a; 2005b; 2006 for Menominee; Slavin, 2005; 2006a; 2006b; 2007 for Oji-Cree; and McCulloch, 2013 for Mi'kmaq)[5]. Even though they are phonologically independent words (Goddard, 1990; Russell, 1999) preverbs are part of the verb complex; in the independent, they may follow the pronominal prefixes (8). In the conjunct, preverbs are the left-most element of the verb stem (9).

5 Also spelled as Mi'gmaq or Micmac.

(8) *Tâpâ nichîh chipihân chihchiwâ.*

tâpâ	ni-chîh	chipih-ân	chihchiwâ
not	1-PVB.ABILITY	close(TI).IIN.S:1.SG/O:0	truly

'I can't really close it.'

(Adult, session 03;11.11)

(9) awân kâ wîchâwit?

awân kâ	wîchâw-it	
who	LIC.PVB	accompany(TA)-CIN.S:2.SG/O:3.SG

'Who did you go with?

(Adult, session 3;08.10)

Algonquian preverbs are categorized into two major sets: 'grammatical' and 'lexical'. The former set is a closed class of morphemes which denote tense, aspect, and mood (e.g. *ki* 'independent non-third future', *chipih* 'should, could'). The latter class typically expresses adverbial/adjectival concepts, and "result in the derivation of a new word" (Jancewicz & Mackenzie, 1998, p. 150) (e.g. *nîpâ* 'during the night', *michi* 'bad, badly'). There is also a small closed set of preverbs which signals deictic notions (e.g. *pâchi* (toward), *uhchi* (from)). I follow Brittain & Rose (2021) in referring to these as "directional preverbs".

Table 3 lists what is, to the best of our knowledge at the present time, the entire set of grammatical and directional preverbs, and the most common lexical preverbs in NE Cree.[6] Grammatical preverbs differ from the other sets in that most of them do not alternate in form for

6 See https://www.eastcree.org/cree/en/grammar/northerndialect/verbs/preverbs/ for a detailed list of preverbs with their usages and examples.

initial change (see Table 2 above), while all preverbs from the directional and lexical sets have both a citation and a changed form.

Table 3 NE Cree preverbs

Preverb type	Citation form	Changed form	Function/Meaning
Conjunct neutral preverb	--	âh	complementizer/relativizer
Conjunct preverb	--	kâ	complementizer/relativizer, past tense in some contexts, focus constructions
Tense	chîh	--	past tense (non-peripheral position in conjunct)
	uhchi	--	past tense, negated clause (no initial change)
	--	châ	conjunct future
	ki	--	independent non-third future
	chiki	--	independent third future
	kiti	--	future
Modality	chîh	--	'able to' (non-peripheral position in Conjunct)
	wîh	wâh	'want to'
	pih	--	non-third 'should,' 'could'
	chipih	--	third 'should,' 'could'
Aspect	ati	âti	inchoative
	chihch	châhch	inceptive 'start to do something'
	chîsh	chiyâsh	completive 'completed doing something'
Directional	pâchi	piyâchi	'toward' speaker
	uhchi	wâhchi	'away from' speaker
Lexical	ishi	âshi	'in a certain manner'
	nânitû	niyânitû	'go do something'
	pûni	pwâni	'stop doing something'
	nîpâ	nâpâ	'during the night'
	miyu	mâyu	'good/well'
	michi	mâchi	'bad/badly'
	nihtâu	nâhtâu	'be good at'

It should be noted that while *châ*, *chiki* and *ki* have the same function (encode future tense), and *chiki* and *ki* are clearly allomorphs based on person, for the purposes of this thesis I count them as

separate preverbs. This is because they differ from each other formally and my focus in this study is acquisition. Considering the learning task from the child's perspective, these are arguably, three distinct forms that need to be acquired. As previously mentioned, *châ* is considered to be a lexicalized preverb because the relationship between *ki* and *châ* cannot be derived from the synchronic rules of initial change.

4 Grammatical preverbs

Grammatical preverbs in NE Cree, to the best of our knowledge, can only appear in preverb position (unlike the other two types, which can also appear in initial position). As previously mentioned, Brittain & Rose (2021) refer to the grammatical preverbs as "positionally stable," meaning that they systematically appear in preverb position and nowhere else (as discussed in section 6 of this chapter).

4.1 Conjunct preverbs

There are three so-called "conjunct" preverbs. These may only be paired with the verbs inflected for the conjunct order and always occupy peripheral position if they appear with other preverbs. Future tense is marked by *châ* in conjunct clauses (10).

(10) *Niki nitiwâyimâu â châ pâchi nâtihut?*

ni-ki nitiwâyim-âu â

1-PVB.FUT want(TA)-IIN.S:1.SG/O:3.SG PQP

châ pâchi nâtihu-t

LIC.PVB.FUT PVB.toward pick.up(TA)-CIN.S:3.SG/O:1.SG

'Do I want him to pick me up?'

(Adult, session 03;09.23)

Additionally, in some contexts, *châ* in second person forms functions as an imperative construction, as in (11).

(11) *Mommy, châ wâpimit cow!*

Mommy châ wâpim-it cow

name LIC.PVB.FUT see(TA)-CIN.S:2.SG/O:3.SG ENG

'Mommy, look at the cow!' [Ani pulling toy animals from a bag]

(Brittain & Rose, 2021, p. 20)

Both *âh* and *kâ* occur in a variety of subordinate and relative clause types, though the understanding of the distribution and functions of the conjunct preverb *kâ* is still not complete. However, it has been argued that the distribution of the conjunct neutral preverb *âh* is more limited compared to *kâ*: *kâ* may appear as a marker of past tense in main clause *wh*-clauses (12), in main clause focus constructions, and in relative and subordinate clauses, while *âh* seems to occur in certain types of subordinate clauses such as purpose clauses ((13), when-clauses, relative clauses which have a habitual interpretation, and gerund and infinitive structures (Brittain & Rose, 2021).

(12) *Awân kâ wîchâwit?*

awân kâ wîchâw-it

WH LIC.PVB together(TA)-CIN.S:2.SG/O:3.SG

'Who did you go with?

(Adult, session 03;08.10)

(13) *Pishinâ âh wâpinichât...*

pishinâ âh wâpinichâ-t

maybe LIC.PVB.NT throw.out(AI)-CIN.3.SG

'Maybe [it's used] for throwing stuff away...'

(Adult, session 03;08.10)

Conjunct preverbs can only be located in the verb stem where initial change applies, and they are thus considered to be lexicalized changed forms and will be treated as such for this study.

4.2 Other tense preverbs

Apart from *châ* (conjunct future), discussed above, there are a variety of other tense preverbs in NE Cree (henceforth, unless otherwise noted, when I refer to 'tense preverbs' I include *châ* as a tense preverb). These only encode past and future tense contrasts, with present tense being unmarked: *chîh* marks past tense, and *uhchi* encodes past tense in negated clauses. Future tense in independent clauses is encoded by *ki~chiki* (respectively, non-third and third person allomorphs). All these preverbs are phonologically and positionally stable. Both *chîh* (past) and *uhchi* (past/negation) may appear with the conjunct or the independent, however, when *chîh* (past) is

combined with the conjunct, it must be preceded by a conjunct preverb, which locates it in non-peripheral position, therefore it never undergoes initial change (as shown in (14b)).

(14) The locations of *chîh* (past)

a) *Awân â chichîh iyin?*

awân â chi-chîh iyi-n

WH PQP 2-PVB.PST say(AI)-IIN.2.SG

'Who did you say?'

(Adult, session 03;11.11)

b) *Nâshch âh chîh miywâyihtimân.*

nâshch âh chîh miywâyiht-imân

very.much LIC.PVB.NT PVB.PST happy(TI)-CIN.S:1.SG/O:0

'I was so happy.'

(Adult, session 04;02.16)

The preverb *uhchi* (past/negation) appears in both the conjunct and the independent, but, in spite of appearing at the left edge, where initial change would apply, it is never subject to initial change, as the process doesn't seem to apply in general to negated clauses in NE Cree.

(15) *Nâshtâpwâh nimi uhchi nipâu tâpiskâyich.*

nâshtâpwâh nimi uhchi nipâ-u tâpiskâyich

very.much NEG PVB.PAST(NEG) sleep(AI)-IIN.3.SG last.night

'She didn't sleep well last night.'

(Adult, session 03;11.11)

The preverb *ki~chiki* may only be paired with the independent. They are allomorphs whose forms are controlled by the feature of person: *ki* (future non3) is used with verbs inflected for a non-third subject (16), while *chiki* (future 3) is employed when the subject is third person (17).

(16) *Niki minihkwân nîyi.*

ni-ki	minihkwâ-n	nîyi
1-PVB.FUT	drink(AI)-IIN.1.SG	PRON.1

'I am going to drink.'

(Adult, session 03;08.10)

(17) *Mânitâh nâshtâpwâh chiki chishwâwâpiyiu.*

mânitâh	nâshtâpwâh	chiki	chishwâwâpiyi-u
that	very.much	PVB.FUT	make.noise(II)-IIN.0.SG

'It will make a loud noise.'

(Adult, session 03;08.10)

4.3 Modal Preverbs

Four modal preverbs are recognized in NE Cree: *wîh* (want to), *pih~chipih (*respectively*,* non-third and third person allomorphs), and *chîh* (able to) (homophonous with past tense *chîh)*. *Chîh* (able to) may combine with either the conjunct or the independent, but in the conjunct occupies non-peripheral position (18).

(18) *Tânitâh wâhchi chîh wâpimin?*

tânitâh	wâhchi	chîh	wâpim-in
WH	IC.PVB.from	PVB.ABILITY	see(TA)-CIN.S:2.SG/O:1.SG

'How can you see me?'

(Adult, session 03;11.11)

The preverb *wîh* (want to) expresses volition, and it also denotes 'going to' future meaning for the neighbouring dialect of Western Naskapi (Jancewicz & Mackenzie, 1998). There is no evidence that it has this secondary function in NE Cree, although this remains something to be investigated. It is a phonologically alternating preverb, appearing in its citation form in the independent (19). In the conjunct it appears as a changed form if peripheral (20), and in its citation if non-peripheral (21).

(19) *Niwîh minihkwân tî.*

ni-wîh	minihkwâ-n	tî
1-PVB.want	drink(AI)-IIN.S:NON3	tea

'I want to drink some tea.'

(Brittain & Rose, 2021, p. 6)

(20) *Châkwân wâh ushihtâyin?*

châkwân	wâh	ushihtâ-yin
WH	IC.PVB.want	make(AI-TR)-CIN.2.SG

'What do you want to do?'

(Adult, session 3;09.22)

(21) *Awâyiuh kâ wîh minishimiyichh?*

awâ-yiuh kâ wîh minish-imiyichh

WH-OBV LIC.PVB PVB.want remove(TI)-CIN.S:OBV/O:0

'Who wanted to cut it off?'

(Adult, session 03;08.10)

The preverb *pih~chipih* contributes the sense of obligation or possibility (i.e., 'should/could'). These two forms are allomorphs, the former occurring with first and second person subjects (22), while the latter with the third person subject (23).

(22) *Awân nipih chîh mitwâhtiwâu?*

awân ni-pih chîh mitwâhtiw-âu

WH 1-PVB.SHOULD PVB.ABILITY call(TA)-IIN.S:1.SG/O:3.SG

'Who should I call?'

(Adult, session 03;09.23)

(23) *Wîyi wâsh mikw chipih ayimû.*

wîyi wâsh mikw chipih ayimu-u

PRON.3 EMPH just PVB.SHOULD talk(AI)-IIN.3.SG

'She is the only one who should talk.'

(Adult, session 04;04.04)

4.4 Aspectual Preverbs

Even though the details of the distribution of most of the preverbs of this type remains to be clarified by future research, the current study reveals some of the combinatorial possibilities of these morphemes. The preverbs *ati* (inchoative) and *chihch* (inceptive) may appear with the

conjunct order, while *chîsh* (completive) does so with the conjunct and independent in both Daisy and the adult's speech.[7] Below in (24), I provide an utterance for each aspectual preverb.

(24) Aspectual preverbs *ati* (inchoative), *chihch* (inceptive), and *chîsh* (finish)

a) *Mikw kiyipwâ châkwân wâh ati wishtâyin.*

mikw	kiyipwâ	châkwân	wâh	ati	wishtâ-yin
just	of.course	something	IC.PVB.want	PVB.begin	draw(AI)-CIN.2.SG

'You can draw anything you want.'

(Adult, session 04;06.02)

b) *Chihchi mispun.*

chihchi	mispun
PVB.INC	snow(II).IIN.0.SG

'It is starting to snow.'

(Junker et al., 2015)

c) *Tân châ iyihtiyin mâk chîshi piminiwâch?*

tân	châ	iyihti-yin	mâk	chîshi	piminiwâ-châ
WH	LIC.PVB.FUT	do(AI)-CIN.2.SG	so	PVB.CMP	cook(AI)-CIN.SJ.3.SG

'What are you going to do when she finishes cooking?'

(Adult, session 03;09.23)

7 It is unclear what the difference is between *ati* (inchoative) and *chihch* (inceptive) as both appear in the database with similar English translations ('start to'). I retain the original translation from the database without commenting further on the difference between these two preverbs.

4.5 Multiple grammatical preverbs

Preverbs in Algonquian languages very commonly appear in combinations of two or three. For Western Naskapi, Jancewicz & Mackenzie (1998) propose maximally three slots for grammatical preverbs, as in Table 4.

Table 4 Preverb slots for Western Naskapi

1	2	3	
chiki chipaah aa kaa chaa	chii (past) chii (ability) wii	wii	STEM

On the other hand, for NE Cree, Junker et al. (2015) propose four spots for grammatical preverbs, as shown in Table 5.

Table 5 Order of grammatical preverbs

1	2	3	4	
Conjunct	Tense: Future Past Conditional	Modality: Volition Possibility	Aspect Quality	STEM

None of the data in this thesis contradicts either of these two claims; it lies outside the scope of the present study to determine the number of slots or the order of preverbs. As further data and fieldwork is needed to draw any conclusion, I will limit my discussion at this point, and leave it to further investigations.

5 Lexical and directional preverbs

Lexical and directional preverbs have a more complex distribution than grammatical preverbs in that they can be found in either preverb position or in initial (root) position. This is a phenomenon referred to as 'preverb bumping' (Goddard, 1990, p. 479), the supposed leftward displacement of a morpheme from initial position to preverb position (see Branigan et al. (2005) for a discussion of this in Innu). Additionally, certain morphemes which might be considered lexical or directional but which are normally free-standing (e.g., lexical nouns and the variety of forms traditionally classified as 'particles') can be placed in preverb position. Bloomfield (1946, p. 104) describes the phenomenon as follows (italics are Bloomfield's):

> Certain particles, *preverbs*, freely precede verb stems: M[enomini] kees-pes-nɛɛwɛɛw "he has seen him on the way," nekees-pes-nɛɛwaaw "I saw him on the way," kayees-pes-nɛɛwak "when I had seen him on the way": kees "completion," pes (used only as a preverb) "hither"; F[ox] weepi-pyeeči-teteposeewa "he begins to approach walking in a circle." Particles and even longer words are often *included* between the members of such compounds: M nekees-pes-tɛh-wenah-nɛɛwaaw "but I did see him on the way," with tɛh wenah "however" included; F nepyeeči-ketaanesa-naanaawa "I have come to fetch thy daughter," with ketaanesa "thy daughter" included.

Discussing the same phenomenon, Wolfart (1973) proposes a spot between the verb stem and the position where grammatical preverb appears, which he calls "a loose point of linkage" (p.76), also referred to as "Position 2", a position at which different kinds of constituents can be inserted. A template illustrating the preverb space is presented below in (25).

(25) Position 1 + Position 2 # Verb Stem

Grammatical Preverbs Particles, Possessed Nominal, Lexical Preverbs

Position 2 can accommodate particles and other constituent types, as well as preverbs, while Position 1 can only be occupied by grammatical preverbs. Once the particles appear in the loose spot, they may then be referred to as 'preverbs'. Most of these Position 2 morphemes can occur outside the verb stem. For instance, in the following example, the manner particle *tâpituw* 'together', which is a free morpheme (26a), appears in Position 2 in example (26b) where it may be regarded as a preverb.

(26) The particle *tâpituw* 'together'

a) Listed particle (free morpheme) in Naskapi lexicon
'Tâpituw, "together", particle of manner'

b) *Ni tâpitu nipânânuw.*

ni	tâpitu	nipâ-nânuw
1	PVB.together	sleep(AI)-IIN.INCL.PL

'We all slept together.'

(M. MacKenzie & Jancewicz, 1994)

Morphemes appearing less commonly in this position, such as certain particles (*twenah* 'hither' in (27)), adverbs (*minekâsh* in (28)), and even nouns (*utshimâua* in (29)), may not be considered as preverbs.

(27) Menomini

Nekeespestwenahnwaaw.

ne-	kees-	pes-	twenah-	nɛɛw-aaw
1	PVB.PAST	PVB.hither	however	see(TA)-IIN.S:1.SG/O:3.SG

'But I did see him on the way.'

(Bloomfield, 1946, p. 103)

(28) Innu

Apû tshî minekâsh nûtkushiân.[8]

apû	tshî	minekâsh nûtkushiân
NEG	PVB.ABILITY	long.time be.visible.CONJ.1.SG

'I cannot show myself [for long].'

(Oxford, 2008, p. 37)

(29) Innu

[...] shuk^{u} ' ua utshimâua nâtâukushit?

shuk^{u}	ua	utshimâua	nâtâukushit?
really	PVB.VOL	chief.3'	be.met.CONJ.3.SG

'[...] since he really wants the chief to come fetch him?'

(Oxford, 2008, p. 37)

8 Oxford (2008) abbreviations: CONJ = conjunct order; VOL = volition; 3' = obviative.

The issue of which morphemes can appear in Position 2, is complex and is beyond the scope of this thesis; I limit my investigation to the NE Cree preverbs which appear in the dataset selected for study.

Some lexical and directional preverbs are positionally unstable, can occur in either preverb or initial (root) position (30a-d).

(30) Positional variability of morphemes in the lexical and directional classes

a) nîpâ as lexical preverb

Ninîpâ mîchisun.

ni-nîpâ mîchisu-n

1-PVB.at.night eat(AI)-IIN.S:NON3

'I eat at night.'

b) nîpâ as root

Ninîpâpiyin.

ni-nîpâpiyi-n

1-at.night(INTR)-IIN.S:NON3

'I travel late at night (by vehicle).'

c) *pâchi* (toward) as root

Pâchishtâchiwin.

pâchi-shtâchiwin

toward-rapids.flow(II).IIN.S:0

'The current flows in this direction.'

d) *pâchi* (toward) as directional preverb

Pâchi chîwâh!

pâchi	chîwâ-h
PVB.toward	go.home(AI)-IMP.S:2.SG

'Come home!'

(Brittain & Rose, 2021, p. 7)

Uniquely, among the preverbs discussed in this study, both directional preverbs, *pâchi* (toward) and *uhchi* (from), combine with all three inflectional orders. They may also undergo initial change. *Uhchi* (from) frequently appears (in its changed form) in *wh*-constructions ((32) where, together which the interrogative pronoun (e.g., *châkwân* 'what') it forms a content question); that is to say *châkwân wâhchi* 'what from' = 'why', comparable, perhaps, to English 'how come' = 'why'.

(31) *Âkuh wit utâh wit pâchi îtuhtâh.*

âkuh	wit	utâh	wit	pâchi	îtuhtâ-h
okay	then	this	then	PVB.toward	go(AI)-IMP.2.SG

'Ok then, come over here.'

(Adult, session 03;08.10)

(32) *Châkwân wâhchi îsinâkuhîsuyin?*

châkwân	wâhchi	îsi-nâkuhî-su-yin
WH	IC.PVB.from	RR-appear(AI)-RFLX-CIN.2.SG

'Why did you do it to yourself?'

(Adult, session 03;08.10)

Lexical preverbs are so named because they carry lexical content. The forms in Table 3 are commonly considered to be lexical preverbs which are not able to stand alone, but which may appear in initial position. As previously mentioned, Wolfart's preverb 'position 2' is an area of the verb complex which seems able to accommodate a variety of constituent types. The data examined in this study don't attest to any examples like this; the lexical preverbs which appear in my dataset are among the set listed in Table 3.

6 Preverbs and acquisition, overview of Brittain & Rose 2021

The only research to date undertaken on the acquisition of preverbs is Brittain & Rose (2021). In their study, they examine Ani's corpus (2;01 to 4;03) to investigate the pattern of emergence of the preverb system. They analyzed 32 sessions, in which she produces 60 constructions that require a preverb. She accurately produced preverbs in 48 of these 60 constructions, in 8/60 cases the preverb was omitted, and in the remaining four cases productions were considered as an error (Table 6).

Table 6 Ani's preverb inventory[9] (Brittain & Rose, 2021)

Age	Independent				Conjunct					Imperative
	Past	Past (Neg)	Future (non3)	'want to'	Conjunct future	Conjunct neutral	Conjunct	'able to'	'away from'	'toward'
	chîh	*uhchi*	*ki*	*wîh*	*châ*	*âh*	*kâ*	*chîh*	*wâhchi*	*pâchi*
2;01.12										
2;02.01										
2;02.29						(1)^{R}				
2;03.24										1
2;04.10			1							
2;04.22			(1)^{R}							
2;05.14										
2;06.05										
2;06.22										
2;07.06	1		1							
2;07.20					1$^{M/E}$					
2;08.09										
2;08.23			1		1^{E}					
2;09.09	1									
2;09.28			1	1						
2;10.13										
2;10.27										
2;11.16					1					
3;00.02										
3;01.18			1	1			2			
3;02.05				1			1			
3;03.00				1						
3;04.09	1			1	1		1			
3;05.01				2	1					
3;05.18										
3;06.23					1		(3)2			
3;08.09										
3;08.24			3	1		1	4			
3;09.13										
4;00.13	1	1		1	1		(1)2	2^{E}	(2)	
4;01.10										
4;03.07	1		4				2			
Target: 48	5	1	12	9	5	1	14			1
Omitted: 8			1			1	4		2	
Error: 4					2			2		

9 Numerals in parenthesis = an error of omission, (E = error): an error of commission, (M = modelling): a case in which the adult modelled a preverb construction for Ani, 'R' = repetition.

Her first successful preverb production occurs in session four at age 2;03.24, with *pâchi* (toward), in combination with the imperative. This is the only non-grammatical preverb that she produces (also the only directional preverb), and this is the only instance in which the imperative order is employed with a preverb. Phonologically and positionally stable preverbs *ki* (future non3) and *chîh* (past) follow it appearing one and four months later respectively, and they are only paired with the independent, though a choice is available for *chîh* (past). The desiderative preverb *wîh* (want to) is first produced at age 2;09.28, with only the independent. Together with *pâchi* (toward), they are the only alternating preverbs in her inventory. Seven months after her first correct usage of a preverb, the conjunct is first employed (with a preverb) at age 2;11.16, with the preverb *châ*, followed by *kâ* and *âh* two and nine months later respectively. Even though these preverbs are employed in subordinate clauses in NE Cree, their distribution in Ani's corpus is limited to simple main clause contexts, as Ani does not produce any subordinate clauses with or without a preverb. Lastly, she tries to pair *chîh* (ability) with the conjunct late in the observation period. However, she places it in the peripheral position, which is not allowed in the language. In the same session, she also produces tense preverb *uhchi* (past/negation) correctly.

According to Brittain & Rose, Ani's pattern of development presented above suggests a learning path which is driven by grammatical complexity. That is, she starts out with preverbs which have relatively transparent meanings such as future and past tense, while her late preverb production is characterized by their abstract nature such as the conjunct preverbs *âh* and *kâ*. In addition, her early preverbs are mostly paired with the independent verbs: she starts using preverbs with the independent (2;04:10) seven months before she produces preverbs with the conjunct (2;11:16).

