

**THE FIRST LANGUAGE ACQUISITION
OF NOMINAL INFLECTION IN NORTHERN EAST CREE:
POSSESSIVES AND NOUNS**

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To Sarah, for everything.

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Abstract

This dissertation describes the first language (L1) acquisition of nominal inflection in Northern East Cree (NEC), a member of the Cree-Innu-Naskapi dialect complex within the Algonquian language family, which is spoken in four Eeyou Istchee communities in Northern Québec. The category of nominals includes nouns, demonstratives, and pronouns, where nouns inflect with templatic morphology involving one prefix and four suffix positions. This study focuses primarily upon nouns within possessive constructions, which entail the richest range of inflectional possibilities and mark multiple inflectional features of both possessees and possessors—including grammatical animacy, obviation, and number. This is the first dedicated study of the L1 acquisition of possessive marking within a polysynthetic language, and this dissertation aims to provide findings to inform linguistic science as well as community-centered efforts in L1 development and language revitalization.

Data come from the corpus of the Chisasibi Child Language Acquisition Study (CCLAS), a collection of naturalistic video recordings. These recordings represent the speech of three children—Ani (age 2;01.12–4;03.07), Daisy (3;08.10–5;10.02), and Billy (4;05.04–5;10.06)—as well as of one adult who interacts with each of the children.

This dissertation revolves around three primary research questions, which center on the characteristics of nominal inflection in child-directed speech; the expression of possession by children before they acquire the adult-like usage of nominal inflection; and the path of emergence for each templatic position and its morphological components over time. In answering these research questions, the chapters largely proceed along the inflectional template for NEC nouns, analyzing child-directed speech and then the speech of each child. After describing the overall landscape of the data, the examination turns to the prefix marking the person of the possessor; the possessive suffix; the suffixes marking a plural or obviative possessor; and the final affixal position, which can carry either a locative suffix or a multiple-exponent suffix marking interacting categories of animacy, obviation, and number.

Findings show that child-directed speech employs all of the affixal positions for nouns and all of their component morphemes, and although not all inflectional categories and values are equally represented, the input provides children with the necessary evidence to identify the presence, function, and distribution of all inflectional morphology. The youngest child begins

expressing possession by omitting noun inflection, and she tends to use demonstratives instead of nouns as possessives. Each of the three children demonstrate different levels of productive usage with various inflectional morphemes, which is at least in some part attributable to differences in age as well as to the inter-child variability common in L1 acquisition. Child production may have some connections to patterns in the input, such as the frequency of word forms and inflectional morphemes, but the children also show a command of NEC inflection with English borrowings, which is a relatively uncommon pattern in the child-directed speech within the CCLAS corpus.

Table of Contents

Acknowledgements.....	iii
Abstract.....	v
Table of Contents.....	vii
List of Tables.....	xviii
List of Figures.....	xxv
Abbreviations.....	xxvi
Chapter 1: Introduction.....	1
1.1. Motivation for this study.....	1
1.2. Dissertation overview.....	2
1.3. The “researcher”.....	3
1.4. Some terminological notes.....	5
Chapter 2: Northern East Cree.....	7
2.1. Example utterances: Orthographical conventions and citations.....	7
2.2. NEC: Speakers and language vitality.....	9
2.3. Grammatical characteristics of NEC.....	12
2.3.1. Polysynthesis in NEC.....	12
2.3.2. Nominals and nominal inflection in NEC.....	15
2.3.2.1. Nouns and inflection.....	16
2.3.2.2. Demonstratives and inflection.....	33
2.3.2.3. Pronouns and inflection.....	38
2.3.3. Summary.....	41
Chapter 3: A brief literature review.....	43
3.1. The L1 acquisition of polysynthesis.....	43
3.2. The L1 acquisition of possessive encoding.....	46

3.3.	Intersection with theory	49
3.4.	Relevance for language communities	50
Chapter 4: Method		52
4.1.	Research questions.....	52
4.2.	Method	52
4.2.1.	A word on “data”	52
4.2.2.	Data sources.....	53
4.2.2.1.	The CCLAS corpus	53
4.2.2.2.	Language consultants	57
4.2.3.	The sample for this dissertation.....	58
4.2.3.1.	The children and their linguistic environment	58
4.2.3.2.	Sessions chosen for analysis	60
4.2.3.3.	Identifying nominals in the CCLAS corpus	63
4.2.3.4.	Including/excluding utterances	65
4.2.3.5.	Defining “type” and “token”	66
4.2.3.6.	Coding nominals	68
4.2.3.7.	Coding: Homophony, syncretism, and variation.....	68
4.2.3.8.	Coding samples	71
4.2.4.	Approaching the RQs	72
4.2.5.	Defining productivity	74
Chapter 5: The landscape of the data		76
5.1.	Overview: Adult input	76
5.1.1.	All nominals in adult input	76
5.1.2.	All nouns in adult input	78
5.1.3.	The animacy of nouns in adult input	81