Moreover, she does not employ the rules of initial change to any preverb, therefore her preverb production consists of only phonologically stable ones; and 47 of them are a type of preverb which can only occupy one position in the verb stem(are positionally stable). Consequently, they argue that semantically transparent, phonologically stable, and positionally predictable preverbs are potentially less complex than more abstract, phonologically alternating, and positionally unstable ones.

Based on this pattern of Ani's preverb acquisition, Brittain & Rose identify five potential challenges that a Cree learning child may encounter while acquiring the preverb system: (1) the usage of the conjunct in general, and specifically in combination with preverbs, (2) initial change and phonological instability, (3) positional instability, (4) preverb combination, and (5) unique preverb-inflection combinations.

6.1 The usage of the conjunct

The first possible difficulty which a Cree learner may be presented with concerns the use of the conjunct inflectional paradigm. While this is an issue general to all verbs, it is relevant in discussing verbs with preverbs, As mentioned in the previous section, Ani's early production of preverbs is mostly (exclusively, setting aside one example with the imperative) paired with independent forms. Brittain & Rose attribute this finding to the different level of complexity of the conjunct in contrast with the independent. That is, they argue that the conjunct order, compared to the independent set, may pose some challenges to the learner. First, as mentioned earlier, the conjunct is restricted to certain environments: subordinate clauses, relative clauses, clauses that contain interrogative pronouns (*wh*-expressions), and some main clauses such as

focus constructions. Independent inflection, on the other hand, appears to be employed elsewhere (e.g. main clauses). For that reason, Rose & Brittain, 2011, argue that independent verbs may be more learner-friendly (see also Brittain (2001)).

A second way in which the independent may be less challenging for the learner is the nature of the inflection. Conjunct inflection is fusional (33) while the independent is more agglutinative.

(33) âh wapim-ik
LIC.PVB.NT see(TA)-CIN.S:1.SG/O:3.SG
'... that I see him/her' (Terry, 2010, p. 50)

Given the fact that agglutinative morphology is argued to be easier to acquire than fusional (Slobin, 1982), the independent, again, is potentially easier to acquire for the learner compared to the conjunct.

The last potential difficulty of the conjunct with which the Cree learner is presented is initial change.

6.2 Initial change and phonological instability

A further challenge that a child may face in acquiring the system of preverb is initial change. As shown in examples in (6) and (7) of this chapter, preverbs may undergo initial change. Table 3 displays the citation (unchanged) and changed forms of the given preverbs. As explained previously, changed forms are referred to as phonologically unstable as they show an alteration in

form, depending on the inflection that they are paired with and the position where they appear. In order to produce changed forms, the learner, arguably, needs to break the verb complex into its components, target the leftmost element, then analyze it to see whether initial change applies or not, and apply the relevant sound change (Table 2) if necessary. Recall that, however, not all changed forms have unchanged counterparts: the conjunct preverbs *kâ*, *âh*, and *châ* are lexicalized changed forms. Additionally, a number of preverbs have no changed forms because they can only combine with the independent order or they do not appear in initial position in the conjunct: these are the forms referred to by Brittain & Rose (2021) as "phonologically stable".

Ani does not produce any changed form preverbs (Brittain & Rose, 2021); all of her preverb productions involve either lexicalized conjunct preverbs, or the citation forms of preverbs which are able to undergo initial change. They account for this absence by proposing that phonologically unstable preverbs may cause difficulties for the learner of Cree, as the learner needs to identify the set of preverbs that alternate and apply the rule of initial change. Non-alternating forms, on the other hand, may present the learner with less challenge.

6.3 Positional instability

As stated earlier, in NE Cree, certain preverbs (grammatical set) occupy a unique position in the verb stem, while (at least some of) the lexical and directional sets can also occupy initial (root) position. As out of 48 preverbs Ani produces, 47 of them are from the grammatical set (positionally stable), Brittain & Rose take positional instability as a potential challenge for the learner.

6.4 Preverb combination

Ani does not combine preverbs in her production, suggesting that use of single preverbs precedes in acquisition the ability to combine. One of the goals of the present study is to investigate whether or not Daisy, who is older and more linguistically advanced than Ani, is able to produce constructions containing multiple preverbs.

6.5 Unique preverb-inflection combinations

Certain preverbs in NE Cree can only combine with one of three inflectional sets, while the others can combine with more than one type of inflection. In Ani's corpus, for example, there are five preverbs (*pâchi* (toward), *chîh* (past), *wîh* (want to), *chîh* (able to) and *uhchi* (past/negation)) that can combine with more than one type of inflection. However, Ani always uses preverbs with only one inflection type, even in cases where a given preverb combines with more than one order. Based on this finding, Brittain & Rose argue that producing preverbs with different inflectional orders may involve more complexity as opposed to pairing preverbs with a unique inflection type. This is a question I address for Daisy's data (see section 3.1.5 in Chapter 6).

7 Acquisition and Polysynthesis

This thesis examines how one child acquires one type of verbal morphology for Cree, a polysynthetic language. Such languages remain underrepresented in first language acquisition studies; see Kelly et al., 2014 and Kelly et al., 2015 for an overview of this issue. Since the second half of the twentieth century, two language families have represented most of the research done on the acquisition of polysynthetic languages: Inuit languages (e.g., Allen, 1996, 2017; Allen & Dench, 2015; Fortescue & Olsen, 1992), and Mayan languages (e.g., Casillas et al.,

2020; De León, 1999; Pedro, 2015; Pye et al., 2017). Additionally, there are a small number of studies of other polysynthetic languages, including some from North America: Mohawk (Feurer, 1980; Mithun, 1989), Navajo (Chee, 2017; Courtney & Saville-Troike, 2002; Gentner & Boroditsky, 2009; Saville-Troike, 1996), and Zuni (Kroeber, 1916). In Canada, an ambitious naturalistic study began in 2015 of the Athapaskan language Dëne Sųłiné, under the auspices of the ACQDIV project (Acquisition in maximally diverse languages, https://www.acqdiv.uzh.ch). The same umbrella project, of which CCLAS is also a member, is home to a naturalistic study of Chintang, an endangered Tibeto-Burman language spoken in Eastern Nepal: see https://www.clrp.uzh.ch/publications for publications arising from this project.) In Australia, naturalistic acquisition data has been collected for the endangered indigenous language Murrinh-Patha (Forshaw, 2016; Forshaw et al., 2017).

Chapter 3: Methodology

1 Introduction

This chapter provides details about the methodology employed for this thesis. In section 2, I briefly talk about the fieldwork process. Section 3 describes the CCLAS study and the dataset chosen for my study. In section 4, I explain the data processing undertaken to prepare the data for analysis, and section 5 sketches out the analysis that I undertook for Ani (additional to Brittain & Rose (2021)). In section 6, I discuss how English-origin roots are approached in this study. In section 7, I briefly introduce the criteria that are adopted in this study for determining the productive usage of preverbs, and I finish by explaining why some of the utterances containing preverbs were excluded from this thesis.

2 Fieldwork

In normal times, I would have been able to undertake fieldwork with a native speaker of NE Cree, either by travelling to Chisasibi, or by working with a Language Consultant on the St. John's campus. Research and writing for this thesis has taken place between 2020 and 2021, months when COVID-19 travel restrictions didn't allow travel out of the province of Newfoundland and Labrador; travel to or from Québec was therefore impossible. The dataset I have chosen to examine for my thesis is already extensively checked, however. There was only a small amount of fieldwork to do as I worked through the data and questions have come up. These questions were answered in several Zoom fieldwork sessions with Language Consultant, Alice Duff.

3 The CCLAS, study participants and data sampling

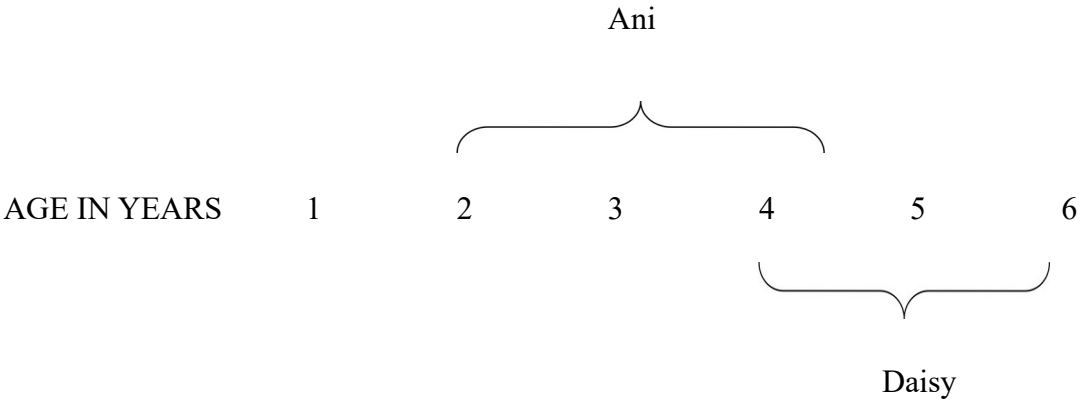
CCLAS is the first in-depth longitudinal naturalistic first language (L1) acquisition study of an Algonquian language for which quality data are available. It is, therefore, a groundbreaking project that has the potential to make a significant contribution to our understanding of the acquisition of Algonquian languages in particular, and polysynthetic languages more generally. Filming began in November 2004 with six participants, children living in Cree-speaking homes. Within the first year of the study, the number of participants dropped to three, with whom filming continued to April 2007, about every two weeks for approximately 45 minutes per session. The three remaining participants fell into two age cohorts: Cohort A consists of one child, code-named "Ani", who was recorded from 1;09 to 4;03, and two participants in Cohort B, code-named "Daisy" and "Billy", who were recorded, respectively, from 3;08 to 5;11 and 4;04 to 5;10. Approximately 55 hours of child speech and CDS have been obtained through around 80 video recordings in total. The filming process took place at their homes for some children, while others were filmed in a playroom at the Anjabowa Childcare Centre in Chisasibi. Each recording session has been filmed by the project coordinator for the CCLAS project, Darlene Bearskin, who is a community member in Chisasibi, and a native speaker of NE Cree. In each recording session, children interact with her in a naturalistic setting, though occasionally other people, such as children's parents and siblings, may appear in the recordings. The present study focuses on a subset of recording sessions of Daisy's corpus.

Daisy was recorded for 27 months in 32 sessions, 11 of which form the dataset on which this thesis is based (covering age 3;08-5;07). Daisy grew up in a Cree-speaking home, acquiring NE Cree as her first language. All three CCLAS participants, reflective of (all but the older members

of) the speech community in general, code-mix English to Cree. In a study of the phonology of the English morphemes Ani mixes into her Cree, Bryant (2013) shows that she uses Cree phonology so that English, although present, is "processed" through the filter of a Cree grammar. This suggests that although she occasionally uses English lexical items, her Cree grammar was robust. Pile's (2018) study of the inflectional and derivational morphology Billy applies to the English words he mixes into his Cree supports this view: Although he produces English nouns, verbs, and adjectives, his productive grammatical system is Cree, not English. No study has been conducted of Daisy's English to Cree code-mixing, but my default assumption will be that her representation of English relative to Cree is comparable to her peer group and that she is Cree mono-lingual with some knowledge of English lexical items (based, perhaps, on exposure through TV and daycare songs etc.).

As mentioned previously, Brittain & Rose (2021) investigated Ani's preverb production (2;01-4;03) and concluded that across that time span an emerging system could be seen, with her already producing preverbs at 2;01, but producing a greater variety of preverbs as she gets older, and (arguably) producing more complex preverbs later, less complex ones earlier. The reason why Daisy was selected for this research is that her corpus covers her at a more advanced age, during a period when she is more linguistically advanced than Ani. I decided to investigate preverb production for Daisy to gain more knowledge of Cree preverb acquisition, by examining a second corpus, and an older participant. In terms of the age spans filming covered for Ani and Daisy, data are obtained from age 2;01 (Ani's earliest video) to 5;07 (the latest of Daisy's sessions included in the present study), with an overlap between the two children of eight months (3;08-4;03).

Figure 3 Filming timeline for Ani and Daisy



The 11 sessions under scrutiny are evenly spaced, and the study thus covers a span of approximately 23 months. Table 7 details the sessions selected for examining Daisy' speech (items 1-11 in Table 7). Additionally, in just one session (item 12 of Table 7) the adult's preverbs were coded and analyzed in order to see a sample of preverb usage in the CDS. For reasons of feasibility, this session is not one of the sessions included in the study of Daisy's preverb usage. We selected a session for which the adult speech was largely already parsed; because the adult speech is more complex than the child speech, adult speech is not fully parsed in the database, but is done on a need to do basis. It is beyond the scope of this thesis to make a more extensive examination of the CDS than this single session.

Table 7 Video recordings selected for study, for Daisy and Adult[10]

Child's Age	Date of Recording	Length of the Session
1. 03;08.10	2004-12-14	35:48
2. 03;09.23	2005-01-27	37:16
3. 03;11.11	2005-03-15	58:32
4. 04;02.16	2005-06-10	50:25
5. 04;04.04	2005-08-08	40:04
6. 04;06.02	2005-10-06	41:58
7. 04;07.28	2005-12-02	43:28
8. 04;10.03	2006-02-07	43:25
9. 05;00.20	2006-04-24	35:17
10. 05;04.12	2006-08-16	33:31
11. 05;07.03	2006-11-07	32:26
12. 05;05.03	**2006-09-07**	**31.37**

4 Data processing

All CCLAS recordings are stored and processed in Phon (Rose et al., 2006; Rose & Macwhinney, 2014). In order to isolate the children's utterances, the CCLAS project team segmented the video-recorded sessions into individual records. The children's speech was transcribed into the International Phonetic Alphabet (IPA) by two transcribers, generating the tier "IPA Actual". These transcriptions were then compared and verified by a separate team of two CCLAS data processors. Target forms, Roman orthography, and English translation for each utterance were provided by a native speaker of NE Cree, and target forms were subsequently transcribed phonetically. Following these primary stages, parsing and coding were undertaken. Each isolated utterance was broken into its component morphemes, and the meaning and the type of these morphemes were represented in the tiers "Morpheme Meaning", and "Morpheme Type"

10 The sessions in Table 6 are numbered 1-12 in order to distinguish sessions used to examine Daisy's speech (1-11) from sessions used to examine the adult's speech (12). These numbers are not used again (to refer to sessions in the text).

respectively. From the IPA actual and IPA target tiers equivalent tiers were generated called Actual Morphology and Target Morphology tiers (see Figure 4 below). Morpheme breaks were inserted into these tiers to aid analysis.[11]

Coding has been undertaken by project director, Julie Brittain. For this research, a set of parameters were identified and provided with codes in order to enable Phon searches for data to address my research questions. These codes were entered into a tier named "Preverbs Coding". Basic coding was undertaken for all preverbs, with additional coding being added as appropriate. Basic coding included entering (into the Preverbs Coding tier) (1) preverb token, (2) class of verb, and (3) inflectional order of verb. An example like (34a) will be given basic coding as in (34b). In cases where there is homophony in the system, forms are distinguished with different numbers, as in (34c) which is coded as in (34d) (differentiating it from *chîh* (able to) which is coded as *chîh*.2).

(34) Coding examples

a) *Niki wâpimâu.*

ni-ki wâpimâu

1-PVB.FUT see(TA).IIN.S:1.SG/O:3.SG

'I'm going to see him/her.' (Adult, session 2;09.28, Ani)

b) (1) *ki* (2) transitive animate (3) independent

11 See Brittain et al. (2007) for more information on the data processing methodology.

c) *... Âhkw kiyipwâ wiyiwîtimihch âh chîh ihtâyin.*

âshkw	kiyipwâ	wiyiwîtimihch	âh	chîh	ihtâyin
still	really	outside	LIC.PVB.NT	PVB.PAST	be(AI).CIN:2.SG

'...when you were really still outside'. (Brittain & Rose, 2021, p. 9)

d) (1) *chîh*.1 (2) animate intransitive (3) conjunct

Preverbs affected by initial change are listed in their citation form so, for example, an example like (35a) which contains *wâh*, the changed form of *wîh* (want to), is coded as in (35b).

(35) Coding of initial change

a) *Châkwân wâh minihkwâyin?*

châkwân	wâh	minihkwâyin
WH	IC.PVB.want	drink(AI).CIN:2.SG

'What do you want to drink?' (Brittain & Rose, 2021, p. 6)

b) (1) ic.*wîh* (wâh) (2) animate intransitive (3) conjunct

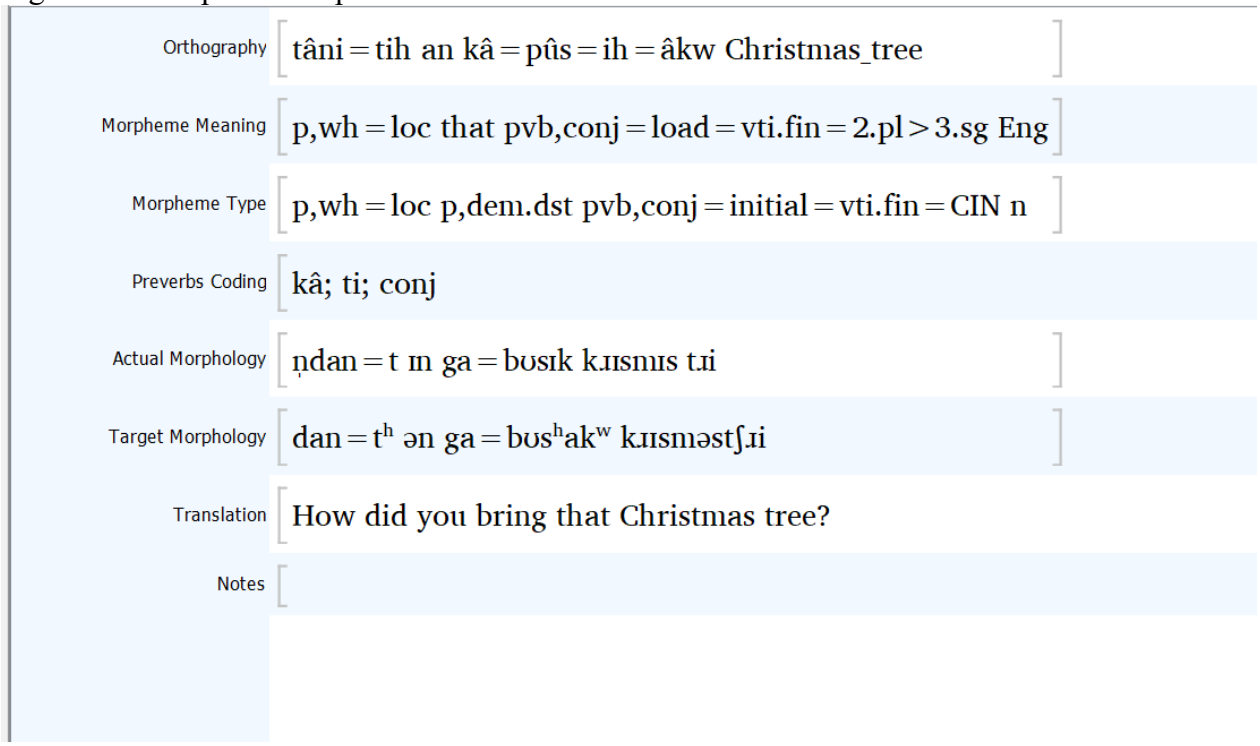
This coding allowed me to search for all tokens of *wîh* (want to), for example, and to know how many of them were changed forms. Other information, such as the number of preverbs in a given production, was also coded for; e.g., 2pvb = two preverbs. Additionally, in order to capture potentially interesting patterns in the data, the following features were coded for as necessary. The full set of features preverbs could be coded for is shown is Table 8.

Table 8 Coded features and abbreviations

Feature	Abbreviation
Verb class	
Animative intransitive	ai
Inanimate intransitive	ii
Transitive animate	ta
Transitive inanimate	ti
AI transitive (AI+O)	ai-tr
Inflectional order	
Conjunct	conj
Independent	ind
Imperative	imp
Other morphological features	
2 preverbs in a row	2pvb
English root	eng
Initial change	IC
Passive	pass
Relative clause	rel.cls.

The following figure provides a snapshot of a processed Phon record for my study.

Figure 4 Snapshot of a processed Phon record



5 Processing of Ani's corpus

I undertook some investigation of Ani's corpus which goes beyond what Brittain & Rose (2021) did: I made a count of how many verbs (with or without a preverb) she produces in the entire corpus (32 sessions) in order to make some comparisons between findings for Ani and Daisy (Chapter 6).

6 English Roots

Due to the influence of English in Chisasibi, English-origin words are included in the language (Brittain & MacKenzie, 2010), with Cree-English mixing becoming increasingly common among younger generations; see Pile (2018), in which she found that English-origin words account for 19.9% of CCLAS participant Billy's utterances. As mentioned previously, Daisy also code mixes

English-to-Cree. However, as Pile (2018) points out, there is no way to determine whether these kinds of utterances, including mixed verb-complexes, are novel constructions or acquired from the ambient language environment (i.e., are in common community use). English-origin items found in Daisy's speech were checked with Language Consultant, Alice Duff. In general, she found all the code-mixed forms in Daisy's corpus unacceptable for her personal use. This is not unexpected, given that the consultant is of a generation which is less likely to code-mix. However, as she observed, the forms discussed could be considered acceptable by younger adults, as Cree-English mixing is becoming increasingly common. Apart from *iskûliyuw* 's/he goes to school', which is in common use, and appears frequently in the CDS, English-origin words will be considered as "potential innovative forms" in this research.

7 Productivity Criteria

Children's ability to produce a given morpheme does not necessarily mean that this morpheme is productive for them. We have to ensure that the form is not a memorized chunk for the child, and the child is not repeating that form heard in the environment, but rather the child understands the functions of that form and has productive control over it. For this reason, a number of criteria for productivity have been proposed. This study adopts the criteria proposed by Allen & Crago (1989).

1. The morpheme in question appears in the transcript on at least two different stems, and preferably with two stems of phonologically different types so that two allomorphs of the morpheme are required.

2. Alternatively, the stem appears with a different morpheme attached in the same place, elsewhere in the transcript.
3. The relevant morpheme is used with clearly innovative forms.

These criteria will provide insight into the productivity of a given preverb. I assume that acquisition is a gradual process and, instead of using language like "morpheme X is acquired/not acquired", I will restrict myself to commenting on evidence of productive use for each of the preverbs examined in this study.

8 Including/Excluding Utterances

A small number of records containing preverbs were excluded from the study because the audio was unclear. Unclear records were checked in a series of Zoom work sessions with Language Consultant, Alice Duff. Those which could not be understood and fully transcribed were excluded as unintelligible.

Chapter 4 Data Description

1 Introduction

This chapter provides details about the production of the preverbs for both the single session of CDS (Section 2) and Daisy (Section 3). The sections are organized as follows: In section 2, I present the relevant facts for the CDS (the adult interacting with Daisy when she was age 05;05.03), and in section 3, Daisy's data are discussed. In 3.1, I provide an overview of the distribution of the preverb tokens and types in Daisy's inventory. Section 3.2 presents the preverb classes appearing in Daisy's corpus. In 3.3, I describe the distribution of Daisy's preverb productions in terms of which inflectional order she uses (independent, conjunct or imperative). Section 3.4 details the use of inflectional orders in multiple preverb combinations, and 3.5 does so for all verbs in Daisy's speech. In 3.6, I provide details of the preverbs affected by initial change. Details of her combinations of two preverbs per stem, and of three preverbs per stem, are provided in 3.7. Section 3.8 overviews the distribution of preverb-verb forms built on English-origin roots and other potential innovative forms.

2 Preverbs in the CDS

2.1 Introduction

This section provides the details of the preverb production in CDS. Section 2.2 presents the preverbs found in adult input. I next present the changed forms (2.3), preverb combinations (2.4), and English-origin roots (2.5).

2.2 CDS: preverbs inventory

In the session under scrutiny, the CDS consists of a total of 293 utterances. In these utterances, the adult produces 164 tokens of verbs (with or without a preverb) and 109 tokens of preverbs, as in Table 9.

Table 9 Preverb production in CDS

Child's Age	# Utterances	Total verb tokens	Total preverb tokens
05;05.03	293	164	109

Table 10 lists the types of preverbs in the CDS. The adult produces 14 different types of preverbs from all three sets (i.e., grammatical, lexical and directional). This table includes the preverbs presented in Table 3, to show which of the set are not present in this 31 minute session of the CDS.

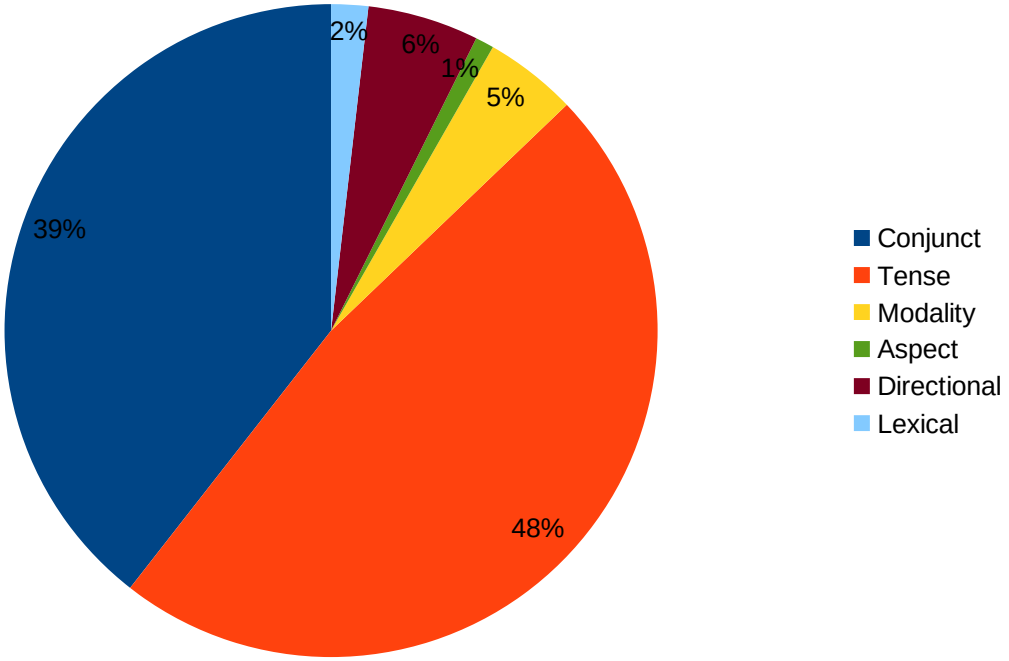
Table 10 Preverb types present in CDS

Preverb Type	Function/ Meaning	Tokens (N)	Tokens	(% of total N)
Conjunct neutral preverb	âh	complementizer/relativizer	10	9.17%
Conjunct preverb	kâ	complementizer/relativizer, past tense in some contexts, focus constructions	33	30.27%
Tense	chîh	past tense	14	12.84%
	uhchi	past tense, negated clause	6	5.50%
	châ	future	17	15.59%
	châ	future, functioning as imperative (2nd person form only)	-	-
	ki	independent non-third future	13	11.92%
	chiki	independent third future	2	1.83%
	kiti	future	-	-
Modality	chîh	'able to'	2	1.83%
	wîh	'want to'	3	2.75%
	pih	non-third 'should, could'	-	-
	chipih	third 'should,' 'could'	-	-
	chîh	'should have'	-	-
Aspect	ati	inchoative	1	0.91%
	chihch	inceptive 'start to do something'	-	-
	chîsh	completive 'completed doing something'	-	-
Directional	pâchi	'toward' speaker	2	1.83%
	uhchi	'away from' speaker	4	3.66%
Lexical	ishi	'in a certain manner'	1	0.91%
	nânitû	'go do something'	-	-
	pûni	'stop doing something'	-	-
	nîpâ	'during the night'	-	-
	miyu	'good/well'	-	-
	michi	'bad/badly'	-	-
	nihtâu	'be good at'	-	-
	wîchi	'together'	1	0.91%
Total			109	100%

The majority of preverb production comes from the grammatical set (92.66%), and within this set, Tense and Conjunct preverbs are the most frequent types, comprising 87.14% (47.70% and 39.44% respectively) of the preverb production. Directional and lexical preverbs, on the other hand, constitute only 7.34% of the preverb production altogether (8/109). The preverb *kâ* is the

most frequently used type in CDS with 33 tokens overall, appearing in main clauses (13/33), relative clauses (8/33), past tense *wh*-clauses (7/33), past tense subordinate clauses (5/33). The conjunct preverb *châ* occurs in the adult corpus 17 times; although Daisy's tokens of *châ* were coded for the two different functions (future tense marker vs. imperative function for second person singular forms), it was beyond the scope of this thesis to code the adult *châ* examples for this distinction. Tense preverbs *chîh* (past) and *ki* (future non3) follow the conjunct preverbs in frequency, appearing in 14 and 13 utterances respectively. The adult uses the preverb *âh* in subordinate clauses which often translate into English as gerunds (3/10), infinitives (2/10), when-clauses (1/10), relative clauses (1/10), and *wh*-clauses (1/10). Other type of preverbs occur in CDS less frequently, forming 12.84% of all preverb production. Figure 5 displays the percentage of each preverb type found in adult production.

Figure 5 Proportions of the preverb types in CDS



2.3 Inflectional orders in CDS

In CDS, all three orders are present, however, the conjunct and independent are quite prominent. The most frequent order is the conjunct, employed in 65 tokens of verbs, accounting for 63.72% of her verb production that includes a preverb or preverbs. Following is the independent, occurring in 32 tokens of utterances with a preverb, and two tokens with multiple preverbs, forming 33.33% of the adult's preverb production. Lastly, imperative order appears in only three utterances. The distribution of inflectional orders is tallied in Table 11.

Table 11 Proportions of the orders in CDS

Order	# of Token	Percentage
Conjunct	65	63.72%
Independent	34	33.33%
Imperative	3	2.94%

61 preverb tokens paired with the conjunct come from two sets and five different types of preverbs, as illustrated in Table 12.

Table 12 Preverbs with the conjunct in CDS

Preverb	# of Tokens	Percentage
kâ	31	47.69%
âh	16	24.61%
châ	10	15.38%
uhchi (from)	3	4.61%
uhchi (past/negation)	1	1.53%
Total	**61**	**93.84%**

Conjunct preverbs appear to account for the biggest proportion of the adult's preverb production with the conjunct, making up 93.44% of them. Additionally, the adult produces four conjunct verbs preceded by multiple preverbs. These preverb sequences are listed in Table 13.

Table 13 Preverb combinations with the conjunct in CDS

Preverb Combination	# of Tokens	Percentage
uhchi (from)+*chîh* (past)	1	1.53
kâ+*chîh* (past)	1	1.53
kâ+*wîchi* (together)	1	1.53
châ (future)+*ati* (inchoative)	1	1.53
Total	**4**	**6.15**

Table 14 tabulates the types of preverbs appearing across 32 tokens of preverb and two tokens of 2-preverb sequences with the independent in the CDS. Of the five preverbs produced, four of them are tense preverbs, constituting 91.17% of the independent verb production with preverbs.

Table 14 Preverbs with the independent in CDS

Preverb Combination	# of Tokens	Percentage
chîh (past)	12	35.29%
ki (future non3)	10	29.41%
uhchi (past/negation)	5	14.70%
wîh (want to)	3	8.82%
chiki (future 3)	2	5.88%
ki (future non3)+*chîh* (able to)	2	5.88%
Total	**34**	**100%**

Only three tokens of preverb appear in combination with the imperative in adult speech, two occurring with the directional preverb *pâchi* (toward), and one with *ki* (future non3)+*ishi*.

2.4 Initial change

Only one type of changed form is found in CDS. The preverb *wâhchi*, the changed form of *uhchi* (from), is produced four times with four different verb stems in adult speech.

2.5 Preverb combination

Six different types of preverb combination are present in CDS, and each one exclusively consists of two preverbs. Except for one combination, *ki* (future non3)+*chîh* (able to), which occurs in two utterances, all combinations appear only once in the session under scrutiny. Table 15 lists the combinations found in CDS.

Table 15 Preverb combination in CDS

Combination	Inflection	Token
IC.*uhchi* (from)+*chîh* (past)	conjunct	1
kâ+*chîh* (past)	conjunct	1
ki (future non3)+*ish*	imperative	1
ki (future non3)+*chîh* (able to)	independent	2
kâ+*wîchi* (together)	conjunct	1
châ (future)+*ati* (inchoative)	conjunct	1
Total		**7**

2.6 English-origin Words

The adult produces a total of 26 English-origin lexical items: 22 nouns, and four tokens of "marry" used as a verb root. This root is not present in Daisy's speech. The adult uses it with the preverb *kâ* twice and with preverbs *chîh* (past) and *âh* once.

3 Daisy

3.1 Daisy's preverb inventory, tokens and types

A total of 2,527 verb tokens appear in Daisy's inventory, 1,434 of which Daisy combines with at least one preverb: 1,264 verbs have one preverb, 168 verbs have two preverbs, and two verbs have three preverbs.

In total, she produces 1,603 preverb tokens, representing 14 different morphemes: 12 grammatical, 2 directional and 2 lexical. As Table 3 shows (in Chapter 2), of these 12 grammatical preverbs, two are subject to allomorphy (the independent future forms are *ki~chiki* dependent on person features, with an alternation of *chiki~kiti* based on dialect variation, and modal 'should/could' has two forms *pih~chipih* also dependent on person features). Assuming the allomorphs are preverb forms Daisy has to learn, she uses 15 grammatical preverbs (12 plus 3 alternant forms). In addition, as explained in chapter 3, I coded the conjunct future preverb *châ* differently depending on how Daisy uses it: as a simple future marker (coded *châ*.1) or in a construction that functions as an imperative (*châ*.2). I am counting these as two distinct forms to be learned bringing the total number of preverb forms in Daisy's inventory to 20 (16 grammatical, two directional and two lexical).

As Table 16 shows, Daisy is using preverbs in the earliest session (age 03;08.10).

Table 16 Preverb production in Daisy's speech

Age	Number of preverbs	Length of the Session (Mins:Secs)
03;08.10	79	35:48
03;09.23	167	37:16
03;11.11	308	58:32
04;02.16	148	50:25
04;04.04	171	40:04
04;06.02	96	41:58
04;07.28	159	43:28
04;10.03	151	43:25
05;00.20	135	35:17
05;04.12	42	33:31
05;07.03	147	32:26
Total	**1603**	

The raw numbers of preverbs which appear in any given session varies presumably for various reasons; one of these is session length, so in the longest session (at age 03;11.11) she produces the highest number of preverbs (308). The shortest session, however, (at age 05;07.03) does not yield less preverbs, and the sessions do not vary greatly in length – most are around 30 to 40 minutes in length. What accounts for the variation in preverb numbers in any given session? I expect in part it will be due to the kinds of activities going on, the things being talked about; for example, if Daisy is asking a lot of *wh*-questions, these will be in the conjunct so we might expect more conjunct preverbs. It is beyond the scope of this thesis to examine the grammatical and functional contexts in which preverbs are used, suffice it to say, from the earliest session she seems quite adept with preverbs.

Table 17 tabulates the number of tokens of each preverb type, and their proportions relative to her entire preverb production. This table includes the preverbs presented in Table 3, to show which of the set are not present in Daisy's inventory.

Table 17 Daisy's preverb inventory, by preverb type

Preverb Type	Preverb	Function/Meaning	Tokens	(% of total N)
Conjunct neutral preverb	âh	complementizer/relativizer	218	13.59%
Conjunct preverb	kâ	complementizer/relativizer, past tense in some contexts, focus constructions	378	23.58%
Tense	chîh	past tense	269	16.78
	uhchi	past tense, negated clause	28	1.74%
	châ	future	109	6.79%
	châ	future, functioning as imperative (2nd person form only)	48	2.99%
	ki	independent non-third future	199	12.41%
	chiki	independent third future	50	3.11%
	kiti	future	3	0.18%
Modality	chîh	'able to'	38	2.37%
	wîh	'want to'	101	6.3%
	pih	non-third 'should, could'	2	0.12%
	chipih	third 'should,' 'could'	6	0.37%
	chîh	'should have'	3	0.18%
Aspect	ati	inchoative	9	0.56%
	chihch	inceptive 'start to do something'	-	-
	chîsh	completive 'completed doing something'	15	0.93%
Directional	pâchi	'toward' speaker	95	5.92%
	uhchi	'away from' speaker	22	1.37%
Lexical	ishi	'in a certain manner'	5	0.31%
	nânitû	'go do something'	-	-
	pûni	'stop doing something'	-	-
	nîpâ	'during the night'	-	-
	miyu	'good/well'	-	-
	michi	'bad/badly'	-	-
	nihtâu	'be good at'	-	-
	wîchi	'together'	5	0.31%
Total			**1603**	**100%**

The conjunct preverb *kâ* is the most frequent preverb in Daisy's inventory, at 23.58% (378/1,603) of the total number of preverbs. The next most frequent preverb type in Daisy' inventory is *chîh* (past tense), at 16.78% (269/1,603), followed by the conjunct preverb *âh*, at 13.59% (218/1,603).

Table 18 shows just the number of conjunct preverbs in the inventory and in Table 19, I show the breakdown for the remaining grammatical preverbs. In Table 20, I show the breakdown for directional and lexical preverbs.

Table 18 Conjunct preverbs

Preverb Age	âh	kâ	*châ* (future)	*châ* (imperative)
03;08.10	23	8	3	0
03;09.23	43	28	14	0
03;11.11	28	63	31	10
04;02.16	13	30	4	0
04;04.04	34	41	9	8
04;06.02	12	18	11	4
04;07.28	14	34	10	21
04;10.03	7	41	6	3
05;00.20	27	28	11	1
05;04.12	4	9	3	0
05;07.03	13	78	7	1
Total	**218**	**378**	**109**	**48**

Table 19 Other grammatical preverbs in Daisy's inventory

Preverb Age	*chîh* past	*uhchi* past neg	*ki* fut non 3	*chiki* fut 3	*kiti* fut 3	*chîh* able to	*wîh* want to	*pih* should could non 3	*chipih* should could 3	*chîh* should have	*ati* inch	*chîsh* cmp
03;08.10	25	1	4	2		2	8				1	
03;09.23	17	1	26	14	1	3	5				1	5
03;11.11	35	5	47	6		7	26		1	1		2
04;02.16	43	4	23	8		1	14		1		1	
04;04.04	16	5	24	3	2	5	8				1	
04;06.02	9	1	17	5		3	9					1
04;07.28	30	4	20	2		3	12					3
04;10.03	31	4	18	5		10	5	2	3	1		
05;00.20	29	1	14	2		4	5				2	
05;04.12	9		4	2			2		1	1		4
05;07.03	25	2	2	1			7				3	
Total	**269**	**28**	**199**	**50**	**3**	**38**	**101**	**2**	**6**	**3**	**9**	**15**

Table 20 Directional and lexical preverbs in Daisy's inventory

Preverb Age	*pâchi* (toward)	*uhchi* (from)	*wîchi* (together)	*ishi* (relative root)
03;08.10	2	0	0	0
03;09.23	5	0	1	3
03;11.11	41	4	0	1
04;02.16	4	2	0	0
04;04.04	14	1	0	0
04;06.02	4	2	0	0
04;07.28	4	2	0	0
04;10.03	6	4	4	1
05;00.20	8	3	0	0
05;04.12	2	1	0	0
05;07.03	5	3	0	0
Total	**95**	**22**	**5**	**5**

The subtotals of preverb classes is shown in Table 21.

Table 21 Subtotals of preverb

Conjunct preverbs	753
Other grammatical preverbs	723
Directional and lexical	127
Total	**1603**

There is no observable pattern of increase in the number of any of the preverb types, although the numbers show that there are preverbs she uses frequently right from the first sessions (03;08.10), and preverbs which are fairly uncommon in her inventory. Table 18 shows that she uses the conjunct preverbs in all the sessions, but that her use of the *châ* in imperative construction is sporadic and does not begin until age 03;11.11. This will be discussed further in Chapter 5. On the other hand, among the other grammatical preverbs (Table 19) we can see that several appear less than 10 times in total: *kiti* (independent third allomorph); *pih* (should, could, non3); *chipih* (should, could, 3); *chîh* (should have); and *ati* (inchoative). Is this a feature of acquisition in that she has not yet reached the stage at which she uses such forms with confidence, or it is a feature of the frequency of these preverbs in the language as a whole? Is Daisy performing here in an adult-like manner with respect to infrequently produced preverbs? To provide an answer to this question, I compare Daisy's production to that of the adult. Discussion of this issue will be taken up in Chapter 6. The most preverb diversity is observed at age 03;11.11 and 4;10.03 with 16 and 17 different types respectively, and the least variety is found at age 03;08.10, the earliest session in this study, as well as at ages 05;04.12 and 05;07.03, with 11 and 12 different types respectively. On average, Daisy makes use of 13.5 different types across the sessions.

3.2 Preverb classes in Daisy's inventory

The vast majority of Daisy's preverb production consists of grammatical preverbs, accounting for 92.07% (1476/1603). Directional and lexical preverbs, on the other hand, constitute only 7.91% (127/1603) of Daisy's inventory (Table 22).

Table 22 Proportion of the preverb sets

Set	Tokens	Types	Percentage of total preverb production
Grammatical	1476	16	92.07%
Directional	117	2	7.29%
Lexical	10	2	0.62%
Total	**1603**	**20**	**100%**

Within the grammatical set, tense and conjunct preverbs are the most prominent types: they form 48.03% (709/1476) and 40.37% (596/1476) of the production of the grammatical preverbs respectively. Modal preverbs follow them with 147 tokens (9.95%), and aspectual preverbs are only produced at a rate of 1.62% (24/1476). Table 23 demonstrates the proportion and the number of preverb types from the grammatical set in Daisy's speech.

Table 23 Distribution of preverb types within grammatical set[12]

Preverb Type	Token	Percentage
Conjunct	596	40.37%
Tense	709	48.03%
Modality	147	9.95%
Aspect	24	1.62%
Total	**1476**	**100%**

12 The preverb *châ* is treated as a tense preverb in this table.

3.3 Inflectional orders and preverb distribution for single preverb constructions

In this section I discuss the 1,264 preverbs which Daisy uses in a construction of the form preverb-verb, Daisy uses preverbs with verbs inflected for all three inflectional orders from the beginning of the recording period (03;08.10). Table 24 shows the total number of inflectional orders for each session, for verbs which are combined with a preverb. As mentioned earlier, Daisy uses one or more preverbs with 1,434 verb tokens (1,264 verbs have one preverb, 168 verbs have two preverbs, and two verbs have three preverbs).

Table 24 Daisy's use of preverbs with different inflectional orders per session

Age	Conjunct	Independent	Imperative	Total
03;08.10	29	25	1	55
03;09.23	83	59	4	146
03;11.11	116	109	2	227
04;02.16	43	77	-	120
04;04.04	84	43	2	129
04;06.02	44	37	2	83
04;07.28	79	68	2	149
04;10.03	57	55	-	112
05;00.20	51	38	-	89
05;04.12	16	20	-	36
05;07.03	92	26	-	118
Total	**694**	**557**	**13**	**1264**

Daisy uses preverbs frequently with conjunct and independent verbs, but relatively little with imperative verbs; since grammatical preverbs are incompatible with imperative verbs, and most of her preverbs are grammatical, this is expected. This distribution addresses Research Question 1, which set out to examine the extent to which, if any, Daisy's inventory would show a pattern like Ani's: as mentioned previously, Ani combines preverbs with independent at age 2;04, and

doesn't start to do so with the conjunct until age 2;11 (Brittain & Rose, 2021). The distribution of three inflectional types in Daisy's inventory is discussed in sections 3.3.1, 3.3.2 and 3.3.3, respectively, with further discussion in Chapter 6 (section 3.1.1).

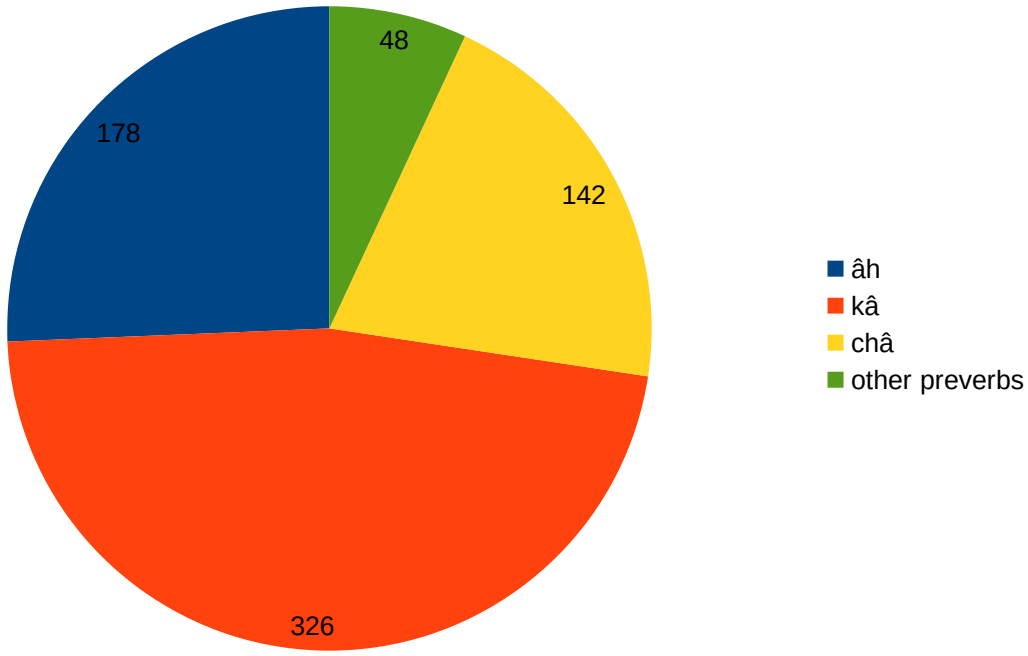
3.3.1 Preverbs combined with conjunct verbs

The majority of Daisy's preverb-conjunct productions (646/694, 93.08%) consist of only the three conjunct preverb: *âh*, *kâ*, and *châ*. She combines eight other preverb types with the conjunct but these constitute only 6.91% (111/222) of the forms where she uses a preverb with a conjunct verb. Table 25 tabulates the number of tokens of each preverb with the conjunct for every session, and Figure 6 displays the relative distribution of all the preverbs used with a conjunct verb, with a focus on the conjunct preverbs.