5.1.4.	All inflected vs. uninflected nouns in adult input.....	81
5.1.5.	All possessive constructions in adult input.....	82
5.1.6.	All possessee nouns involving NEC inflection in adult input.....	84
5.1.7.	Summary.....	87
5.2.	Overview: Ani's production	87
5.2.1.	All nominals in Ani's speech.....	88
5.2.2.	All nouns in Ani's speech.....	89
5.2.3.	The animacy of nouns in Ani's speech.....	93
5.2.4.	All inflected vs. uninflected nouns in Ani's speech	94
5.2.5.	All possessive constructions in Ani's speech	95
5.2.6.	All possessee nouns involving NEC inflection in Ani's speech	98
5.2.7.	Summary.....	100
5.3.	Overview: Daisy's production	100
5.3.1.	All nominals in Daisy's speech	101
5.3.2.	All nouns in Daisy's speech	102
5.3.3.	The animacy of nouns in Daisy's speech	105
5.3.4.	All inflected vs. uninflected nouns in Daisy's speech.....	106
5.3.5.	All possessive constructions in Daisy's speech.....	107
5.3.6.	All possessee nouns involving NEC inflection in Daisy's speech	108
5.3.7.	Summary.....	111
5.4.	Overview: Billy's production	111
5.4.1.	All nominals in Billy's speech.....	112
5.4.2.	All nouns in Billy's speech.....	113
5.4.3.	The animacy of nouns in Billy's speech.....	116
5.4.4.	All inflected vs. uninflected nouns in Billy's speech	116

5.4.5.	All possessive constructions in Billy’s speech	117
5.4.6.	All possessee nouns involving NEC inflection in Billy’s speech	118
5.4.7.	Summary.....	120
5.5.	Conclusion	121
Chapter 6: Person marking for a possessor.....		122
6.1.	Person marking in adult input.....	122
6.1.1.	All person marking	122
6.1.2.	Person marking per noun type	123
6.1.3.	Person marking with inalienable and alienable possession	127
6.1.4.	Possesseees with no person marking in adult input	128
6.1.5.	Summary.....	130
6.2.	Person marking in Ani’s speech	131
6.2.1.	All person marking	131
6.2.2.	Productivity of person marking	132
6.2.2.1.	First-person possessor marking.....	133
6.2.2.2.	Second-person possessor marking	135
6.2.2.3.	Third-person possessor marking	136
6.3.3.	Possible connections to patterns in adult input.....	138
6.3.3.1.	Person marking per noun type.....	138
6.3.3.1.	Person marking with inalienable and alienable possession.....	139
6.2.4.	Possesseees with no person marking.....	140
6.2.4.	Summary.....	141
6.3.	Person marking in Daisy’s speech	141
6.3.1.	All person marking	142
6.3.2.	Productivity of person marking.....	143

6.3.2.1.	First-person possessor marking.....	144
6.3.2.2.	Second-person possessor marking	145
6.3.2.3.	Third-person possessor marking	147
6.3.2.4.	Unspecified/indefinite possessor marking	148
6.3.3.	Possible connections to adult input	149
6.3.3.1.	Person marking per noun type.....	149
6.3.3.2.	Person marking with inalienable and alienable possession.....	151
6.3.4.	Possesseees with no person marking.....	152
6.3.5.	Summary.....	153
6.4.	Person marking in Billy’s speech	154
6.4.1.	All person marking.....	154
6.4.2.	Productivity of person marking	155
6.4.2.1.	First-person possessor marking.....	156
6.4.2.2.	Second-person possessor marking	157
6.4.2.3.	Third-person possessor marking	159
6.4.2.4.	Unspecified/indefinite possessor marking	161
6.4.3.	Possible connections to adult input	161
6.4.3.1.	Person marking per noun type.....	161
6.4.3.2.	Person marking with inalienable and alienable possession.....	163
6.4.4.	Possesseees with no person marking.....	164
6.4.5.	Summary.....	165
6.5.	Conclusions.....	165
Chapter 7: The possessive suffix <i>-im</i>		167
7.1.	The possessive suffix <i>-im</i> in adult input	168
7.1.1.	The overall distribution of <i>-im</i>	168