Table 25 Daisy's preverbs combined with a conjunct verb

Preverb / Age	âh	kâ	châ (FUT)	châ (IMP)	chîh (PAST)	chîh (should have)	uhchi (past. neg)	wîh (want to)	chîsh (comp)	ati (inch)	pâchi (toward)	uhchi (from)
03;08.10	19	6	3	-	-	-	-	-	-	1	-	0
03;09.23	41	25	12	-	-	-	-	4	1	-	-	0
03;11.11	23	50	23	7	-	-	-	5	1	-	4	3
04;02.16	10	27	4	-	-	-	-	-	-	-	-	2
04;04.04	30	35	9	8	-	-	-	1	-	-	-	1
04;06.02	9	17	11	4	-	-	-	1	-	-	-	2
04;07.28	11	33	10	21	-	-	-	1	1	-	-	2
04;10.03	7	37	5	2	2	1	-	-	-	-	-	3
05;00.20	14	20	11	1	-	-	-	1	-	1	-	3
05;04.12	4	8	3	-	-	-	-	-	-	-	-	1
05;07.03	10	68	7	1	-	-	1	-	-	1	1	3
Total	178	326	98	44	2	1	1	13	3	3	5	20

Figure 6 Daisy's preverbs combined with a conjunct verb: relative proportions



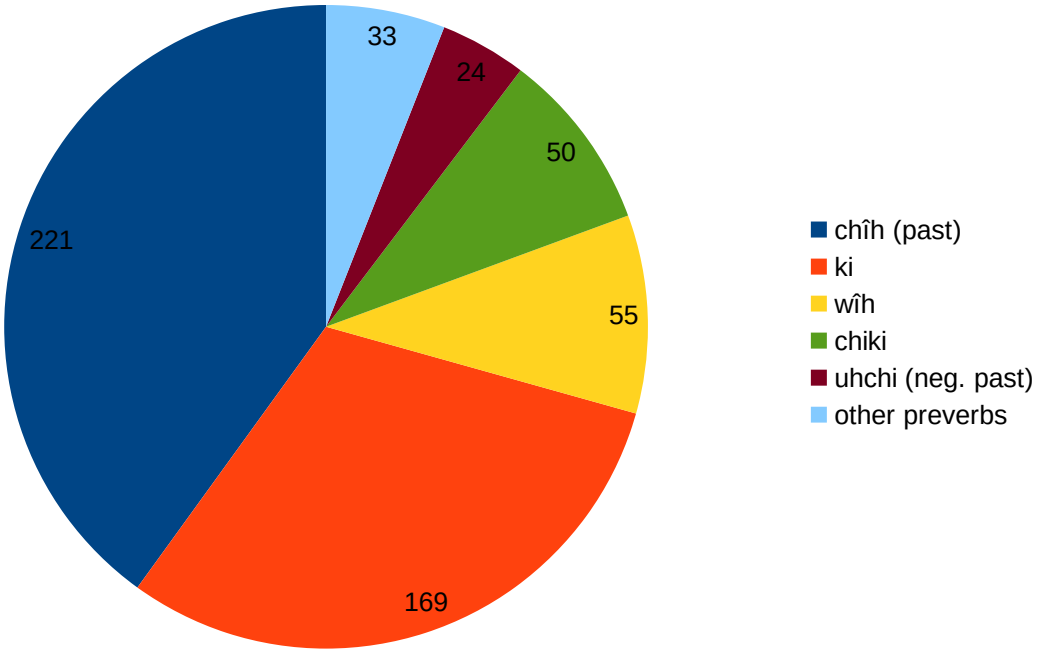
3.3.2 Preverbs combined with Independent verbs

As shown in the previous section, Daisy uses a variety of preverbs with the conjunct. Similarly, she uses 11 different preverb types with the independent. However, more diversity is observed in the usage of the independent: five types of preverbs make up 94.02% of her preverb production with the independent, while 5.97% come from the other 6 types. Table 26 shows the number of each preverb with the independent for each session, and the relative proportions of each is displayed in Figure 7.

Table 26 Preverbs combined with an independent verb

Preverb Age	*chîh* past	*ki* future non3	*chiki* fut 3	*kiti* fut 3	*chîh* should have	*uhchi* past neg	*chîh* able to	*wîh* want	*chîsh* cmp	*pâchi* toward	*wîchi* together
03;08.10	19	1	2	-	-	1	-	2	-	-	-
03;09.23	17	21	14	1	-	1	1	-	4	-	-
03;11.11	31	44	6	-	1	5	3	15	-	4	-
04;02.16	35	22	8	-	-	4	-	7	-	1	-
04;04.04	10	19	3	-	-	5	1	4	-	1	-
04;06.02	8	16	5	-	-	1	1	5	-	1	-
04;07.28	29	19	2	-	-	2	2	11	3	-	-
04;10.03	26	11	5	-	-	2	-	5	-	2	4
05;00.20	16	11	2	-	-	1	-	4	4	-	-
05;04.12	8	4	2	-	-	-	-	2	4	-	-
05;07.03	22	1	1	-	-	2	-	-	-	-	-
Total	**221**	**169**	**50**	**1**	**1**	**24**	**8**	**55**	**15**	**9**	**4**

Figure 7 Distribution of the Independent



3.3.3 Preverbs combined with imperative verbs

Daisy uses preverbs with the imperative in just six sessions, in 14 utterances, using just three types of preverbs. Except for directional *pâchi* (toward), no preverb appears in more than one session. As stated previously, to the best of our knowledge at present, imperative verbs are incompatible with grammatical preverbs. Nevertheless, Daisy uses the preverb *ati* (inchoative) once with the imperative verb. Imperative preverbs and their usages over time are provided in Table 27.

Table 27 Preverbs combined with an imperative verb: relative proportions

Preverb	*pâchi* (toward)	*ati* (inchoative)	Total
Age			
	Directional	Grammatical	
03;08.10	1	-	1
03;09.23	4	-	4
03;11.11	2	-	2
04;02.16	-	-	-
04;04.04	1	1	2
04;06.02	2	-	2
04;07.28	2	-	2
04;10.03	-	-	-
05;00.20	-	-	-
05;04.12	-	-	-
05;07.03	-	-	-
Total	**12**	**1**	**13**

3.4 Multiple preverb constructions and inflectional orders

In addition to the preverb-verb combinations discussed above, 108 tokens of conjunct and 60 tokens of independent verbs appear in two-preverb constructions. Additionally, for two independent verbs, Daisy uses the three-preverb string *ki* (future non3)+*chîh* (able to)+*pâchi*

(toward), at ages 03;11.11 and 04;10.03. The number of verb tokens with multiple preverbs (108 conjunct and 62 independent) are presented per session in Table 28.

Table 28 Tokens of orders with multiple preverbs

Child Age	Conjunct	Independent
03;08.10	6	6
03;09.23	7	5
03;11.11	32	9
04;02.16	6	9
04;04.04	11	8
04;06.02	4	4
04;07.28	4	1
04;10.03	6	13
05;00.20	16	5
05;04.12	1	2
05;07.03	15	-
Total	**108**	**62**

3.5 Details of the inflectional paradigms (for all verbs)

For additional insight, in order to see the general distribution of the inflectional paradigms, Daisy's total verb production was analyzed (i.e., verbs with or without a preverb), and five inflectional paradigms have been found in Daisy's speech. While in the case of verbs combined with one or more preverbs it was found that there were slightly more conjunct than independent verbs (694 vs. 557), looking at total verb production, independent verbs are more frequent: 52.72% (1315/2494) of Daisy's total verbs are independent. Conjunct verbs, on the other hand, comprise 41.98% of her total verb production (1047/2494). Imperative verbs, again, are used a handful of times, with 123 tokens, overall (4.93%, 123/2,494). There are various paradigms within the independent order, some of which Daisy uses: she produces verbs inflected for the Independent Dubitative Preterit (IDP) and Independent Dubitative Neutral (IDN) paradigms.

Because these forms are properly used to refer to irrealis situations, they are likely to be less frequently used even in the adult language, though this remains to be checked. In child speech, however. these forms are likely to be even less common, for a number of reasons (including extra-linguistic): Gaya (1972) showed that Spanish L1 speakers do not master mood selection (subjunctive vs. indicative) until adolescence. Pérez-Leroux (1998) reported the effects of maturational factors on subjunctive development for Spanish L1 learners concluding that acquisition depends reaching an age at which they can distinguish between reality and belief.

Total number of verbs, with or without a preverb, with each order is given in Table 29.

Table 29 Verbs with or without a preverb and the inflectional order

Child Age	Conjunct Indicative Neutral	Independent Indicative Neutral	Independent Dubitative Preterit	Independent Dubitative Neutral	Imperative	Total
03;08.10	62	66	-	-	9	137
03;09.23	127	120	-	-	12	259
03;11.11	191	221	-	1	11	424
04;02.16	63	128	2	-	7	200
04;04.04	121	81	-	-	12	214
04;06.02	60	152	3	-	12	227
04;07.28	111	143	-	-	47	301
04;10.03	88	144	-	-	8	240
05;00.20	78	141	-	-	2	221
05;04.12	24	50	1	-	3	78
05;07.03	122	69	2	-	-	193
Total	**1047**	**1315**	**8**	**1**	**123**	**2494**

There are six conjunct paradigms, of which Daisy just uses one, the Conjunct Indicative Neutral (CIN), arguably the most frequent and the least conceptually complex (others are irrealis: Conjunct Indicative Neutral Subjunctive, Conjunct Indicative Neutral iterative/habitual, Conjunct

Dubitative Neutral, Conjunct Dubitative Preterit 1, Conjunct Dubitative Preterit 2). All conjunct verbs that have one or more preverbs are CIN. For the independent order, on the other hand, she uses some irrealis forms as shown in the table above (9/2,494 verbs), one of these is with a preverb. I defer discussion of this issue to Chapter 6. While the number of imperative forms is fairly low, we should not forget that in NE Cree there is an alternative way to create constructions for giving commands (conjunct form *châ*), and these forms are represented in Daisy's inventory. Below in (36), I provide two instances of irrealis forms found in Daisy's speech.

(36) Irrealis forms in Daisy's corpus

a) *Winihtâkiniwiichichâ anihî, nimâ?*

Winiht-âkiniwi-ichichâ	ani-hî	nimâ
lose(AI-TR)-PASS.3.SG-IDP.3.SG	that-INAN.PL	right

'Somebody must have lost them, right?'

(Daisy, 04;06.02)

b) *Tâpâ wîh mininimuchichâ pâyikw.*

tâpâ	wîh	minin-imuchichâ	pâyikw
NEG	PVB.want	remove(TI)-IDN.S:3.SG/O:0.SG	one

'I don't think she wants to take one off.'

(Daisy, 03;11.11)

3.6 Initial Change

In total, in the 11 sessions under study, Daisy produces 237 tokens of verb complexes affected by the synchronic process of initial change, including 34 preverbs. (In this number, I do not count the lexicalized changed form conjunct preverbs *âh*, *kâ*, *châ*). Details of how she uses initial

change with verb stems remain to be investigated by future work, but these figures show that she is using initial change in both locations on the verb complex: affecting the stem (initial) and to lesser extent preverbs. The 34 changed form preverbs involve four preverb types. As mentioned previously, in the short session of CDS I looked at, there is only preverb type that occurs in changed form, which is *wâhchi* (want to) with four tokens, and no changed form is found in Ani's corpus. The preverbs affected by initial change and their usages across sessions in Daisy's speech are provided in Table 30.

Table 30 Preverbs with initial change

Preverb	IC.*wîh* (want to)	IC.uhchi (from)	IC.ati (inchoative)	IC.*pâchi* (toward)	**Total**
Age	*wâh*	*wâhchi*	*âti*	*piyâchi*	
03;08.10	1	-	1	-	**2**
03;09.23	4	-	-	-	**4**
03;11.11	2	4	-	-	**6**
04;02.16	-	2	-	-	**2**
04;04.04	1	1	-	-	**2**
04;06.02	1	2	-	-	**3**
04;07.28	-	2	-	-	**2**
04;10.03	-	3	-	-	**3**
05;00.20	-	3	1	-	**4**
05;04.12	-	1	-	-	**1**
05;07.03	-	3	1	1	**5**
Total	**9**	**21**	**3**	**1**	**34**

Two types of preverbs in a changed form appear at the start of the observation period, with one token each. The changed form of the preverb *wîh* (want to), *wâh*, is found in nine utterances in five sessions, and the variety of the verbs stems suggests a productive usage of this changed form. This will be discussed further in chapter 5. The following example in (37) shows her first utterances with *wâh.* This appears in a main clause, which is likely to be a focus construction

because of the first word being the demonstrative *mâu;* Brittain & Rose (2021) discuss examples of Ani using main clause conjunct verbs in the same kinds of structures.

(37) *Mâu wâh utinimân.*

mâu	wâh	utin-imân
this	IC.PVB.want	take(TI)-CIN.S:1.SG/O:0.SG

'This is what I want to take.'

(Daisy, 03;08.10)

The other earliest token is the changed form *âti* (inchoative) (38).

(38) *Mîshkuch, shâsh, utâh âti îshinâkuhch*

mîshkuch	shâsh	utâh	âti	îshinâkuh-ch
instead	already	this	IC.PVB.begin	look.like(II)-CIN.0.SG

'So now, instead, it's going to look this way.'

(Daisy, 05;07.03)

The preverb *wâhchi* is the changed form of *uhchi* (from), which, as mentioned previously, often appears in *wh*-questions, forming part of the interrogative phrase. This form appears first at the age of 03;11.11, and similar to what has been found in the CDS, it is the most frequent changed form in Daisy's speech, accounting for 61.76% (21/34) of her changed form preverbs. It is mostly employed in questions that includes the *wh*-pronoun *châkwân~châkwâ* 'what' (*châkwân wâhchi* = 'why'), as shown in (39).

(39) *Châkwâyiu wâhchi îsinihkâsut anitâh?*

châkwâ-yiu	wâhchi	îsi-nihkâsu-t	anitâh
WH-OBV	IC.PVB.from	RR-name(AI)-CIN.3.SG	that

'Why is he called (like) that?'

(Daisy, 04;10.03)

In some cases, Daisy uses it in its core meaning, denoting direction, as in (40).

(40) *Utâh wâhchi sâchiskwâpit uyâ houseyiu.*

utâh	wâhchi	sâchiskwâpi-t	uyâ	house-yiu
here	IC.PVB.from	sit.with.heading.poking.out(AI)-CIN.3.SG	this.INAN.OBV	ENG-OBV

'She sits here, where her head is poking out of the house.'

(Daisy, 05;07.03)

Lastly, at the end of the recording session, Daisy produces one token of *piyâchi*, the changed form of *pâchi* (toward). This utterance, which is likely to be a focus construction (due to *âukun*) is given in (41).

(41) *Âukunichî piyâchi mâyâyimich.*

âukuni-chî	piyâchi	mâyây-ich
that.one-AN.PL	IC.PVB.toward	disrespect(TA)-CIN.S:3.PL/O:1.SG

'Those are the ones that are disrespectful to me [bully me].'

(Daisy, 05;07.03)

3.7 Multiple preverb constructions, the details of preverbs used

In section 3.4, I discussed Daisy's multiple preverb combinations from the perspective of which inflectional orders she used. In this section, I present the details of these combinations. Differing from Ani, whose preverb template exclusively consists of only one preverb, a great number of combinations are found in Daisy's dataset. Throughout all 11 sessions, 37 different types of two-preverb sequences involving 176 preverb tokens are found. Table 31-Table 37 lists these combinations and breaks down their usages.

Table 31 Two-preverb combinations, with first member *âh*

Preverb Age	*âh+chîh* (past)	*âh+wîh (*want to)	*âh+wîch* *(*together)	*âh+ishi* (relative root)	*âh+pâchi* toward	*âh+uhchi* *(*neg. past)
03;08.10	2	2	-	-	-	-
03;09.23	-	1	1	-	-	-
03;11.11	-	1	-	1	3	-
04;02.16	1	2	-	-	-	-
04;04.04	2	1	-	-	2	-
04;06.02	-	2	-	-	1	-
04;07.28	1	-	-	-	-	1
04;10.03	1	-	-	-	-	-
05;00.20	13	-	-	-	-	-
05;04.12	-	-	-	-	-	-
05;07.03	2	-	-	-	1	-
Total	**22**	**9**	**1**	**1**	**7**	**1**

Table 32 Two-preverb combinations, with first member *kâ*

Preverb Age	*kâ+chîh* (past)	*kâ+wîh* (want to)	*kâ+ati* inchoative	*kâ+pâchi* (toward)	*kâ+uhchi* (from)	*kâ+uhchi* (neg past)	*kâ+ishi* (relative root)
03;08.10	1	1	-	-	-	-	-
03;09.23	-	-	-	1	-	-	2
03;11.11	-	2	-	11	-	-	-
04;02.16	1	1	1	-	-	-	-
04;04.04	1	1	-	5	-	-	-
04;06.02	1	-	-	-	-	-	-
04;07.28	-	-	-	1	-	-	-
04;10.03	-	-	-	1	1	1	1
05;00.20	1	-	1	6	-	-	-
05;04.12	-	-	-	1	-	-	-
05;07.03	1	6	2	3	-	-	-
Total	**6**	**11**	**4**	**29**	**1**	**1**	**3**

Table 33 Two-preverb combinations, with first member *chîh* (past)

Preverb Age	*chîh+wîh* (want to)	*chîh+pâchi* (toward)
03;08.10	3	-
03;09.23	-	-
03;11.11	3	-
04;02.16	3	3
04;04.04	-	3
04;06.02	-	-
04;07.28	-	-
04;10.03	-	1
05;00.20	-	2
05;04.12	-	1
05;07.03	-	-
Total	**9**	**10**

Table 34 Two-preverb combinations, with first member *châ*

	châ (imperative)	*châ* (conjunct future)	
Preverb	*châ*+*pâchi (*toward)	*châ*+*pâchi (*toward)	*châ*+*ati* (inchoative)
Age			
03;08.10	-	-	-
03;09.23	-	-	1
03;11.11	3	9	-
04;02.16	-	-	-
04;04.04	-	-	-
04;06.02	-	-	-
04;07.28	-	-	-
04;10.03	-	1	-
05;00.20	-	-	-
05;04.12	-	-	-
05;07.03	-	-	-
Total	**3**	**10**	**1**

Table 35 Two-preverb combinations, with first member *uhchi* (past/negation)

Preverb	*uhchi*+*chîh* (past)	*uhchi*+*pâchi* (toward)
Age		
03;08.10	-	-
03;09.23	-	-
03;11.11	-	-
04;02.16	-	-
04;04.04	-	-
04;06.02	-	-
04;07.28	-	1
04;10.03	1	-
05;00.20	-	-
05;04.12	-	-
05;07.03	-	-
Total	**1**	**1**

Table 36 Two-preverb combinations, with first member *ki* (future non3), *chiki* (future 3) or *kiti* (future 3)[13]

Preverb / Age	*ki+pâchi* (toward)	*ki+chîh* (able to)	*ki+ishi* (relative root)	*ki+wîh* (want to)	*chiki +pâchi* (toward)	*chiki+ chîh* (able to)	*chiki +wîh* (want to)	*chiki+ chîsh* (completive)	*kiti+chîh* (able to)
03;08.10	1	2	-	-	-	-	-	-	-
03;09.23	1	2	1	-	1	-	-	-	-
03;11.11	1	1	-	-	1	-	-	-	-
04;02.16	-	-	-	1	-	1	-	-	-
04;04.04	2	1	-	-	-	1	-	-	2
04;06.02	-	1	-	-	-	1	1	1	-
04;07.28	-	1	-	-	-	-	-	-	-
04;10.03	-	6	-	-	-	-	-	-	-
05;00.20	-	3	-	-	-	1	-	-	-
05;04.12	-	-	-	-	-	-	-	-	-
05;07.03	-	-	-	-	-	-	-	-	-
Total	**5**	**17**	**1**	**1**	**2**	**4**	**1**	**1**	**2**

Table 37 Other two-preverb combinations

Preverb / Age	*chîshi+pâchi*	*chîh* (able to) *+pâchi*	*IC.uhchi* (from)+ *chîh* (able to)	*pih+chîh* (able to)	*chipih+chîh* (able to)	*chipih+chîh* (should have)
03;08.10	-	-	-	-	-	-
03;09.23	-	-	-	-	-	-
03;11.11	1	1	1	-	-	-
04;02.16	-	-	-	-	-	-
04;04.04	-	-	-	-	-	-
04;06.02	-	-	-	-	-	-
04;07.28	-	-	-	-	-	-
04;10.03	-	-	-	2	1	-
05;00.20	-	-	-	-	-	-
05;04.12	-	-	-	-	-	1
05;07.03	-	-	-	-	-	-
Total	**1**	**1**	**1**	**2**	**1**	**1**

13 The preverb sequence *ki+châ* is counted in among 2 preverb combinations, but it is actually a false start. She begins the utterance in the independent (niki ...) and then begins again in the conjunct, giving the sequence niki ....châ .... For reasons of feasibility (not to have to change all of my calculations), I have kept this in statistics as a preverb sequence.

There are 18 different combinations in Daisy's corpus that appear only once throughout the sessions. Additionally, there is no evidence of productivity for two types of preverb sequences that appear more than once in Daisy's speech: Daisy produces two tokens of *pih* (should, could, non3)+*chîh* (able to), and all instances of *kiti* (future 3)+*chîh* (able to) occur with the same verb stem. The rest of the combinations demonstrate productivity, appearing on various verb stems.

The most common preverb combination in Daisy's speech is *kâ+pâchi* (toward), with 29 tokens in eight sessions. I provide one instance of this combination in (42).

(42) *Nîyi kiyâh kâ pâchi nitiwâpimit niwîchâwâkin.*

nîyi	kiyâh	kâ	pâchi	nitiwâpim-it	ni-wîchâwâkin
1	and	LIC.PVB	PVB.toward	go.see(TA)-CIN.S:3.SG/O:1.SG	1-friend

'My friend came to see me too.'

(Daisy, 03;11.11)

The sequence *âh+chîh* (past) is the second most frequent type in her corpus, produced in 22 utterances in seven sessions productively. It is mostly employed in subordinate clauses with the past meaning, as in (43).

(43) *Wîyi mâk âh chîh nihchinâkunîsut, nimâ?*

wîyi	mâk	âh	chîh	nihchinâkunîsu-t	nimâ
PRON.3	and	LIC.PVB.NT	PVB.past	dress(AI)-CIN.3.SG	right

'She was the one who dressed herself, right? (Daisy, 04;10.03)

Daisy is also found combining three preverbs in her speech, though it's quite limited: only one type, *ki* (future non3)+*chîh* (able to)+*pâchi* (toward), is present, and she produces only two tokens of this combination, but each is with a different stem. (Note that in (44a) she places the second position clitic *â* (the polar question particle *â*) in the right location, treating the sequence *chiki chîh pâchi îspiyihîn* as the first word in the utterance.) These combinations are given in (44).

(44) 3-preverb strings in Daisy's corpus

a) *Âi, chiki chîh pâchi îspiyihîn â nituhkuyinikimikuhch?*

âi	chi-ki	chîh	pâchi
HES	2-PVB.FUT	PVB.ability	PVB.toward
îspiyih-în		â	nituhkuyinikimiku-hch
drive(TA)-S:2.SG/O:1.SG		p,quest	hospital-LOC

'Hey, will you be able to drive me to the hospital?'

(Daisy, 03;11.11)

b) *Chiki chîh pâchi kustâsinâkuhîn?*

chi-ki	chîh	pâchi	kustâsinâkuh-în
2-PVB.FUT	PVB.ABILITY	PVB.toward	make.look.scary-S:2.SG/O:1.SG

'Can you make me look scary?'

(Daisy, 04;10.03)

3.8 English Roots

Throughout the database, English-origin words are found in Daisy's speech in a variety of different grammatical environments. In most cases, Daisy produces English-origin lexemes as nouns, and less frequently, she uses them as verb-initials with Cree morphology. Additionally,

English bare words and English words with English morphology are also present. Table 38 displays the English-origin verb roots and the number of English-origin verb roots paired with a preverb.

Table 38 The number of English-origin lexical items in Daisy's speech

Age	English verb root (initial)	With preverbs
03;08.10	-	-
03;09.23	9	6
03;11.11	5	-
04;02.16	4	1
04;04.04	1	-
04;06.02	3	1
04;07.28	1	-
04;10.03	18	10
05;00.20	7	2
05;04.12	1	1
05;07.03	5	5
Total	**54**	**26**

Of the 54 English-origin verb roots, 26 of them are preceded by a preverb or preverbs. These 26 tokens are produced with 10 different English words and 10 types of preverbs or preverb combinations. English roots present in her speech are given in Table 39.

Table 39 English-origin roots with preverbs

English-origin roots	Preverb types	Tokens
ghost	*chîh* (past)	1
jump	*âh*	2
school	*chîh* (past)	14
	chiki (future 3)	
	chipih *chîh* (able to)	
	âh	
	châ (conjunct future)	
	wîchi (together)	
	chîshi (completive)	
brush	âh	1
magic	*chîh* (past)	1
grow	âh *chîh* (past)	1
read	*ki* (future non3)	2
	kâ	
colour	*âh*	2
	châ (conjunct future)	
rent	*chîh* (past)	1
rub	*kâ*	1
Total		**26**

Of these roots, "school" is not considered innovative, as it has been used frequently in the community for a while. I provide an example of some of these constructions in (45). Further discussion, where appropriate is provided in Chapter 5.

(45) Example of potentially innovative forms in Daisy's speech

a) *Chîh ghostupiyiu â Name?*

chîh	ghost-u-piyi-u	â	James
PVB.PST	ENG-AI.FIN-INCH(AI)-IIN.3.SG	PQP	name

'Did James turn into a ghost?'

(Daisy, 03;09,23)

b) *Utâh wî uyâ âh jumpuwich awânichî.*

utâh	wî	u-yâ	âh	jump-uwi-ch	awâni-chî
here	EMPH	this-OBV	LIC.PVB.NT	ENG-AI.FIN-CIN.3.PL	INDEF.PRON-AN.PL

'It's here, on this side, where people jump.'

(Daisy, 03;09,23)

At the age of 04;10.03, Daisy produces two English-origin lexical items that were judged to be highly innovative, "brush" and "magic", appearing with the preverbs *âh* and *chîh* (past) respectively.

Chapter 5: Preverbs and Evidence of Productivity

1 Productivity criteria and other considerations of creativity

In this section, I focus on details of the usage of each type of preverb that is present in Daisy's inventory. For each preverb, the productivity criteria adopted in this study, repeated in (46), will be considered.

(46) Productivity criteria

1. The preverb of interest appears in the transcript on at least two different stems, and preferably with two stems of phonologically different types so that two allomorphs of the morpheme are required.
2. Alternatively, the stem appears with a different preverb attached in the same place, elsewhere in the transcript.
3. The given preverb is used with clearly innovative forms.

(based on Allen & Crago, 1989)

The examples showing preverbs satisfying the first two criteria are provided in the appendix. I also consider combining a given preverb with another preverb as a potential indication of productivity. Additionally, producing the changed form of a given preverb may be indicative of the productive use of that preverb. Lastly, using a given preverb in morphologically complex structures (e.g., in verb complexes involving secondary derivation, and passive constructions), may suggest productive use rather than that the child is just reproducing forms by rote. I now turn to the considering the preverbs in Daisy's inventory.

2 The preverbs in Daisy's inventory

2.1 Conjunct preverbs

2.1.1 The preverb *kâ*

As mentioned earlier, conjunct preverb *kâ* is the most common preverb type in Daisy's speech, appearing in 378 utterances, overall. It is present in every recording session and, correctly, appears only with the conjunct order. Table 40 breaks down the usage of the preverb *kâ* across sessions.

Table 40 Production of *kâ*

Age	*kâ*
03;08.10	8
03;09.23	28
03;11.11	63
04;02.16	30
04;04.04	41
04;06.02	18
04;07.28	34
04;10.03	41
05;00.20	28
05;04.12	9
05;07.03	78
Total	**378**

When examining the usage of *kâ* over time, while the lowest number occurs in the first session in the study (03;08.10), the highest number in the last session (05;07.03), numbers fluctuate in the sessions in between so that no meaningful pattern of increase is observed.

As mentioned earlier, the distribution and functions of the conjunct preverb *kâ* is not yet fully described for the adult grammar. For this reason, pending further fieldwork to establish the

various functions of *kâ*, I have counted all instances of *kâ* as a single morpheme. Notwithstanding this fact we can observe that it is used in at least the following environments: in main clauses (in past tense *wh*-questions and focus constructions), in dependent clauses (in complement clauses and adverbial clauses), and in relative clauses (among others, see Brittain (2001) for Western Naskapi). Daisy uses the preverb *kâ* in each of these contexts (Table 41).

Table 41 Details of syntactic contexts in which Daisy uses *kâ*

Age	Rel. Clause	Subordinate	*Wh*-past	Main clause
03;08.10	1	1	3	3
03;09.23	14	-	4	10
03;11.11	8	24	3	28
04;02.16	4	4	16	6
04;04.04	7	4	2	28
04;06.02	6	3	3	6
04;07.28	9	10	4	11
04;10.03	4	9	7	21
05;00.20	8	4	1	15
05;04.12	3	-	5	1
05;07.03	8	11	-	59
Total	**72**	**70**	**48**	**188**

Daisy uses *kâ* mostly in non-*wh* main clauses, with 188 tokens overall (49.73%). It should be noted that while many of these 188 utterances would appear to be focus constructions, future research remains to be done to check this. It has been beyond the scope of this thesis to attempt this. Below in (47), I provide an example of *kâ* used in what we take to be a focus construction. (As previously mentioned, these utterances often begin with the demonstrative *mâu*, or with *mân* or inflected versions of these, as in (47), *mâutih* is locative.)

(47) *Mâutih wîyi kâ apit James tâtâuch, anitâh tâtâuch.*

mâutih	wîyi	kâ	api-t	James	tâtâuch	anitâh tâtâuch
this	PRON.3	LIC.PVB	sit(AI)-CIN.3.SG	name	middle	here middle

'Here is where James sat, he sat in the middle.'

(Daisy, 03;11.11)

In 72 utterances, the conjunct *kâ* occurs in relative clause constructions. As Brittain & Rose (2021) point out, in the absence of a tense preverb, tense may change in translations of the relative clauses as temporal reference is variable depending on context. However, in most cases, these structures are produced in past tense, as exemplified in (48).

(48) *Chîyi kâ ihtutiwit pîpîsh.*

chîyi kâ		ihtutiw-it	pîpîsh
2	LIC.PVB	do(TA)-CIN.S:2.SG/O:3.SG	baby

'You're the one who did that to the baby'

(Daisy, 04;04.04)

The different types of dependent clause have been described for other Cree dialects (e.g., Starks (1995) for Woods Cree), but this work hasn't been done for East Cree. It has not therefore been possible to provide an accurate breakdown of dependent clause type for the child speech, but impressionistically, it seems that most of Daisy's productions of *kâ* in dependent clauses occur in adverbial clauses, headed in translation by "while", as in (49a) and "when", as in ((49b).

(49) *kâ* in a dependent clause

a) *Anitâh bathtubihch kâ ihtât?*

anitâh	bathtub-ihch	kâ	ihtâ-t
there	ENG-LOC	LIC.PVB	be(AI)-CIN.3.SG

'While she was in the bathtub?'

(Daisy, 03;11.11)

b) *Mikw chichîh pâchi nikitihun kâ wîh wîchâwitân.*

mikw	chichîh	pâchi	nikitihu-n
just	2-PVB.PAST	PVB.toward	leave.behind(AI)-IIN.2.SG

kâ	wîh	wîchâw-itân
LIC.PVB	PVB.want	together(TA)-CIN.S:1.SG/O:2.SG

'You just left me behind when I wanted to go with you'

(Daisy, 04;02.16)

Daisy uses *kâ* in 48 past tense *wh*-questions, one of which is given in (50).

(50) *Awân kâ wîchâwik?*

awân kâ	wîchâw-ik
WH LIC.PVB	accompany(TA)-CIN.S:1.SG/O:3.SG

'Who did I go with?'

(Daisy, 04;02.16)

Daisy also combines *kâ* frequently with another preverb: of 378 utterances with *kâ* in her inventory, 55 tokens occur as the first in a sequence of two preverbs The second preverbs in such sequences are of seven different types.

Daisy combines *kâ* with four grammatical preverbs (*chîh* (past), *wîh* (want to), *ati* (inchoative), *uhchi* (past/negation)), one lexical (*ishi* (relative root)) and two directional (*pâchi* (toward), *uhchi* (from)). 29 of the 55 tokens of *kâ* + preverb involve *pâchi* (toward) as the second preverb (i.e., *kâ+pâchi* (toward)). I restrict my comment here to the most noteworthy observations, in this case, combinations of *kâ* with other tense or aspect morphemes. Before discussing these, I will provide examples for each of the other types in Daisy's inventory.

(51) Main clause focus construction *kâ+wîh* (want)
Mâutâh kâ wîh ihtutimuch.

mâutâh	kâ	wîh	ihtutimuch
this	LIC.PVB	PVB.want	do(TI).CIN.1.SG>0

'It's like this that I wanted to do it.'

(Daisy, 03;08.10)

(52) Main clause construction, *kâ+pâchi* (toward), relative clause
Iskwâu an anitih kâ pâchi tikushihk?

iskwâu	an	anitih	kâ	pâchi	tikushihk
woman	that	here	LIC.PVB	PVB.toward	arrive(AI).CIN.3.SG

'That woman that came in here?'

(Daisy, 03;08.10)

(53) Main clause construction, past tense *wh*-question *kâ+ishi* (relative root)
Tânitâh kâ ishi mitwâhtâyân?

tânitâh	kâ	ishi	mitwâhtâyân
WH	LIC.PVB	PVB.RR	call(AI).CIN.1.SG

'Where did I call?'

(Daisy, 03;09,23)

(54) Main clause construction, past tense wh-question *kâ+uhchi* (from)

Tânitih kâ uhchi miyâkiniwit?

tânitih	kâ	uhchi	miy-âkiniwi-t
where	LIC.PVB	PVB.from	give(TA)-PASS-CIN.3.SG

'Where did he get it from?

(Daisy, 4;10.3)

(55) Subordinate clause construction, *kâ+uhchi* (past/negation)

Tânitâh kâ uhchi mininihk îsh.

tânitâh	kâ	uhchi	minin-ihk	îs-h
WH	LIC.PVB	PVB.PAST(NEG)	remove-CIN.S:3.SG>0	ask-IMP.S:2.SG/O:3.SG

'Ask her how she took it off.'

(Daisy, 04;10.03)

The combination of *kâ+chîh* (past) is translated as 'used to' so thus refers to past habitual action. Four of Daisy's six sequences of this preverb combination are of this type. In (56), below, she uses *kâ+chîh* (past) in a past tense *wh*-question.

(56) *Awân kâ chîh iyit anitâh?*

awân	kâ	chîh	iyit	anitâh
WH	LIC.PVB	PVB.PAST	say(AI).CIN.3.SG	that

'Who used to say that?'

(Daisy, 04;02.16)

The remaining two utterances are relative clauses, where the habitual past meaning does not appear (and *kâ* may be used as a relativizer). One such occurrence is provided in (57).

(57) *Âukunich kâ chîh îtwâwâhtihchh.*

âukunich	kâ	chîh	îtwâwâhtihchh
that.one.AN.PL	LIC.PVB	PVB.PAST	make.sound(TI).CIN.s:3.PL/o:0.OBV

'Those are the ones that made sounds like that.'

[Daisy is describing what's happening in a book she is reading]

(Daisy, 05;07.03)

The fifth sequence of *kâ* in her corpus is *kâ+ati* (inchoative), appearing with four tokens. It mostly denotes an aspect of a past verb expressing the beginning of an action, as in (58).

(58) *Chihchiwâ kâ ati chîwât û.*

chihchiwâ	kâ	ati	chîwât	û
truly	LIC.PVB	PVB.begin	return.home(AI).CIN.3.SG	this

'So this one started to go home for real.'

(Daisy, 05;07.03)

Potential innovative forms with *kâ* are also present in Daisy's speech, however, considering how the preverb *kâ* is frequent, these forms are not quite abundant, as only two tokens of English-origin roots are found. These two tokens are given in (59).

(59) *kâ* with verbs built on English roots

a) *... kâ readiwich.*

kâ	read-iw-ich.
LIC.PVB	ENG-AI.FIN-CIN.3.PL

'...that they read...' (Daisy, 05;07.03)

b) *Mîshkuch, û utih, kâ rubwiyihch, âh ihtutimiyihch.*

mîshkuch	û	utih	kâ	rub-iw-iyihch	âh	ihtutimiyihch
as.a.result	this	here	LIC.PVB	ENG-AI.FIN-OBV	LIC.PVB.NT	do(TI).S:OBV/O:0

'So this one right here rubbed it, doing like this.'

(Daisy, 05;07.03)

The last piece of evidence suggesting productive usage of *kâ* comes from the presence of *kâ* in various passive structures. In total, 26 tokens of *kâ* are used in passives by Daisy. We have already seen an example of this, in (54), above, and another example is provided in (60).

(60) *Kâ nipihâkiniwit wîhkuch nûhtâwî.*

kâ	nipih-âkiniwi-t	wîhkuch	nûhtâwî
LIC.PVB	kill(TA)-PASS-CIN.3.SG	pretend	my.father

'Let's pretend that my father was killed.' (Daisy, 03;11.11)

2.1.2 The preverb *âh*

The conjunct preverb *âh* is the third most frequent preverb in her corpus, and it appears in 218 utterances in Daisy's speech, overall. She uses *âh* in every recording session, and in general, it accounts for 13% of her preverb production. Table 42 displays the number of tokens of *âh* for each session.

Table 42 Production of *âh*

Age	*âh*
03;08.10	23
03;09.23	43
03;11.11	28
04;02.16	13
04;04.04	34
04;06.02	12
04;07.28	14
04;10.03	7
05;00.20	27
05;04.12	4
05;07.03	13
Total	**218**

In the same way that I decided to treat *kâ* as a single preverb (until further descriptive work is done to determine its various uses), I treat *âh* as a single preverb even though future work may identify that it has several distinct functions.

Daisy uses this preverb in a variety of subordinate clause types (61a), relative clauses (61b), purpose clauses (61c), and when-clauses (61d).

(61) Constructions with the conjunct neutral preverb *âh*

a) Subordinate clause

Tâpâ kischihuu châkwâyiu âh tikisihk.

tâpâ kischihu-u châkwâ-yiu âh tikis-ihk

NEG know.how(AI)-IIN.3.SG INDEF.PRON-OBV LIC.PVB.NT cook(TI)-CIN.S:3.SG/O:0

'He doesn't know how to cook anything.'

(Daisy, 04;04.04)

b) Relative clause

Awân utih âh âpitisît nâpâu.

awân utih âh âpitisî-t nâpâu

WH here LIC.PVB.NT work(AI)-CIN.3.SG man

'A man that works here.' (Daisy, 03;09.23)

c) Purpose clause

An anitâh âh îspitikiniwich.

an anitâh âh îspit-ikiniwi-ch

that here LIC.PVB.NT pull(TI)-PASS-CIN.0.SG

'It's for pulling, here, like this.'

[Demonstrating how to use a potato peeler] (Daisy, 05;00.20)

d) When-clause

Âh tikushiniyâhch niwâskâpihîkiwiinân.

âh tikushini-yâhch ni-wâskâp-ih-îkiwi-inân

LIC.PVB.NT arrive-CIN.1.PL 1-sit.in.circle(TA)-CAUS-PASS.1/2-IIN.1.PL

'When we arrive, they get us in a circle time.' [We're made to sit in a circle]

(Daisy, 05;00.20)

41 tokens of *âh* appear in combination with six other types of preverbs in Daisy's corpus: three grammatical (*chîh* (past), *wîh* (want), *uhchi* (past/negation)), two lexical (*wîchi* (together), *ishi* (relative root)), and one directional (*pâchi* (toward)) preverbs.

Of these six sequences, three types (*chîh* (past), *wîh* (want to), and *pâchi* (toward)) appear relatively more frequently than the rest of the combinations. As *âh+chîh* (past) is presented earlier, I give one example each for *âh+wîh (want to)* (62), and *âh+pâchi* (toward) (63).

(62) *Nâshch âh wîh tâwich wîchiwâhch.*

nâshch	âh	wîh	tâ-wich	wîch-iwâ-hch
very.much	LIC.PVB.NT	PVB.want	be(AI)-CIN.1.SG.REL	dwelling-2/3.PL-LOC

'I really want to be at their house.'

(Daisy, 04;06.02)

(63) *Mâutâh wâsh mûsh âh pâchi iyishit Lucy.*

mâutâh	wâsh mûsh	âh	pâchi	iyi-shi-t	Lucy
this	EMPH always	LIC.PVB.NT	PVB.toward	say(AI)-DIM-CIN.3.SG	name

'Lucy always speaks to me like this.'

(Daisy, 05;07.03)

The remainders occur only once in Daisy's dataset. The first and only token of *âh+wîchi* (together) is found with the English-origin root "school", at the age of 03;09.23, as shown in (64).

(64) *...Âh wîchi schooluch awâyiuh?*

âh	wîchi	school-u-ch	awâ-yiuh
LIC.PVB.NT	PVB.together	ENG-AI.FIN-CIN.3.PL	INDEF.PRON-OBV

'...the ones that go to school together?'

(Daisy, 03;09,23)

The rest are provided in (65) and (66).

(65) *School bag tihkunimânâ châ ihtâyân misichihtiyânâ âh ishi misichihtit Lucy.*

school.bag	tihkun-imân-â	châ	ihtâ-yân	
ENG	hold(TI)-CIN.1.SG>0-SJ	LIC.PVB.FUT	be(AI)-CIN.1.SG	
misichihti-yân-â	âh	ishi	misichihti-t	Lucy
big(AI)-CIN.1.SG-SJ	LIC.PVB.NT	PVB.RR	big(AI)-CIN.3.SG	name

'When I take my school bag with me to school, when I am as big as Lucy.'

(Daisy, 03;11.11)

(66) *Âkâ âh uhchi ihtâwit.*

âkâ	âh	uhchi	ihtâ-wit
NEG	LIC.PVB.NT	PVB.PAST(NEG)	be(AI)-CIN.2.SG.REL

'When you were not there.'

(Daisy, 04;07.28)

The conjunct preverb *âh* is found in seven potentially innovative forms with five different English-origin roots, shown in (67) below (excluding, as discussed previously, verbs built on "school").

(67) *âh* with English-origin roots

a) *Utâh wî uyâ âh jumpuwich awânichî.*

utâh	wî	u-yâ	âh	jump-uwi-ch	awâni-chî
here	EMPH	this-OBV	LIC.PVB.NT	ENG-AI.FIN-CIN.3.PL	WH-INDEF.PRON.AN.PL

'Here, on this side, is where people jump.'

(Daisy, 03;09,23)

b) *Mâutih âh brushut.*

mâutih	âh	brush-u-t
here	LIC.PVB.NT	ENG-AI.FIN-CIN.3.SG

'She is brushing (her hair) right here.'

(Daisy, 04;10.03)

c) *Flowers, âi, âh chîh growiwiyichh.*

flowers	âi	âh	chîh	grow-iwi-yichh
ENG	HES	LIC.PVB.NT	PVB.PAST	ENG-AI.FIN-CIN.OBV

'That flowers, uh, were growing.'

(Daisy, 05;00.20)

d) *Nichîh kischihun wâsh kiyâh âh colouruwiyân four kâ ihtitupipunwâsyân, nimâ?*

ni-chîh	kischihu-n	wâsh kiyâh âh		colour-uwi-yân
1-PVB.PAST	know.how(AI)-IIN.1.SG	EMPH and	LIC.PVB.FUT	ENG-AI.FIN-CIN.1.SG
four	kâ	ihtitupipunwâs-yân	nimâ	
ENG	LIC.PVB	4.years.old-CIN.1.SG	right	

'I was good at colouring too when I was four years old, right?'

(Daisy, 05;07.03)

Âh is another type of preverb that appears in passive constructions, a further evidence that she is able to use it in a productive manner. The following example in (68) is one of her 11 tokens of *âh* in passive voice.

(68) *Mâutâh kiyâh âh ihtutikiniwich.*

mâutâh	kiyâh	âh	ihtut-ikiniwi-ch
here	and	LIC.PVB.FUT	do-PASS.3-CIN.0.SG

'Here's also how it's done.'

(Daisy, 04;10.03)

2.1.3 The preverb châ

The conjunct *châ* is a future tense marker which also can function as an imperative marker, if the subject is second person. In Daisy's speech, both readings are present and quite frequent, and I show one occurrence of each usage in Daisy's speech below in (69).

(69) Two functions of *châ*

a) *Châ pâhpinâniwiyich.*

châ	pâhpi-nâniwiyich
LIC.PVB.FUT	laugh(AI)-CIN.IMPERS.OBV

'People will laugh.'

(Daisy, 03;11.11)

b) *Châ kiniwâyimit.*

châ	kiniwâyim-it
LIC.PVB.FUT	care.for(TA)-CIN.S:2.SG/O:3.SG

'Look after her.'

(Daisy, 03;11.11)

Daisy produces 157 tokens of *châ*, which constitutes approximately 10% of her preverb production. Daisy uses 109 tokens of *châ* to mark future tense, and in the remaining 48

utterances, it functions in an imperative construction. Regardless of appearing alone or not, it is always correctly paired with a verb inflected in the conjunct order. The details of the production of *châ* in Daisy's speech is tallied in Table 43.

Table 43 Production of *châ*

Age	*châ*		Total
	châ (future)	*châ* (imperative)	
03;08.10	3	-	3
03;09.23	14	-	14
03;11.11	31	10	41
04;02.16	4	-	4
04;04.04	9	8	17
04;06.02	11	4	15
04;07.28	10	21	31
04;10.03	6	3	9
05;00.20	11	1	12
05;04.12	3	-	3
05;07.03	7	1	8
Total	**109**	**48**	**157**

The preverb *châ* is combined with two other types of preverbs in Daisy's corpus: *ati* (inchoative) and *pâchi* (toward). Similar to the other conjunct preverbs, it is always found in the peripheral position in the verb stem when combined. She uses *châ* as imperative in three contexts when combined with directional *pâchi* (toward). In the remainder of combinations, *châ* denotes future tense information.

(70) *châ+ati* (inchoative)

Mâutâh châ ati pimuhtâyihkw.

mâutâh	châ	ati	pimuhtâ-yihkw
this	LIC.PVB.FUT	PVB.begin	walk(AI)-CIN.21.PL

'We will walk over here.'

(Daisy, 03;09.23)

(71) *châ+pâchi* (toward) with two readings of *châ*

a) *Âi, châ pâchi îspiyihîyâhch?*

âi	châ	pâchi	îspiyi-h-îyâhch
HES	LIC.PVB.FUT	PVB.toward	drive-CAUS-CIN.S:2.SG/O:1.PL

'Hey, will you drive us somewhere?'

(Daisy, 03;11.11)

b) *Daycare châ pâchi misinâpiskihuyin.*

daycare	châ	pâchi	misinâpiskihu-yin
eng	LIC.PVB.FUT	PVB.toward	video.record(TA)-CIN.S:2.SG/O:1.SG

'Hey, film me at the daycare.'

(Daisy, 03;11.11)

We find three tokens of *châ* (future) preceding an English-origin roots in her corpus. These three tokens come from two different words, which are "school" and "colour". I provide one occurrence of potential innovative form, excluding 'school', in (72).

(72) *Mâu châ colouruwiyân ashtutin, â?*

mâu	châ	colour-uwi-yân	ashtutin	â
this	LIC.PVB.FUT	ENG-AI.FIN-CIN.1.SG	hat	PQP

'I'll colour this hat, ok?' (Daisy, 05;07.03)

Lastly, Daisy produces five tokens of *châ* (future) in passive structures, one of which is provided in (73). In this example, the adult and Daisy are talking about pulling out a tooth.

(73) *Châ mininikiniwichh.*

châ	minin-ikiniwi-chh
LIC.PVB.FUT	remove.by.hand(TI)-PASS-0.PL

'They will be pulled out.' [talking about teeth, going to the dentist]

(Daisy, 03;08.10)

2.2 Other tense preverbs

2.2.1 The preverb *chîh* (past)

The preverb *chîh* (past) is the second most frequently used preverb in Daisy's speech, produced in 269 utterances throughout the sessions. It is present in every session, and it is always found denoting past tense. This is one of earliest preverbs Ani uses, appearing first at the age of 2;07.06. It is also the third most frequent preverb in the CDS. Table 44 provides the number of tokens of *chîh* (past) for each session.

Table 44 Production of *chîh* (past)

Age	*chîh* (past)
03;08.10	25
03;09.23	17
03;11.11	35
04;02.16	43
04;04.04	16
04;06.02	9
04;07.28	30
04;10.03	31
05;00.20	29
05;04.12	9
05;07.03	25
Total	**269**

Daisy mostly produces *chîh* (past) in isolation, using it singly in 217 utterances. When produced alone, even though it can freely combine with both independent and conjunct, 99.07% of *chîh* (past) is paired with the independent (215/217). In the conjunct, *chîh* (past) must appear in second position. I show one occurrence of *chîh* (past) with the independent verb below in (74). Clearly, she is using this preverb right from the start of the observation period.