7.1.1.1.	Distribution across noun tokens	168
7.1.1.2.	Distribution across noun types	170
7.1.2.	Accounting for <i>-im</i> : Memorizing forms or applying principles?	174
7.1.3.	Grammatical animacy and <i>-im</i>	175
7.1.4.	Inalienable possession and <i>-im</i>	176
7.1.5.	Morphophonology and <i>-im</i> : Stem-final consonants	177
7.1.5.1.	Morphophonology before (in)alienability?	178
7.1.6.	Could child-directed speech really evince negative principles?.....	180
7.1.7.	The road so far: Principles extrapolated from input	182
7.1.8.	What about the exceptions?.....	183
7.1.9.	Summary.....	184
7.2.	The possessive suffix <i>-im</i> in Ani's speech.....	184
7.2.1.	All possessive suffix tokens	184
7.2.1.1.	Distribution across noun tokens	185
7.2.1.2.	Distribution across noun types	185
7.2.2.	Productivity of <i>-im</i>	188
7.2.3.	Possible connections to adult input	191
7.2.3.1.	P-Inalienable.....	193
7.2.3.2.	P-Final	193
7.2.3.3.	P-All	193
7.2.3.4.	Exceptions to the principles	194
7.2.4.	Summary.....	195
7.3.	The possessive suffix <i>-im</i> in Daisy's speech.....	195
7.3.1.	All possessive suffix tokens	196
7.3.1.1.	Distribution across noun tokens	196

7.3.1.2.	Distribution across noun types	196
7.3.2.	Productivity of <i>-im</i>	198
7.3.2.1.	Errors with <i>-im</i>	201
7.3.3.	Possible connections to adult input	202
7.3.3.1.	P-Inalienable.....	203
7.3.3.2.	P-Final	204
7.3.3.3.	P-All	205
7.3.3.4.	Exceptions to the principles	206
7.3.4.	Summary.....	207
7.4.	The possessive suffix <i>-im</i> in Billy's speech	207
7.4.1.	All possessive suffix tokens	207
7.4.1.1.	Distribution across noun tokens	207
7.4.1.2.	Distribution across noun types	208
7.4.2.	Productivity of <i>-im</i>	210
7.4.2.1.	Errors with <i>-im</i>	212
7.4.3.	Possible connections to adult input	213
7.4.3.1.	P-Inalienable.....	213
7.4.3.2.	P-Final	214
7.4.3.3.	P-All	215
7.4.3.4.	Exceptions to the principles	216
7.4.4.	Summary.....	217
7.5.	Conclusions.....	217
Chapter 8:	Plural, obviative marking for a possessor	219
8.1.	The PSR suffix in adult input	220
8.1.1.	The distribution of the PSR suffix.....	221

8.1.1.1.	Distribution across noun tokens	221
8.1.1.2.	Distribution across noun types	222
8.1.2.	The 2/3.PL suffix <i>-(i)wâu</i>	223
8.1.3.	The 1PL.INCL suffix <i>-(i)niu</i>	224
8.1.4.	The 1PL.EXCL suffix <i>-(i)nân</i>	225
8.1.5.	The OBV suffix <i>-(i)yiú</i>	226
8.1.6.	Summary.....	227
8.2.	The PSR suffix in Ani’s speech	228
8.3.	The PSR suffix in Daisy’s speech.....	230
8.3.1.	The distribution of the PSR suffix.....	230
8.3.1.1.	Distribution across noun tokens	230
8.3.1.2.	Distribution across noun types	231
8.3.2	Productivity of the PSR suffix.....	232
8.3.2.1.	The 2/3.PL suffix <i>-(i)wâu</i>	233
8.3.2.2.	The 1PL.INCL suffix <i>-(i)niu</i>	234
8.3.2.3.	The 1PL.EXCL suffix <i>-(i)nân</i>	235
8.3.2.4.	The OBV suffix <i>-(i)yiú</i>	236
8.3.2.5.	Marking an obviative and plural possessor	237
8.3.4.	Possible connections to adult input	238
8.3.5.	Summary.....	239
8.4.	The PSR suffix in Billy’s speech	240
8.4.1.	The distribution of the PSR suffix.....	240
8.4.1.1.	Distribution across noun tokens	240
8.4.1.2.	Distribution across noun types	241
8.4.2	Productivity of the PSR suffix.....	242