(74) *Chîh chishwâwâpiyiu.*

chîh chishwâwâpiyiu

PVB.past make.loud.noise(AI).IIN.3.SG

'She was very loud.'

(Daisy, 03;08.10)

Daisy combines *chîh* (past) with six types of preverbs, five grammatical (*kâ*, *âh*, *wîh* (want), *chipih* (should, could, 3), *uhchi* (neg, past)) and one directional preverb (*pâchi* (toward)). As well

as using *chîh* (past) in combination with *kâ* (as discussed in previous section), she combines it with *âh*, *wîh* (want to), and *pâchi* (toward). Some examples are provided below.

(75) *Wîyi mâk âh chîh nihchinâkunîsut, nimâ?*

wîyi	mâk	âh	chîh	nihchinâkun-îsu-t	nimâ
PRON.3	and	LIC.PVB.NT	PVB.PAST	dress-AI.RFLX-CIN.3.SG	right

'She was the one who dressed herself, right?

(Daisy, 04;10.03)

An additional note regarding the above example, the verb is a reflexive and so an example of secondary derivation. This strengthens the evidence that Daisy is producing the verb complex, which includes two preverbs, by means of productive rules rather than learning complex forms by rote. Similarly, Daisy uses a two preverb sequence in the following two examples, which are inverse TA forms. No research has yet been done on the TA inverse forms in the CCLAS database, but Ani, for example, has no tokens of these constructions.

(76) *Mikw, nichîh wîh wîchihîkw.*

mikw	ni-chîh	wîh	wîchih-îkw
just	1-PVB.PAST	PVB.want	help(TA)-IIN.S:3.SG/O:1.SG

'He just wanted to help me.'

(Daisy, 03;11.11)

(77) *Nikâwî nichîh pâchi wiyiwîhtihîkw.*

nikâwî	ni-chîh	pâchi	wiyiwîhtih-îkw
my.mother	1-PVB.PAST	PVB.toward	take.outside(TA)-IIN.S:3.SG/O:1.SG

'My mother took me out.'

(Daisy, 04;02.16)

The combination *chipih* (should, could, 3)+*chîh* (past) is first produced at the age of 03;11.11. A total four tokens are present in her dataset, all being paired with the independent. Of four tokens produced, two of them function as "could have" and the other two as "should have". I provide an example of each usage in (78).

(78) *chipih* (should, could, 3)+*chîh* (past)

a) *Chipih chîh wîchâwîtin.*

chipih	chîh	wîchâwîtin
PVB.should	PVB.past	together(TA).IIN.S:1.SG/O:2.SG

'I could have gone with you.'

(Daisy, 04;02.16)

b) *Wîyi â chipih chîh pâyikushiu James?*

wîyi	â	chipih	chîh	pâyikushiu	James
3	PQP	PVB.should	PVB.past	be.one(AI).IIN.3.SG	name

'Was James supposed to be alone? (Should he have been alone?)'

(Daisy, 04;10.03)

Lastly, Daisy combines *chîh* (past) with the tense preverb *uhchi* (past/negation) only once at the age of 04;10.03, however, she omits the verb stem while producing this utterance.

Among preverbs used in potentially innovative forms (verbs with English roots), *chîh* (past) is one of two preverbs in which most diversity and frequency is found. Daisy uses *chîh* (past) with five different English-origin roots, which are "ghost", "school", "magic", "grow", and "rent", across seven tokens. As mentioned earlier, the verb built on English "school" is very widely used in the community, and thus I do not include as a possible innovative form, but provide examples of the other roots in (79).

(79) *chîh* (past) with English-origin roots

a) *Chîh ghostupiyiu â James?*

chîh	ghost-upiyi-u	â	James
PVB.PAST	ENG-AI.FIN-IIN.3.SG	PQP	name

'Did James turn into a ghost?'

(Daisy, 03;09,23)

b) *Chîh magiciwipiyiu wâsh.*

chîh	magic-iwipiyi-u	wâsh
PVB.PAST	ENG-AI.FIN-IIN.3.SG	EMPH

'It went (like) magic.'

(Daisy, 04;10.03)

c) *Nichîh rentuwinân.*

ni-chîh rent-uwi-nân

1.PVB.PAST ENG-AI.FIN-IIN.1.PL

'We rented it.'

(Daisy, 05;07.03)

In (80) below, the English-origin verb root appears in a conjunct construction which has two preverbs.

(80) *Flowers, âh chîh growiwiyichh.*

Flowers âh chîh grow-iwi-yichh

ENG LIC.PVB.NT PVB.PAST ENG-AI.FIN-OBV

'That flowers, uh, were growing.'

(Daisy, 05;00.20)

Chîh (past) is also found in passive structures, occurring in 17 utterances in eight different sessions. One occurrence of *chîh* (past) in passive voice is shown in example (81).

(81) *Mikw wâsh pimâyihtim nichîh îtikiwin.*

mikw wâsh pimâyihtim ni-chîh ît-ikiwi-n

just EMPH touch(TA).IIN.3.SG>0 1-PVB.PAST say-PASS-IIN.1.SG

'But I was told that he touched them.'

(Daisy, 05;07.03)

2.2.2 The preverb *ki* (future non3)

Independent non-third future marker *ki* (future non3) is another commonly used preverb in Daisy's speech, forming 12% of her preverb production with 199 tokens, overall. The usage of *ki* (future non3) is given in Table 45.

Table 45 Production of *ki* (future non3)

Age	*ki* (future non3)
03;08.10	4
03;09.23	26
03;11.11	47
04;02.16	23
04;04.04	24
04;06.02	17
04;07.28	20
04;10.03	18
05;00.20	14
05;04.12	4
05;07.03	2
Total	**199**

The preverb *ki* (future non3) occurs in combination with four different types of preverbs across 24 tokens, and the most common type is the sequence *ki+chîh* (able to), appearing in 17 utterances. It appears in eight different sessions, and one token of this combination is provided in (82).

(82) *Tâpâ niki chîh wâshtânân.*

tâpâ	ni-ki	chîh	wâshtân-ân
NEG	1-PVB.FUT	PVB.ABILITY	turn.on.lights(TI)-IIN.S:1.SG/O:0

'I won't be able to put on the lights.'

(Daisy, 03;11.11)

Ki+pâchi (toward) is the other sequence of *ki* that occurs in more than one session in Daisy's speech. She produces it in five utterances in four different session, one of which is given in (83).

(83) *Niki pâchi niskumikw, û â?*

ni-ki	pâchi	niskum-ikw	û	â
1-PVB.FUT	PVB.toward	thank(TA)-IIN.S:3.SG/1.SG	this	PQP

'This one, eh, will thank me?'

(Daisy, 04;04.04)

The remainders are used only once throughout the sessions, and I show the only tokens of each type in (84).

(84) The rest of the sequences of *ki* (future non3)

a) *Niki îshi mitwâhtitâwân mâ wîchiwâhch.*

Ni-ki	îshi	mitwâhtitâ-wâ-n	mâ	wîchiwâ-hch
1-PVB.FUT	PVB.RR	call(AI)-REL-IIN.1.SG	EMPH	their.house-LOC

'I will call (them) at their house.'

(Daisy, 03;09.23)

b) *Nimui â yâyitâ niki wîh minipitân?*

nimui	â	yâyitâ	
NEG	PQP	for.sure	
ni-ki		wîh	minipit-ân
1-PVB.FUT		PVB.want	remove(TI)-IIN.1.SG>0

'Surely I don't have to pull this out?'[14]

(Daisy, 04;02.16)

Of note, Daisy produces only two tokens of 3-preverb sequences, and both utterances consist of the same preverb types, one of which is *ki* (future non3), appearing at the ages of 03;11.11 and 04;10.03.

The first token of *ki* with an English-origin root appears at the age of 05;00.20, with the English word "read". This root is also produced with the conjunct *kâ* at the age of 05;07.03, suggesting a productive usage. I show the only occurrence of an innovative form with *ki* below in (85).

(85) *Niki readuwin kwâshch, â?*

ni-ki	read-uwi-n	kwâshch	â
1-PVB.FUT	ENG-AI.FIN-IIN.1.SG	now	PQP

'I will read for now, okay?'

(Daisy, 05;00.20)

Additionally, eight tokens of *ki* (future non3) appear in passive construction, a further piece of evidence for productivity. In (86), I give her earliest token of *ki* in passive voice.

14 This is the only instance of the preverb *wîh* in which it does not express volition. It may be due to its appearance under the scope of a negation. It remains to be checked by future research.

(86) *Shâsh wîpich niki nâtihukiwin.*

shâsh	wîpich	ni-ki	nâtihu-kiwi-n
already	soon	1-PVB.FUT	fetch(TA)-PASS.1/2-IIN.2.SG

'I will be picked up soon.'

(Daisy, 03;11.11)

2.2.3 The preverb *chiki* (future 3)

The preverb *chiki* (future 3) is the future marker used with third person of the independent verbs. It is present in every session in Daisy's dataset, and in total, it is found in 50 utterances in Daisy's corpus, all being paired with the independent verb. The numbers of tokens of *chiki* (future 3) for each session is given in Table 46.

Table 46 Production of *chiki* (future 3)

Age	*chiki* (future 3)
03;08.10	2
03;09.23	14
03;11.11	6
04;02.16	8
04;04.04	3
04;06.02	5
04;07.28	2
04;10.03	5
05;00.20	2
05;04.12	2
05;07.03	1
Total	**50**

Chiki (future 3) is produced in combination with another preverb in eight utterances across four different preverb types (*pâchi* (toward), *wîh* (want to), *chîh* (able to), *chîshi* (completive)) and all

tokens are attached to the independent verbs. The following two sentences are novel combinations of *chiki* (future 3) that has not been presented yet.

(87) *chiki+chîh* (able to)

Tâpâ chiki chîh ayimuu.

tâpâ	chiki	chîh	ayimu-u
NEG	PVB.FUT	PVB.ABILITY	talk(AI)-IIN.3.SG

'She won't be able to talk.'

(Daisy, 04;02.16)

(88) *chiki+chîshi* (completive)

Shâsh chiki chîshi nûkusiu puppy, nimâ?

shâsh	chiki	chîshi	nûkusi-u	puppy	nimâ
already	PVB.FUT	PVB.CMP	visible(AI)-IIN.3.SG	ENG	right

'The puppy will soon be finished being visible.'[We won't be able to see the puppy anymore soon] (Daisy, 04;06.02)

Chiki does not appear with an English root (excluding "school"), though Daisy uses it in passive contexts: 11 tokens of *chiki*-attached verbs are used in passive voice, one of which is shown in (89).

(89) *Chiki tipihîkiniuu.*

chiki	tipi-h-îkiniu-u
PVB.FUT	measure(TI)-CAUS-PASS.3-IIN.0.SG

'Something will be paid.'

(Daisy, 03;09,23)

2.2.4 The preverb *uhchi* (past/negation)

Daisy produces past negation *uhchi* (past/negation), homophonous with directional *uhchi* (from), a handful of times, in 28 utterances overall. Except for one token at the age of 05;07.03, given in (90), all occurrences of *uhchi* (past/negation) appear with an independent verb. The numbers of tokens of preverb at stake in Daisy's speech is provided in Table 47.

(90) *Mîshkuch âkâ uhchi wâpimâch anitâh kâ îtuhtâch.*

mîshkuch	âkâ	uhchi	wâpim-âch
as.a.result	NEG	PVB.PAST(NEG)	see(TA)-CIN.S:3.PL/O:OBV
anitâh	kâ	îtuhtâ-ch	
there	LIC.PVB	go(AI)-CIN.3.PL	

'When they didn't see it, they went over there instead.'

(Daisy, 05;07.03)

Table 47 Production of *uhchi* (past/negation)

Age	*uhchi* (past/negation)
03;08.10	1
03;09.23	1
03;11.11	5
04;02.16	4
04;04.04	5
04;06.02	1
04;07.28	4
04;10.03	4
05;00.20	1
05;04.12	0
05;07.03	2
Total	**28**

Daisy combines *uhchi* (past/negation) with four different types of preverb (*âh*, *pâchi* (toward), *chîh* (past), *kâ*) using each only once throughout the sessions. As these combinations are examined before, I will not discuss them here.

Daisy produces five tokens of *uhchi* (past/negation) with a passive verb, one of which is provided in (91).

(91) *Tâpâ nuhchi utinimâkiwin.*

tâpâ	n-uhchi	utinim-âkiwi-n
neg	1-PVB.PAST(NEG)	buy(TI)-APPL.PASS.1/2-IIN.1.SG

'It wasn't bought for me.'

(Daisy, 04;04.04)

2.2.5 The preverb *kiti*

Kiti (future 3), the allomorph of *ki~chiki*, is the future marker used with third person of the independent verbs. Three tokens of *kiti* appear in Daisy's corpus, one of which appears alone, while the other utterance does so in combination with *chîh* (able to) which Daisy repeats twice. All utterances of *kiti* is given in (92).

(92) Production of *kiti* (future 3)[15]

a) *Pîswâyâihkunâu an, anitih kiti apiwich?*

pîswâyâihkunâu	an	anitih	kiti	api-wich
bread	that	there	PVB.FUT	sit(AI)-IIN.3.PL

'That bread, will they be placed there?'

(Daisy, 03;09.23)

b) *Nimi kiti chîh wâpihtim.*

nimi	kiti	chîh	wâpihtim
NEG	PVB.FUT	PVB.ABILITY	see(TI).IIN.s:3.SG

'She won't be able to see.'

(Daisy, 04;04.04)

2.3 Modal preverbs

2.3.1 The preverb *wîh* (want to)

The desiderative preverb *wîh* is another preverb type that is present in every session in Daisy's speech. Daisy always produces this preverb in contexts where she communicates her needs to the adult. Unlike the other preverb types that we have seen so far, it is an alternating preverb that has both citation and changed form, and we find both forms in Daisy's speech. Additionally, it can occupy peripheral position in which it may be subject to initial change (in cases where it is paired with the conjunct verb), and non-peripheral position where it must appear in citation form. In general, Daisy produces the preverb *wîh* (want to) in 101 contexts, with 70 tokens appear singly, while 31 tokens in combination with other types of preverbs. Table 48 breaks down Daisy's usage of *wîh* across sessions.

15 As the subject is singular, the verb should be singular, not plural.

Table 48 Production of *wîh* (want to)

Age	*wîh* (want to)
03;08.10	8
03;09.23	5
03;11.11	26
04;02.16	14
04;04.04	8
04;06.02	9
04;07.28	12
04;10.03	5
05;00.20	5
05;04.12	2
05;07.03	7
Total	**101**

Wîh (want to) can combine with both the conjunct and independent verbs. Table 49 shows the usage of *wîh* with each order, and I provide two examples of *wîh* inflected in the conjunct and independent in (93).

Table 49 Tokens of *wîh* (want to) with each paradigm

Age	Conjunct	Independent	Total
03;08.10	-	2	2
03;09.23	4	-	4
03;11.11	5	15	20
04;02.16	-	7	7
04;04.04	1	4	5
04;06.02	1	5	6
04;07.28	1	11	12
04;10.03	-	5	5
05;00.20	1	4	5
05;04.12	-	2	2
05;07.03	-	-	-
Total	**13**	**55**	**68**

(93) The preverb *wîh*

a) Independent verb

Niwîh pûpûshin.

ni-wîh	pûpûshi-n
1-PVB.want	pee(AI)-IIN.1.SG

'I want to pee.'

(Daisy, 03;08.10)

b) Conjunct subjunctive verb[16]

Âi, wîh mitwâhtitâyânâ mîn?

âi	wîh	mitwâhtitâ-yân-â	mîn
HES	PVB.want	ring(AI)-CIN.1.SG-SJ	again

'Eh, whenever I want to call you back again?'

(Daisy, 03;11.11)

Example (93b) is of note because the conjunct subjunctive paradigm is one of the few contexts in the conjunct where initial change does not happen, and Daisy correctly uses *wîh* (want) and not the changed form *wâh*. Only five grammatical preverbs occur in combination with *wîh* (want to) in Daisy's speech: *chîh* (past), *kâ*, *âh*, *ki* (future non3), *chiki* (future 3). In each combination, *wîh* is located in the non-peripheral position. As four combinations were discussed earlier, I provide only occurrence of *wîh+chiki* (future, 3) below in (94).

16 As has been pointed out to me by one of my examiners, there is an issue with the term "Conjunct Indicative Nuetral Subjunctive, as this appears to be a contradiction in terms. However, I have in this thesis followed the nomenclature which appears on the eastcree.org website: CIN-Subjunctive is parading 12a in this system of naming inflection (https://www.eastcree.org/cree/en/grammar/northern-dialect/verbs/cree-verb-inflection/orders/orders-conjunct/orders-12a/).

(94) *Mîn chiki wîh chipiham.*

mîn	chiki	wîh	chipih-am
again	PVB.FUT	PVB.want	close(TI)-IIN.3.SG

'She will want to close it again.'

(Daisy, 04;06.02)

Daisy produces this preverb in its changed form, and with passive forms: Nine tokens of the changed form of *wîh*, which is *wâh*, appear in her corpus, one of which is provided below in (95), and it only occurs with passive voice in one utterance, as in (96).

(95) *Awân mîn wâh minihkwât?*

awân	mîn	wâh	minihkwâ-t
WH	again	PVB.want	drink(AI)-CIN.3.SG

'Who else wants to drink?'

(Daisy, 03;09.23)

(96) *Chîh wîh minishikiniwiyiu uskât.*

chîh	wîh	minish-ikiniwi-yiu	u-skât
PVB.PAST	PVB.want	remove(TI)-PASS.3-IIN.0.OBV.SG	3-leg

'They wanted his leg cut off.'

(Daisy, 03;08.10)

2.3.2 The preverb *chîh* (able to)

Ability *chîh*, homophonous with the tense preverb *chîh*, is found in Daisy's dataset in 38 utterances. Mostly, it appears in combination with another preverb (28 tokens), while it is

produced alone in 10 contexts. When used alone, it is always paired with an independent verb. The production of ability *chîh* in Daisy's speech can be found in Table 50.

Table 50 Production of *chîh* (able to)

Age	*chîh* (able to)
03;08.10	2
03;09.23	3
03;11.11	7
04;02.16	1
04;04.04	5
04;06.02	3
04;07.28	3
04;10.03	10
05;00.20	4
05;04.12	-
05;07.03	-
Total	**38**

Large proportion of the combinations of *chîh* (able to) come from the preverb *ki* (future non3), with 17 tokens overall (60.71%). The other combinations are produced at a low rate throughout the sessions. The combinations of *chîh* (able to) with *ki* (future non3), *pâchi* (toward), and *chiki* (future 3) are already discussed in earlier sections. Below in (97), I provide one instance of the remainder sequences, *chîh* (able to)+*uhchi* (from), *kiti* (future 3)+*chîh* (able to), *pih* (should, could, non3)+*chîh* (able to), and *chipih* (should, could, 3)+*chîh* (able to).

(97) The rest of the combinations of *chîh* (able to)

a) *Tânitâh wîyi wâhchi chîh ihtutihk?*

tânitâh	wîyi	wâhchi	chîh	ihtut-ihk
WH	PRON.3	IC.PVB.from	PVB.ability	do(TI)-CIN.3.SG

'How can she do that?'

(Daisy, 03;11.11)

b) *Nimi kiti chîh wâpihtim.*

nimi	kiti	chîh	wâpiht-im
NEG	PVB.FUT	PVB.ABILITY	see(TI)-IIN.3.SG

'She won't be able to see.'

(Daisy, 04;04.04)

c) *Nitiyâwâwich wâsh crayons, nipih chîh pâshiwâwich.*

nit-iyâw-âwich		wâsh	crayons
1-have(TA)-IIN.3.S:1.SG/O:3.PL		EMPH	ENG
ni-pih	chîh	pâshiwâ-wich	
1-PVB.COULD	PVB.PAST	bring(TA)-IIN.S:1.SG/O:3.PL	

'I have some crayons, I could have brought them.'

(Daisy, 04;10.03)

d) *Wâipishchîsh mikw chipih chîh schooluu James.*

wâipishchîsh	mikw	chipih	
a.little.while	just	PVB.SHOULD	
chîh	school-u-u		James
PVB.ABILITY	ENG-AI.FIN-IIN.3.SG		name

'James could have gone to school for a little while.'

(Daisy, 04;10.03)

Additionally, Daisy uses *chîh* (able to) in passive voice, as shown in (98).

(98) *Nimi chiki chîh wâpimâkiniwiwich awânichî.*

nimi	chiki	chîh	wâpim-âkiniwi-wich	awâni-chî
NEG	PVB.FUT	PVB.ABILITY	see(TA)-PASS.3-IIN.3.PL	INDEF.PRON-AN.PL

'So people won't be able to be seen.'

(Daisy, 04;06.02)

2.3.3 The preverb *chipih* (should, could, 3)

The modal preverb *chipih* (should, could, 3) is another preverb type that is not present in either Ani or the adult's speech. It is found in six utterances in Daisy's corpus, all being combined with another preverb. Four tokens of *chipih* (should, could, 3) appear with past tense *chîh* (past), and one token with ability *chîh* (able to). These combinations are discussed in earlier sections. The last type of combination includes modal *chîh* (should have), produced once at the age of 05;04.12, as shown in (99). All verbs that include combinations of *chipih* (should, could, 3) are inflected in the independent order.

(99) *Chipih chîh mâtiwâu Lucy.*

chipih	chîh	mâtiwâ-u	Lucy
PVB.SHOULD	PVB.PAST	play(AI)-IIN.3,SG	name

'Lucy could have played.'

(Daisy, 05;04.12)

In spite of its appearance in combinations, there is no compelling evidence suggesting a productive usage of *chipih* (should, could, 3) in Daisy's speech. In addition to its infrequent occurrence, the fact that it does not meet the productivity criteria indicates that Daisy may not use the preverb *chipih* (should, could, 3) in a productive manner. She could be using it as a memorized chunk, or, given the nature of naturalistic data, this could just be an accidental gap.

2.3.4 The preverb *pih* (should, could, non3)

The rarest preverb type in Daisy's speech is the modal preverb *pih* (should, could, non3). Daisy produces it in only two utterances, and both tokens appear in combination with another preverb, which is *chîh* (able to). This combination is used as a past modal "could have". The first token of this sequence is used with an independent verb, while the second one lacks a verb stem, as Daisy omits it. All occurrences of *pih* (should, could, non3) are given in (100).

(100) Production of *pih* (should, could, non3)

a) Nitiyâwâwich wâsh crayons, nipih chîh pâshiwâwich.

nit-iyâ-wâwich		wâsh	crayons
1-have(AI)-IIN.3.PL.REL		EMPH	ENG
ni-pih	chîh	pâshiw-âwich	
1-PVB.COULD	PVB.PAST	bring(TA)-IIN.S:1.SG/O:3.PL	

'I have some crayons, I could have brought them.'

(Daisy, 04;10.03)

b) *Nipih chîh....*

ni-pih chîh ...

1-PVB.could PVB.ability

'I could have...'

(Daisy, 04;10.03)

2.3.5 The preverb *chîh* (should have)

Chîh (should have) is another infrequent form found in Daisy's speech that is not present in Ani or the adult's speech, and it is always employed in past modal constructions. Three tokens are found in Daisy's corpus, two of which occurs unaccompanied. These two tokens are paired with both the conjunct (101) and independent (102).

(101) *Mâutâh chîh îtit "nimisinâpiskihwâu James".*

mâutâh chîh ît-it

this PVB.SHOULD.HAVE say.to-CIN.S:2.SG/O:3.SG

ni-misinâpiskihw-âu James

1-videorecord(TA)-IIN.S:1.SG/O:3.SG name

'You should have said "I'm filming James".'

(Daisy, 03;11.11)

(102) *Chîh mâchishimwchihch.*

chîh mâchishim-w-chihch

PVB.SHOULD.HAVE cut(TI)-REL-CIN.S:1.PL/O:3.SG

'We should have cut it (that belongs to somebody else).'

(Daisy, 04;10.03)

One token of *chîh* (should have) is produced in combination of with another preverb, which is modal preverb *chipih* (should, could, 3), at the age of 05;04.12, and it is already presented earlier.

2.4 Aspectual preverbs

2.4.1 The preverb *ati*

Inchoative *ati* is one of two aspectual preverbs that is present in Daisy's corpus. Daisy produces it in a handful of utterances, with nine tokens overall. Four tokens of *ati* (inchoative) are produced singly, three being paired with the conjunct and one with the imperative. I give the only occurrence of *ati* (inchoative) with an imperative verb below in (103).

(103) *Utâh ati îshpiyish mikw.*

utâh	ati	îshpiyi-sh	mikw
this	PVB.begin	move-INCH-DIM	just

'Just move a little bit like this.'

(Daisy, 04;04.04)

The remainders occur with other preverbs. We find four tokens with the preverb *kâ*, and one token with *châ*, which are examined in earlier sections.

Daisy does not use *ati* (inchoative) with innovative forms or in morphologically complex structures. However, three tokens of *ati* (inchoative) appear in changed form, one of which is given in (104).

(104) *Mîshkuch shâsh utâh âti îshinâkuhch.*

mîshkuch	shâsh	utâh	âti	îshi-nâkuh-ch
instead	already	this	IC.PVB.begin	RR-appear(II)-CIN.0.SG

'So now, instead, it looks like this.'

(Daisy, 05;07.03)

Given that it is not found on a variety of verb stems, its limited presence in combinations, and lack of complex forms and structures with it, there is no compelling evidence suggesting a productive usage of *ati* (inchoative) in Daisy's speech.

2.4.2 The preverb *chîshi*

The completive *chîshi* is another aspectual preverb that is present in Daisy's corpus and subject to initial change. It occurs in 15 contexts in Daisy's corpus, and all occurrences are exclusively in citation forms. When combined alone, *chîshi* is mostly paired with an independent verb (11 tokens), while two tokens appear in a conjunct verb. In (105) below, I provide one occurrence of *chîshi* with the conjunct.

(105) *Chîshi pîkupiyiyichâ, â?*

Chîshi	pîkupiyi-yich-â	â
PVB.CMP	break(II)-CIN.0.OBV-SJ	PQP

'After it breaks, ok?'

(Daisy, 04;07.28)

In only two utterances *chîshi* occurs in combination with another preverb, one with *pâchi* (toward) and one with *chiki* (future 3). These sequences are discussed in previous sections.

The preverb *chîshi* (completive) is used in passive construction twice, one of which is given in (106).

(106) *Chîsh ihtutikiniwiyiu.*

chîsh ihtut-ikiniwi-yiu

PVB.CMP do(tI)-PASS.3-IIN.0.OBV.SG

'It is finished.'

(Daisy, 04;07.28)

2.5 Directional preverbs

2.5.1 The preverb *pâchi* (toward)

Another preverb type that is quite frequent and present in all sessions under consideration is the directional preverb *pâchi* (toward). Throughout the sessions, Daisy produces a total of 95 tokens of *pâchi* (toward), accounting for 6% of her preverb production. Table 51 tallies the number of tokens for each session for Daisy.

Table 51 The production of *pâchi* (toward)

Age	*pâchi* (toward)
03;08.10	2
03;09.23	5
03;11.11	41
04;02.16	4
04;04.04	14
04;06.02	4
04;07.28	4
04;10.03	6
05;00.20	8
05;04.12	2
05;07.03	5
Total	**95**

To the best of our knowledge, *pâchi* (toward) and *uhchi* (from) are the only preverbs in NE Cree that can be freely paired with all three orders, and indeed, *pâchi* (toward) appears in Daisy's corpus in combination with all three orders. Of 24 tokens of *pâchi* (toward) produced alone, the majority are combined with the imperative and independent, comprising 41.66% (10/24) and 37.49% (9/24) of the production of *pâchi* (toward) respectively. She produces only five tokens of conjunct verbs with *pâchi* (toward) (20.83%). Table 52 breaks down the usage of *pâchi* (toward) with each order for every session, and I show three tokens of *pâchi* (toward) occurring with three different orders in (107).

Table 52 Tokens of *pâchi* (toward) with each paradigm

Age	Conjunct	Independent	Imperative	Total
03;08.10	-	-	1	1
03;09.23	-	-	2	2
03;11.11	4	4	2	10
04;02.16	-	1	-	1
04;04.04	-	1	1	2
04;06.02	-	1	2	3
04;07.28	-	-	2	2
04;10.03	-	2	-	2
05;00.20	-	-	-	-
05;04.12	-	-	-	-
05;07.03	1	-	-	1
Total	**5**	**9**	**10**	**24**

(107*) pâchi* (toward)

a) Independent verb

Nâshtâpwâh mân nipâchi mâyâyimikw.

nâshtâpwâh	mân ni-pâchi	mâyâyim-ikw
very.much	that 1-PVB.toward	evil(TA)-IIN.S:3.SG/O:1.SG

'She is sometimes rude to me.'

(Daisy, 04;06.02)

b) Conjunct subjunctive verb[17]

Mîn pâchi mitwâhtitâchâ, â?

mîn	pâchi	mitwâhtitâ-châ	â
again	PVB.toward	ring(AI)-CIN.SJ.3.SG	ok

'When she calls back, ok?'

(Daisy, 03;11.11)

17 Daisy, correctly, does not apply initial change here.

c) Imperative verb

Kâ pâchi utitâmûh.

kâ	pâchi	utitâmû-h
IMP.NEG	PVB.toward	hit(AI)-IMP.2.SG

'Don't hit me!'

(Daisy, 04;04.04)

Not surprisingly, given that it can combine with all inflection types, 10 different preverb types are found in combination with *pâchi* (toward), which is the highest number for any type of preverb in Daisy's speech. 69 tokens of *pâchi* (toward) appear with a preverb, and two tokens do so with two preverbs.

Most combinations of *pâchi* (toward) were already discussed in earlier sections. The remaining four types of combinations are given in (108).

(108) Combination of *pâchi* with *chiki* (future 3)[18]

a) *Shâsh chiki pâchi mitwâhtitwâkw.*

shâsh	chiki	pâchi	mitwâhtitw-âkw
already	PVB.FUT	PVB.toward	ring(TA)-IIN.S:3.SG/O:2.SG

'She will call you now.'

(Daisy, 03;11.11)

18 All examples here are in inverse forms.

b) Combination of *pâchi* with *chîshi* (completive)

Chîshi pâchi misinâpiskihuwiyinâ mâ, âi, pâpiyihâchâ uutâpânâskwh âi.

chîshi	pâchi	misinâpiskihuw-iyin-â	mâ
PVB.CMP	PVB.toward	videorecord(TA)-CIN.S:2.SG/O:1.SG-SJ	EMPH

âi	pâpiyi-h-âch-â	u-utâpânâskw-h	âi
HES	drive(TA)-CAUS-CIN.3.SG-SJ	3-vehicle-OBV	HES

'When you're done filming me and when, eh, bring back his vehicle.'

(Daisy, 03;11.11)

c) Combination of *pâchi* with *chîh* (able to)

Lucy mâk wîyi tâpâ ni-chîh pâchi îspiyihikw.

Lucy mâk	wîyi	tâpâ	ni-chîh	pâchi	îspiyih-ikw
name and	PRON.3	NEG	1-PVB.ABILITY	PVB.toward	drive(TA)-IIN.S:3.SG/O:1.SG

'Lucy isn't able to drive me'.

(Daisy, 03;11.11)

d) Combination of *pâchi* with *uhchi* (past/negation)

Nîchinâhch kâ ihtâwich âkâ uhchi pâchi wîchâwit.

nîchinâ-hch	kâ	ihtâ-wich	âkâ
my.house-LOC	LIC.PVB	be(AI)-CIN.1.SG.REL	NEG

uhchi	pâchi	wîchâw-it
PVB.PAST(NEG)	PVB.toward	accompany(TA)-CIN.S:3.SG/O:1.SG

'When I was at home, when she didn't come with me.'

(Daisy, 04;07.28)

Daisy does not use *pâchi* with any English root verbs, however, she produces the changed form of it, as in (109).

(109) *Âukunichî piyâchi mâyâyimich.*

âukuni-chî	piyâchi	mâyâyim-ich
that.one-AN.PL	IC.PVB.toward	disrespect(TA)-CIN.S:3.PL/O:1.SG

'Those are the ones that are disrespectful to me.'

(Daisy, 05;07.03)

Further indication of productivity for *pâchi* is it being used in passive voice. Four tokens of *pâchi* (toward) in passive structures are found in Daisy's speech, one of which is given in (110).

(110) *James, chîyi chipâchi mitwâhtitwâkiwin.*

James	chîyi	chi-pâchi	mitwâhtitw-âkiwi-n
name	2	2-PVB.toward	ring(TA)-PASS.1/2-IIN.2.SG

'James, this call is for you.'

(Daisy, 03;11.11)

2.5.2 The preverb *uhchi* (from)

Directional *uhchi* (from) appears in Daisy's speech with 22 tokens, all occurring in conjunct verbs. Table 53 shows Daisy's usage of preverb *uhchi* across sessions.

Table 53 Production of *uhchi* (from)

Age	*uhchi* (from)
03;08.10	-
03;09.23	-
03;11.11	4
04;02.16	2
04;04.04	1
04;06.02	2
04;07.28	2
04;10.03	4
05;00.20	3
05;04.12	1
05;07.03	3
Total	**22**

Uhchi (from) is only combined with ability *chîh* (able to) at the age of 03;11.11, and with *kâ* at the age of 04;10.03. These combinations are discussed in early sections.

Daisy does not use *uhchi* (from) with English-origin roots or in passive constructions. However, Daisy shows great ability to apply initial change to the preverb *uhchi*. In general, 21 tokens of changed form of *uhchi* (from) are produced in nine different sessions, and it is the most used changed form in her entire corpus. I provide one occurrence of changed form of *uhchi* below in (111).

(111) *Âukw wâhchi mâtut.*

âukw	wâhchi	mâtu-t
that.one	IC.PVB.from	cry(AI)-CIN.3.SG

'That's why she's crying.'

(Daisy, 03;11.11)

She produces only one token of citation form of the preverb *uhchi*, as shown in (112).

(112) *Tânitih kâ uhchi miyâkiniwit.*

tânitih	kâ	uhchi	miy-âkiniwi-t
WH	LIC.PVB	PVB.from	give(TA)-PASS.3-CIN.3.SG

'Where did he get it from?

(Daisy, 04;10.03)

2.6 Lexical preverbs

2.6.1 The preverb *wîchi* (together)

Wîchi (together), whose meaning can roughly be translated into English as "together with", is one of two lexical preverbs that is found in Daisy's speech. Daisy produces a total four tokens of *wîchi* alone and one token with another preverb. In all cases, she attaches the preverb to the same root, which is English "school". All single tokens are produced in the same recording session and in the same contexts. Below in (113), I provide one instance of *wîchi* in Daisy's speech.

(113) *Tâpâ niwîchi schooluimâwich wî nâpâshishich.*

tâpâ	ni-wîchi	school-u-im-âwich	wî	nâpâsh-ish-ich
NEG	1-PVB.together	ENG-AI.FIN-REL-IIN.3.PL	EMPH	boy-DIM.AN.PL

'I don't go to school with any boys.'

(Daisy, 4;10.03)

Before using *wîchi* (together) alone at the age of 04;10.03, Daisy combines it with the conjunct preverb *âh*, at the age of 03;09.23. Again, *wîchi* is followed by the same English root "school", as in (114).

(114) *Âkutâh mikw âh chishich anichî, âh wîchi schooluch awâyiuh?*

âkutâh	mikw	âh	chishich	ani-chî
ok	just	LIC.PVB.NT	how.many.IIN.3.PL	that-AN.PL
âh	wîchi		school-u-ch	awâ-yiuh
LIC.PVB,NT	PVB.together		ENG-AI.FIN-CIN.3.PL	INDEF.PRON-OBV

'Okay, is that how many they are, the one ones that go to school together?'

(Daisy, 03;09,23)

The fact that is only used with the same root and four of the tokens occurred in the same contexts suggests that it is not used productively at this point, rather "*wîchi* school" is possibly a memorized unit which is used by rote. Additionally, the absence of it in changed form "*wiyâchi*" and in morphologically complex structures is consistent with the conclusion above.

2.6.2 The preverb *ishi* (relative root)

The usage of the lexical preverb *ishi* (relative root) is quite limited in Daisy's speech. It only appears in five utterances, and it follows another preverb in each case. Three tokens of *ishi* (relative root) are found with *kâ*, one token with *ki* (future non3) and one token with *âh*. Given this infrequent occurrence of *ishi* (relative root), there is no strong evidence for productive usage of *ishi* (relative root) in Daisy's speech.

Chapter 6: Discussion and concluding remarks

1 Introduction

This chapter summarizes the general findings and examines the research questions outlined in Chapter 1, by comparing Daisy's production with Ani and CDS.

2 Overview

One of the main aims of this thesis was to see whether any kind of evidence of development in any area of Daisy's usage of preverbs is present. As Daisy produces a great number of preverbs with great variety from the earliest session, and all supposedly more challenging forms that are argued by Brittain & Rose are present from the earliest session, no evidence of development is found in Daisy's speech. In general, Daisy produces 1603 tokens of preverbs in 2494 verbs, while Ani does so with 48 tokens of preverbs in 1225 verb tokens. On average, Daisy makes use of 13.5 different types per session, while this number is 1.09 for Ani. These numbers are not surprising, given that Daisy is older and she is expected to be linguistically more advanced than Ani. From the beginning, Daisy is adept with preverbs, and her use of preverbs seems very much like the adult.

Of 20 preverb types present in Daisy's inventory, 12 of them are absent in Ani's corpus, and six do not appear in the CDS. Of these six preverbs that are not present in the CDS, five types (*chîshi* (completive), *chipih* (should, could, 3), *kiti* (future 3), *chîh* (should have), *pih* (should, could, non3)) are also among the least frequent preverbs that we do not have evidence of productivity for Daisy, which suggests an adult-like behaviour for Daisy.

The conjunct preverb *kâ* is the most frequent preverb in Daisy's inventory (23.58% of her total). This is also the case for Ani and the adult, for whom 14/48 (29.2%) (Brittain & Rose, 2021) and 33/109 (30.27%) of total preverbs in their inventory were *kâ*, respectively. Another similarity is that tense preverbs *chîh* (past), *ki* (future non3), and *châ* (conjunct future) are the most common types in Daisy, Ani, and the adult's speech. On the other hand, the complementizer *âh* is found a good many in Daisy's and CDS, while Ani produces only one token of it, which is due to the difference in children's ability to create complex constructions. For Ani, there is no opportunity to use the preverb *âh*, as she does not produce any kind of subordinate or relative clauses. As Daisy is able to produce more advanced construction types, she is able to use the preverb *âh.*

The only preverb that is quite frequent in Daisy's speech while not in Ani's and CDS is directional *pâchi*, which is present in every session in Daisy's corpus. It appears with 95 tokens overall (5.92%) in Daisy's dataset, while it only occurs once in Ani's and twice in the adult's speech. Additionally, Daisy combines *pâchi* with great number of other preverbs (with 10 different types), however, it is not found in combination with any preverb in CDS, which is possibly an accidental gap based on the small sample of CDS considered in this research.

Looking at the preverb types in grammatical set, a close similarity is found in Daisy and the adult's speech. Both tense and conjunct preverbs make up roughly the same amount of preverb production in their speech, around 48% and 40% respectively. As for Ani, even though conjunct preverbs appear relatively late in her corpus, they are responsible for the biggest proportion (41%), while tense preverbs follow it with 37%.

3 Discussion of research questions

3.1.1 Research question 1

RQ 1: As verbs inflected with the conjunct order appear relatively late in Ani's speech (Terry, 2010), Brittain & Rose (2021) argue the conjunct may pose a greater learning challenge to the child than the independent, leading to the question: In Daisy's productions of verbs with preverbs, is there evidence of an early preference for the independent over the conjunct? I examine, for constructions with preverbs, the relative proportions of all three inflection types (independent, conjunct and imperative) in Daisy's speech over time.

In general, Ani produces preverbs more with the independent (27/48) than conjunct (20/48) and imperative (1/48), and her early production of preverbs is, except for one token with imperative, paired with independent forms (Brittain & Rose, 2021). Crucially, while the independent is present from the beginning, the conjunct appears seven months later than independent, at the age of 2;11.16. Therefore, the first research question is to see if Daisy's inventory would show a pattern like Ani's. However, even though both paradigms are quite abundant, Daisy pairs preverbs with the conjunct (901/1579) more than she does so with independent verbs (662/1579), and in eight session, the conjunct is used more than the independent. Preverbs with imperative are quite infrequent in both children's speech. Similar pattern is also found in CDS, in which the adult uses preverbs with conjunct verbs (65/102) more than independent verbs (34/102). Table 54 summarizes the inflectional orders found in Daisy, Ani, and the adult's speech.

Table 54 Use of preverbs with each of the inflectional orders

	Daisy	Ani	Adult
Conjunct	901	20	65
Independent	662	27	34
Imperative	16	1	3
Total	**1579**	**48**	**102**

As discussed in Chapter 4, for single preverb constructions, three preverbs, *âh*, *kâ*, and *châ*, form the majority of Daisy's preverb-conjunct productions (646/694, 93.08%), while eight other preverb types with the conjunct constitute only 6.91% (111/222) of the forms. In the independent forms, however, more diversity is found: 94.02% of her (single) preverb production with the independent come from five types of preverbs (*chîh* (past), *ki* (future non3), *chiki* (future 3), *wîh* (want to) *uhchi* (past/negation), while six types make up 5.97% of her total production of preverbs with the independent. Daisy, like the adult, makes liberal use of conjunct verbs: conjunct verbs comprise 41.98% of her total verb production is conjunct (1047/2494). She thus creates for herself the opportunity to use conjunct preverbs, while it is not the case that all conjunct verbs have a conjunct preverb, impressionistically, a large proportion of them do.

3.1.2 Research question 2

RQ 2: Ani's inventory doesn't include any changed form preverbs, leading to the question: Does Daisy apply initial change to preverbs?

Brittain & Rose suggest that the absence of phonologically unstable preverbs in Ani's inventory may be explained in terms of complexity and that the phonologically stable forms may present the learner with a lesser challenge. The second research question, therefore, is concerned with the

changed forms in Daisy's inventory. Overall, as we saw in Table 30, Daisy produces 34 tokens of changed forms with four preverb types (*wîh* (want to), *uhchi* (from), *ati* (inchoative), *pâchi* (toward)). Among them, *uhchi* (from) is the most frequent form in Daisy's speech (21/34) and is the only changed form in the CDS, with four tokens.

As mentioned previously, conjunct and tense preverbs seem to be the most frequent preverb types in NE Cree, though it remains to be established by future research what the distribution is in the adult language. Crucially, these frequent preverbs are not subject to synchronic process of initial change, therefore, it is not surprising that a few changed forms appear in Daisy's speech. When the verb stems are examined, 237 tokens of changed forms have been found in Daisy's corpus. Therefore, it is clear that she knows how to apply initial change, but given that synchronic changed preverbs are not common, she only produces handful of them.

3.1.3 Research question 3

RQ 3: All but one of the preverbs in Ani's inventory are of the grammatical type, leading to the question: Does Daisy use grammatical, directional and lexical preverbs?

The vast majority of Daisy's preverbs are of the grammatical type, making up 92.07% (1476/1603) of her preverb production. Directional and lexical preverbs, on the other hand, constitute only 7.29% (117/1603) and 0,62% (10/1603) of Daisy's inventory. These findings for Daisy are consistent with findings for Ani, for whom 47/48 of preverbs in her inventory were of the grammatical type. Brittain & Rose (2021) speculate that the reason for Ani's early use of grammatical over lexical preverbs could be that they are phonologically and positionally stable,

and thus easier for the child to learn. They did not, however, examine any of the CDS to see details of the adult's proportions of grammatical preverbs relative to lexical and direction. Ani's and Daisy's use of mostly grammatical preverbs may reflect the distribution of these types of preverb in the language in general. This is what is suggested by my examination of one session of the CDS (section 2.2 in Chapter 4). Quite similar to Daisy, the majority of preverbs are of the grammatical set (92.66%), while directional and lexical preverbs, form only 7.34% of the adult's preverb production altogether (8/109). In this case, an important comment on Brittain & Rose (2021)'s conclusions must be made: that the proportions of grammatical preverbs in Ani's inventory may well reflect the general distribution in the language (or, at the very least, the distribution of preverbs in the CDS); it is important to bear in mind, as mentioned previously, that no study has been made of Cree adult-to-adult interactions to see how, if at all, it may differ in nature from Cree CDS. Strictly speaking, until we know the details of preverb distribution in adult-to-adult speech and can compare it to the distribution in the CDS, we don't know if the two are the same, or if the CDS captured in CCLAS is accommodating to the children, differing from the general distribution. Bearing this in mind, if we take the CDS to be reflective of the language in general, here again, Daisy's developmental path is parallel to the probable distribution of preverbs in similar genres (casual conversation) in the language.

3.1.4 Research question 4

RQ 4: Although more than one preverb can appear in a given verb complex, Ani never uses more than one preverb per verb complex, leading to the question:. What are the details of preverb combination in Daisy's speech?

Given that Ani's corpus exclusively consists of preverb-verb template, arguably the simplest construction type, combining preverbs is another potential challenge proposed by Brittain & Rose. Although Daisy's corpus clearly starts after the onset of her ability to use preverbs, we would expect to see some evidence of her being able to use this area of the grammar in increasingly more sophisticated ways over time. However, here again, there is no pattern suggesting any kind of development: unlike Ani, Daisy quite frequently uses constructions accommodating multiple preverbs: 37 different combinations of two preverbs are found in 176 preverb tokens in Daisy's speech, though 20 types of 2-preverb sequences only appear in one or two contexts. The most diversity is found at the age of 03;11.11 (15 different types of combination) and the least is at the age of 05;04.12 (three different types). On average, Daisy makes use of approximately 16 tokens of preverb combination across 8 different types per session. As listed in Table 15 in section 2.5 in chapter 4, preverb combination is also present in the adult input: seven tokens appear with six different types of combination. Therefore, in terms of preverb combination, Daisy and Ani behave quite differently, and again, Daisy's use of preverbs is very much adult-like in this area of the grammar, as multiple preverbs are quite common in NE Cree (Brittain & Rose, 2021).

3.1.5 Research question 5

RQ 5: Ani always pairs a given preverb with just one inflectional order, even if there is a choice; for example, although wîh 'want' can be used with independent or conjunct verbs, Ani only uses it with independent verbs. My final question arising from Brittain & Rose is thus: Does Daisy pair a given preverb type with more than one inflectional order in cases where this is possible, and if so, what are the details?

Given that Ani never combines a given preverb with more than one inflectional type, even in cases where such combinations are possible, pairing preverbs with more than one inflection is considered as another potential challenge for children by Brittain & Rose. In Daisy's corpus, on the other hand, five preverb types appear with both conjunct and independent verbs, one type appears with the conjunct and imperative, and one type with all three inflectional types, as shown in Table 55.

Table 55 Preverbs occurring with different inflectional types in Daisy's speech

	Conjunct	Independent	Imperative
chîh (past)	2	215	-
chîh (should have)	1	1	-
uhchi (past/negation)	1	24	-
pâchi (toward)	5	9	10
ati (inchoative)	3	-	1
wîh (want to)	13	55	-
chîsh (completive)	2	11	-

Even though Daisy is able to pair preverbs with multiple orders, she does not do this very often. I attribute this to the fact that most frequent preverbs are restricted to occurring with only one inflection type; *kâ*, *âh, and châ* only occur with the conjunct, and *ki* (future non3) and *chiki* (future 3) only occur with the independent. This is also reflected in the CDS, in which only one token appears with two orders: *uhchi* (from) with one token in a conjunct verb, and five tokens in independent verb.

4 Other findings

Irrealis forms, which appear in Daisy's corpus in nine utterances, have been argued to be acquired later in the course of language acquisition (Gaya, 1972; Pérez-Leroux, 1998). In Daisy's speech, a few such forms are observed: she uses the Independent Dubitative Preterit (IDP) in eight utterances and Independent Dubitative Neutral (IDN) paradigms just once. In one of these constructions, she uses a preverb, volition *wîh*, at the age of 03;11.11. Given that it is also one of the earliest and most produced preverbs in Ani's corpus, I speculate that *wîh* is relatively easier to acquire and a good start out with irrealis forms.

There are 26 tokens of English roots in Daisy's corpus, with 10 different English words and 10 types of preverb or preverb combination. Of these, 14 tokens come from the word 'school', which is widely used in the community and regarded as a borrowed lexical item, since it is a lexicalized form present in Cree dictionary. The remaining 12 tokens are possibly innovative. In CDS, two English-origin roots are found: marry and school. The adult uses "marry" with *âh* and *kâ*, and "school" with *kâ+wîchi* (together). Lexical preverb *wîchi* appears only with English word school both in Daisy's and the adult's speech, therefore it is likely that this preverb is a memorized unit for Daisy which is heard in the input. As only one session of the CDS is considered, to what extend the adult produces innovative forms remains to be checked by future research.

5 Future directions

One of the limitations of this study was to not being able to consider larger body of data for the adult input, as it would allow us to have a better insight as to what is used more frequently and understand the behaviour of the language, or preverbs in this case, in general. This would provide valuable information as to what Cree CDS is like in terms of structure and lexical choices. Of course, that would only provide information pertinent to the CDS, rather than the adult language itself. For that reason, looking at the adult-to-adult conversation with regards to preverb frequency and distribution would be a valuable contribution to knowledge. Additionally, comparing it to the CDS would let us see the details of the CDS, Lastly, this study would benefit from further investigation into the contexts where *âh*, and *kâ*, which seem to be the most common types of preverbs, are required, as full description of that area of the grammar in the adult language is not yet understood.

Finally, there are some construction types where we have seen Daisy using preverbs, which are in themselves interesting: we saw that she used preverbs in a number of inverse TA forms. It would advance our field of study to know more generally what her pattern of inverse form use, with and without preverbs, is. I also showed that Daisy uses initial change on preverbs, and on verb stems. It would be an addition to the field of knowledge to know the details of all of these construction types in order to understand the process by which children start using initial change.

6 Conclusion

In summary, Daisy is quite adept with preverbs, using them greatly in a good number of contexts from the earliest session. Given the level of analysis presented here, and the volume of data

reviewed, no clear pattern of development over time is evident in Daisy's speech like we have in Ani's speech; the forms that were proposed to be potentially more complex by Brittain & Rose (appearing late in Ani's inventory) are used by Daisy from the beginning. In general, Daisy's production is more like what is found in the single session of the CDS I examined: preverbs are used more with the conjunct, which follows from the frequency of the conjunct preverbs; changed forms (excluding lexicalized conjunct preverbs) are relatively infrequent; and grammatical preverbs make up majority of preverb production for Daisy, the adult, as well as Ani. Additionally, given that preverb combination is common in NE Cree, her ability to combine preverbs with such a great diversity is, again, reflective of the language. Lastly, given that most of the frequent preverbs can only be paired with one particular order, and that very few preverbs appear in combination with more than one inflectional orders in Ani, Daisy, and the adult's speech, I speculate that appearance of a preverb with multiple inflection types is, indeed, relatively infrequent in the language.

Additional similarity is found in the preverb types that are produced: preverbs *kâ*, *âh*, *chîh* (past), *ki* (future non3), and *châ* (conjunct future) are the most frequent types both in Daisy's and the adult's speech, and five types (*chîshi* (completive), *chipih* (should, could, 3), *kiti* (future 3), *chîh* (should have), *pih* (should, could, non3)) that are not present in the CDS are the least frequent preverbs in Daisy's speech.

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Appendix: Preverbs Meeting Productivity Criteria

1 Conjunct Preverbs

1.1 The preverb *kâ*

Applying the productivity diagnostics yields evidence that Daisy uses *kâ* in a productive manner. The conjunct preverb *kâ* is found appearing on a vast number of verbs, two of which are provided below in (115), satisfying the first criterion.

(115) Two different verbs with *kâ*

a) *Tânitâh kâ îtuhtât.*

tânitâh	kâ	îtuhtâ-t
WH	LIC.PVB	go(AI)-CIN.3.SG

'Where did she go?'

(Daisy, 03;09,23)

b) *Anitâh, âi, kâ pimipiyih.*

anitâh	âi	kâ	pimipiyi-h
there	HES	LIC.PVB	move(AI)-CIN.0.PL

'There, eh, the ones that moved there.'

(Daisy, 03;11.11)

The verbs produced with *kâ* above, *îtuht* 'go' and *pimi* 'move', also appear with other types of preverbs in Daisy's speech. Below I provide one occurrence of each verb with another preverb, *chîh* (past) and *ki* respectively in this case.

(116) *kâ*-attached verbs with different types of preverbs

a) *Wiyâshtâh nichîh îtuhtânân.*

wiyâshtâh	ni-chîh	îtuhtâ-nân
somewhere.around	1-PVB.PAST	go(AI)-IIN.1.PL

'We went somewhere.'

(Daisy, 03;09,23)

b) *Niki pimipiyihtân mâk uhî?*

ni-ki	pimipiyihtâ-n	mâk	uhî
1-PVB.FUT	drive(TA)-IIN.1.SG	and	these

'I will drive these, ok?'

(Daisy, 04;10.03)

1.2 The preverb *âh*

There is compelling evidence that Daisy understands the mechanics of *âh* quite well. In the utterances in (117) and (118), the roots *âpiti* 'work' and *wâmishtikushîuyim* 'speak.English' are produced with *âh* and other types of preverbs, providing an evidence in favour of the productive usage of *âh* in Daisy's speech.

(117) *âh* with two different roots

a) *Awân utih âh âpitisît nâpâu.*

awân	utih	âh	âpitisî-t	nâpâu
INDEF.PRON	this	LIC.PVB,NT	work(AI)-CIN.3.SG	man

'A man that works here.'

(Daisy, 03;09,23)

b) *Âh wâmishtikushîuyiminâniwich wâsh?*

âh	wâmishtikushîuyimi-nâniwich	wâsh
LIC.PVB.NT	speak.English(AI)-CIN.IMPERS	EMPH

'How do we say it in English?'

(Daisy, 05;00.20)

(118) *âh*-attached verbs with different types of preverb

a) *Wîhkuch kâ âpitisiyân, â?*

wîhkuch	kâ	âpitisi-yân	â
pretend	LIC.PVB	work(AI)-CIN.1.SG	PQP

'Let's pretend I am working, ok?'

(Daisy, 03;11.11)

b) *Akâwî pâkimuh chîh wâmishtikushîuyimuu.*

akâwî	pâkimu-h	chîh	wâmishtikushîuyimu-u
IMP.NEG	vomit(AI)-IMP.2.SG	PVB.PAST	speak.English(AI)-IIN.3.SG

'"Don't throw up," she was speaking English.' [reporting what a flight attendant said to her on the plane]

(Daisy, 04;04.04)

1.3 The preverb c*hâ* (future)

The utterances in (119) and (120) show that c*hâ* (future) appears on verb stems which also occurs with other types of preverbs in Daisy's corpus, providing an evidence in favour of productive usage of *châ* in Daisy's speech.

(119) *châ* with two different types of roots

a) *Kâpit! Mâuyâyiu utih châ miyik.*

kâpit	mâu-yâyiu	utih	châ	miy-ik
wait	this-INAN.OBV	this	LIC.PVB.FUT	give(TA)-CIN.S:1.SG/O:3.SG

'Wait! I will give this one to her.'

(Daisy, 04;07.28)

b) *Châ wâpihtimin kiyipwâ James.*

châ	wâpiht-imin	kiyipwâ	James
LIC.PVB.FUT	see(TI)-CIN.2.SG>0	of.course	name

'James, you're going to see it.'

(Daisy, 04;07.28)

(120) *châ*-attached verbs with different types of preverbs

a) *Niki miyikw â mishtîh sîutîsh?*

ni-ki	miy-ikw	â	mishtîh	sîutîs-h
1-PVB.FUT	give(TA)-IIN.3.SG/O:1.SG	PQP	many	candy-INAN.PL

'Is he going to give me a lot of candies?'

(Daisy, 04;02.16)

b) *Nichîh wâpimâu wâsh.*

ni-chîh	wâpimâ-u	wâsh
1-PVB.PAST	see(TA)-IIN.S:1.SG/O:3.SG	EMPH

'I saw it.'

(Daisy, 03;08.10)

2 Other tense preverbs

2.1 The preverb *chîh* (past)

As anticipated, Daisy's usage of *chîh* (past) meets each criterion of productivity, occurring on a various verb stems. Below in (121), two tokens of *chîh* (past) with different verbs are given.

(121) *chîh* (past) with two different roots

a) C*hîh chihchipiyiu.*

chîh	chihchpiyi-u
PVB.PAST	leave(AI)-IIN.3.SG

'He left.' (Daisy, 04;02.16)

b) *Chîh apishîshishiu.*

chîh	apishîshishi-u
PVB.PAST	little(AI)-IIN.3.SG

'She was so small.'

(Daisy, 04;02.16)

In (122), we find the roots *chihchi* 'leave' and *apishîsh* 'little' being preceded by a different type of preverb, *kâ* and *âh* respectively, meeting the second criterion.

(122) *chîh* (past)-attached roots with different types of preverbs

a) *Tânitâh kâ chihchipiyiyihchh?*

tânitâh	kâ	chihchipiyi-yihchh
WH	LIC.PVB	leave-CIN.OBV

'Where did she go?'

(Daisy, 04;02.16)

b) *Nâshch âh apishîshishit.*

nâshch âh apishîshi-shi-t

very.much LIC.PVB,NT little(AI)-DIM-CIN.3.SG

'He is so small.'

(Daisy, 04;04.04)

2.2 The preverb *ki* (future non3)

There is evidence suggesting that the preverb *ki* (future non3) is not treated as an unanalyzed chunk: *ki* appears on a large variety of verb stems in Daisy's corpus, and for the sake of the diagnostics, two of which are given in (123).

(123) *ki* with two different roots

a) *Âkush û niki âpichihâu.*

âkush û ni-ki âpich-ih-âu

all.right this 1-PVB.FUT use(TA)-CAUS-IIN.S:1.SG/O:3.SG

'I will use that one, then.'

(Daisy, 03;11.11)

b) *Tâpâ niki minihkwân coffee misichistiyânâ.*

tâpâ ni-ki minihkwâ-n coffee misichisti-yân-â

NEG 1-PVB.FUT drink(AI)-1.SG ENG big(AI)-CIN.1.SG-SJ

'I will not drink coffee when I get older.'

(Daisy, 04;02.16)

The verbs *âpich* ‘use’, and *minihkw* ‘drink’ are also found attached with different types of preverbs in her corpus, with châ (124a) and *âh* (124b) respectively in this case, meeting the second criterion.

(124) *ki*-attached verbs with different types of preverbs

a) *Mâu châ âpichihtâyân.*

mâu	châ	âpich-ihtâ-yân
this	LIC.PVB.FUT	use(AI)-CAUS-CIN.1.SG

‘I will use this one.’

(Daisy, 04;04.04)

b) *Âh minihkwâniwich kiyâh.*

âh	minihkwâ-niwich	kiyâh
LIC.PVB,NT	drink(AI)-CIN.IMPERS	and

‘That can be drank too.’

(Daisy, 03;09,23)

2.3 The preverb *chiki* (future 3)

Several pieces of evidence suggest that Daisy uses the preverb *chiki* (future 3) in a productive manner. First evidence comes from the satisfaction of the productivity criteria adopted in this study. Variety of verbs are present with *chiki* (future 3) in Daisy’s speech, two of which are given in (125).

(125) *chiki* (future 3) with two different verbs

a) *Shâsh shâsh wîpich chiki pâpiyiu.*

shâsh	shâsh	wîpich	chiki	pâpiyi-u
already	already	soon	PVB.FUT	drive(AI)-IIN.3.SG

'He will arrive here soon, very soon.'

(Daisy, 03;09.23)

b) *Pwâchikî chiki pîkupitim.*

pwâchikî	chiki	pîkupit-im
bogeyman	PVB.FUT	break(TI)-IIN.3.SG

'The bogeyman will really break it.'

(Daisy, 04;02.16)

These two verbs also appear with other types of preverbs, as shown in (126), satisfying the second criterion of productivity.

(126) *chiki* (future 3)-attached verbs with different types of preverbs

a) *...ubusimh âh pâpiyiyihchh.*

u-bus-im-h	âh	pâpiyi-yihch-h
3-ENG-POSS-AN.OBV	LIC.PVB,NT	arrive-(AI)-CIN.OBV-AN.OBV

'... when her bus arrives.'

(Daisy, 04;06.02)

b) *Âi... kâ pîkupiyiyich.*

âi kâ pîkupiyi-yich

HES LIC.PVB break-CIN.0.OBV.SG

'Eh,... the one that is broken.'

(Daisy, 04;06.02)

2.4 The preverb *uhchi* (past/negation)

Daisy's usage of *uhchi* (past/negation) suggests that it is not a rote learned form, rather she uses it productively from the beginning. Appearing on a variety of verbs stems, two of which are shown in (127), which also occur with other types of preverbs (128) supports the conclusion above.

(127) *uhchi* (past/negation) with two different roots

a) *Tâpâ nuhchi miyikiwin.*

tâpâ n-uhchi miy-ikiwi-n

neg 1-PVB.PAST(NEG) give(TA)-PASS.1/2-IIN.1.SG

'It wasn't given to me.'

(Daisy, 03;11.11)

b) *Tâpâ kuhchi utinimawitin châkwân.*

tâpâ k-uhchi utinimaw-itin châkwân

NEG 2-PVB.PAST(NEG) buy(TI)IIN.S:1.SG/O:2.SG INDEF.PRON

'I didn't buy you anything.'

(Daisy, 03;11.11)

(128) *uhchi* (past/negation)-attached verbs with different types of preverb

a) *Mâuyâ châ miyik, â?*

mâu-yâ	châ	miy-ik	â
this-INAN.OBV	LIC.PVB.FUT	give(TA)-CIN.S:1.SG/O:3.SG	PQP

'I will give this to her, ok?'

(Daisy, 04;02.16)

b) *Mîn â kutikh niwîh utinimâkw.*

mîn	â	kutik-h	ni-wîh	utinim-âkw
again	PQP	other-INAN.PL	1-PVB.want	buy(TA)-IIN.S:3.SG

'She wants to buy me other ones'

(Daisy, 04;07.28)

3 Modal preverbs

3.1 The preverb *wîh* (want to)

Application of the diagnostics also shows her ability to use the preverb *wîh* (want to) in a productive manner. In examples (129), *wîh* (want to) appears with two different types of verbs, and in (130), these verbs are preceded by different types of preverbs.

(129) *wîh* (want to) with two different roots

a) *Niwîh utinichân âi mikw wisht â.*

ni-wîh	utinichâ-n	âi	mikw	wisht
1-PVB.want	buy(AI).IIN.1.SG	HES	just	on.purpose

'I want to buy something, Let's just pretend.'

(Daisy, 03;11.11)

b) *Âi pitimâ chiwîh ayimihîkw Lucy.*

âi	pitimâ	chi-wîh	ayim-ih-îkw	Lucy
HES	now	2-PVB.want	talk(TA)-CAUS-IIN.S:3.SG/O:2.SG	name

'Hey, Lucy would like to talk to you first.'

(Daisy, 03;11.11)

(130) *wîh* (want to)-attached verbs with different types of preverbs

a) *Mîchimyiu chiki utinichâu awân.*

mîchim-yiu	chiki	utinichâ-u	awân
food-OBV	PVB.FUT	buy(AI)-IIN.3.SG	INDEF.PRON

'Somebody will buy some food.'

(Daisy, 03;09.23)

b) *Awân kâ ayimit?*

awân kâ		ayimi-t
WH	LIC.PVB	talk(AI)-CIN.3.SG

'Who's talking?'

(Daisy, 03;11.11)

3.2 The preverb *chîh* (able to)

Applying the diagnostics reveals that Daisy is able to use the preverb *chîh* (able to) in a productive manner. In (131), I show two tokens of *chîh* (able to) with two different verbs, and in (132), these two different verbs are also found with other types of preverbs.

(131) *chîh* (able to) with two different roots

a) *Mikw nitiwî châkwân nichîh ushihtân.*

mikw	nitiwî	châkwân	ni-chîh	ushi-htâ-n
just	anywhere	INDEF.PRON	1-PVB.ABILITY	make(AI)-CAUS-IIN.1.SG

'I am just making anything.'

(Daisy, 03;11.11)

b) *Tâpâ chîh ihtiu.*

tâpâ	chîh	ihti-u
NEG	PVB.ABILITY	do(AI)-IIN.3.SG

'She can't do it.'

(Daisy, 03;11.11)

(132) *chîh* (able to)-attached verbs with different types of preverbs

a) *Nîhî, châkwân châ ushihtâyân chititâyihtân?*

nîhî	châkwân	châ	ushi-htâ-yân
yes	what	LIC.PVB.FUT	make(AI)-CAUS-CIN.1.SG
	chit-itâyiht-ân		
	2-think(TI)-IIN.2.SG>0		

'Ok, what do you think I will make?'

(Daisy, 04;04.04)

b) *Chiwâpimâu â awân utâh kâ ihtik?*

chi-wâpim-âu		â	awân	utâh
2-see(TA)-IIN.S:2.SG/O:3.SG		PQP	INDEF.PRON	this
kâ	iht-ik			
LIC,PVB	do(AI)-CIN.3.SG			

'Did you see someone who went like this?'

(Daisy, 03;11.11)

3.3 The preverb *chîshi* (completive)

Daisy uses *chîshi* (completive) on several verb stems, and I provide two instances of them below in (133).

(133) *chîshi* (completive) with two different roots

a) *Shâsh chichîshi mîchisunâniu misiwâ.*

shâsh	chi-chîshi	mîchisu-nâniu	misiwâ
already	2-PVB.CMP	eat(AI)-IIN.21.PL	all

'We all have finished eating.'

(Daisy, 05;04.12)

b) *Shâsh nichîsh ihtutân.*

shâsh	ni-chîsh	ihtutâ-n
already	1-PVB.CMP	do(TI)-IIN.1.SG

'I am done.'

(Daisy, 03;09.23)

In (134), these two verbs are found with other types of preverbs, with *âh* and *chîh* (past) respectively.

(134) *chîshi* (completive)-attached verbs with different types of preverbs

a) *Mâutâh âhtik âh mîchit James wîyi.*

mâutâh	âhti-k	âh	mîchi-t	James	wîyi
this	be(AI)-CIN.3.SG	LIC.PVB.NT	eat(AI)-CIN.3.SG	name	PRON.3

'This is how James eats it.'

(Daisy, 03;08.10)

b) *Utâh nichîh ihtutâsun.*

utâh	ni-chîh	ihtutâ-su-n
this	1-PVB.PAST	do(TA)-RFLX-IIN.1.SG

'I did it like this to myself.'

(Daisy, 03;08.10)

3.4 The preverb *ati* (inchoative)

Even though very few verb stems appear with inchoative *ati*, it satisfies the first and second criterion, as shown in (135) and (136).

(135) *ati* (inchoative) with two different roots

a) *Mîn utih âti îtuhtâch nâtâh mishtikuhch.*

mîn	utih	âti	îtuhtâ-ch	nâtâh	mishtiku-hch
again	this	PVB.begin	go(AI)-CIN.3.PL	that	tree-LOC

'Then here they go to the bush (trees).'

(Daisy, 05;00.20)

b) *Mîshkuch shâsh utâh âti îshinâkuhch.*

mîshkuch	shâsh	utâh	âti	îshinâkuh-ch
instead	already	this	PVB.begin	look.like(II)-CIN.0.SG

'So now, instead, it looks like this.'

(Daisy, 05;07.03)

(136) *ati*-attached verbs with different types of preverbs

a) *Anitâh kâ îtuhtâyâhch mîn.*

anitâh	kâ	îtuhtâ-yâhch	mîn
that	LIC.PVB	go(AI)-CIN.1.PL	again

'Then we went there.'

(Daisy, 03;11.11)

b) *Kuiskw chiki îshinâkuhtâwich awânichî.*

kuiskw	chiki	îshi-nâkuhtâ-wich	awâni-chî
right	PVB.FUT	make.appear-IIN.3.PL	INDEF.PRON-AN.PL

'They will put them away neatly.'

(Daisy, 03;11.11)

4 Directional preverbs

4.1 The preverb *pâchi* (toward)

In the following two examples, *pâchi* (toward) precedes two different lexical stem, *kiniwâp* (look), and *nitiwâp* (go see), meeting the first criterion of productivity.

(137) *pâchi* (toward) with two different roots

a) *Pâchi kiniwâpimh mâ châ wâpihtimin kiyipwâ!*

pâchi	kiniwâpim-h			
PVB.toward	look(TA)-IMP.S:2.SG/O:1.SG			
mâ	châ	wâpiht-imin	kiyipwâ	
EMPH	LIC.PVB.FUT	see(TI)-CIN.2.SG>0	of.course	

'Look at me, look!' (Daisy, 04;07.28)

b) *Pâchi nitiwâpim.*

pâchi	nitiwâpim
PVB.toward	go.see(TA)-IMP.S:2.SG/O:3.SG

'Come and get her.'

(Daisy, 03;09,23)

In examples (138), these two stems are preceded by a different preverb, *ki* (future non3), which satisfies the second criterion.

(138) *pâchi* (toward)-attached verbs with two different types of preverbs

a) *Nitihâ niki kiniwâpihtân mâ camera, â?*

nitihâ	ni-ki	kiniwâpihtâ-n	mâ	camera	â
let.me.see	1-PVB.FUT	look(TI)-IIN.1.SG	EMPH	ENG	PQP

'Let me see, I will go look in the camera, okay?'

(Daisy, 03;11.11)

b) *Âiyiu mîn niki nitiwâpihtimwân.*

âi-yiu	mîn	ni-ki	nitiwâpiht-imw-ân
HES-obv	again	1-PVB.FUT	go.see(TI)-REL-IIN.1.SG

'I'll go and get this (something).'

(Daisy, 03;09.23)

4.2 The preverb *uhchi* (from)

Similar to the other preverbs examined so far, the preverb *uhchi* (from) also satisfies the first and second criterion of productivity, being produced with two separate verb stems that appears with other kinds of preverbs.

(139) *uhchi* (from) with two different roots

a) *Mîn wâhchi nîpuch utih uchî.*

mîn	wâhchi	nîpu-ch	utih	u-chî
again	IC.PVB.from	stand(AI)-CIN.3.PL	this	this-AN.PL

'Then suddenly these came standing here.'

(Daisy, 05;00.20)

b) *Châkwâyiu wâhchi iyit anitâh?*

châkwâ-yiu	wâhchi	iyi-t	anitâh
WH-OBV	IC.PVB.from	say(AI)-CIN.3.SG	that

'Why is she saying that?'

(Daisy, 05;07.03)

(140) *uhchi* (from)-attached verbs with different types of preverbs

a) *Nichîh nîpuwin nâtâh wâsânihtâkinîhch.*

ni-chîh	nîpuwi-n	nâtâh wâsânihtâkin-îhch
1-PVB.PAST	stand(AI)-IIN.1.SG	that window-LOC

'I was standing over there by the window.'

(Daisy, 03;08.10)

b) "*Nipî anitih ihtikun," chiki iyin.*

nipî	anitih	ihtikun	chi-ki	iyi-n
water	that	be(II).IIN.0.SG	2-PVB.FUT	say(AI)-IIN.1.SG

'You say, "There is water there."'

(Daisy, 03;09.23)