8.4.2.1.	The 2/3.PL suffix -(i)wâu.....	242
8.4.2.2.	The 1PL.INCL suffix -(i)niu	243
8.4.2.3.	The 1PL.EXCL suffix -(i)nân	243
8.4.2.4.	The OBV suffix -(i)yiũ.....	244
8.4.2.5.	Marking an obviative and plural possessor	245
8.4.3.	Possible connections to adult input	245
8.4.4.	Summary.....	246
8.5.	Conclusions.....	246
Chapter 9: The Final suffix position		247
9.1.	Overview: The Final suffix positon	248
9.1.1.	The Final suffix in adult input	248
9.1.2.	The Final suffix in Ani’s speech.....	249
9.1.3.	The Final suffix in Daisy’s speech	249
9.1.4.	The Final suffix in Billy’s speech.....	250
9.1.5.	Summary.....	251
9.2.	The LOC suffix.....	251
9.2.1	The LOC suffix in adult input	251
9.2.2.	The LOC suffix in Ani’s speech.....	253
9.2.2.1.	LOC suffix per noun type.....	253
9.2.2.2.	Productivity of the LOC suffix.....	254
9.2.2.3.	Possible connections to patterns in adult input	255
9.2.2.4.	Summary	255
9.2.3.	The LOC suffix in Daisy’s speech	255
9.2.3.1.	LOC suffix per noun type.....	255
9.2.3.2.	Productivity of the LOC suffix.....	256

9.2.3.3.	Possible connections to patterns in adult input	258
9.2.3.4.	Summary	258
9.2.4.	The LOC suffix in Billy’s speech.....	259
9.2.4.1.	LOC suffix per noun type.....	259
9.2.4.2.	Productivity of the LOC suffix.....	260
9.2.4.3.	Possible connections to patterns in adult input	261
9.2.4.4.	Summary	262
9.2.5.	Conclusions: LOC suffix.....	262
9.3.	The PL suffix	262
9.3.1.	The PL suffix in adult input.....	263
9.3.1.1.	Summary	265
9.3.2.	The PL suffix in Ani’s speech	266
9.3.2.1.	PL suffix per noun type.....	266
9.3.2.2.	Productivity of the PL suffix.....	266
9.3.2.3.	Possible connections to patterns in adult input	268
9.3.2.4.	Summary	268
9.3.3.	The PL suffix in Daisy’s speech.....	268
9.3.3.1.	PL suffix per noun type.....	268
9.3.3.2.	Productivity of the PL suffix.....	270
9.3.3.3.	Possible connections to patterns in adult input	272
9.3.3.4.	Summary	273
9.3.4.	The PL suffix in Billy’s speech	273
9.3.4.1.	PL suffix per noun type.....	273
9.3.4.2.	Productivity of the PL suffix.....	275
9.3.4.3.	Possible connections to patterns in adult input	276

9.3.4.4.	Summary	277
9.3.5.	Conclusions: The PL suffix	277
9.4.	The OBV suffix.....	277
9.4.1.	Methodological note: Navigating the challenge of obviation	278
9.4.2.	The animate obviative suffix	280
9.4.3.	The inanimate obviative suffix	299
9.4.4.	Conclusions: The OBV suffix	324
9.5.	Conclusions: The Final suffix	325
Chapter 10:	Conclusions	326
10.1.	Answers for RQ1.....	326
10.2.	Answers for RQ2.....	328
10.3.	Answers for RQ3.....	328
10.3.1.	Ani.....	329
10.3.2.	Daisy	330
10.3.3.	Billy.....	330
10.4.	Some implications for L1 acquisition research	331
10.5.	Some implications for Cree language communities.....	333
10.5.1.	Dissemination	334
10.6.	Future directions.....	335
Appendix A	337
Appendix B	351
Appendix C	355
References	358

List of Tables

Table 2.1: Possible speakers of NEC in 2016, per community	11
Table 2.2: Affixal template for NEC nouns	17
Table 2.3: NEC person prefix morphemes	18
Table 2.4: NEC plural possessor suffix morphemes.....	24
Table 2.5: Suffix 4 morphemes marking for number, animacy, and obviation	27
Table 2.6: The NEC demonstrative system	34
Table 2.7: NEC personal (emphatic) pronouns.....	39
Table 2.8: NEC interrogative/indefinite pronouns.....	40
Table 4.1: The sample for Ani	62
Table 4.2: The sample for Daisy.....	62
Table 4.3: The sample for Billy	63
Table 4.4: Age range for each child.....	63
Table 4.5: Samples of coding for utterances in Phon	72
Table 5.1: Adult nominal token production.....	76
Table 5.2: Adult production of nominal categories	77
Table 5.3: Adult noun token production	78
Table 5.4: Adult production of common noun tokens	79
Table 5.5: Adult production of common nouns types.....	79
Table 5.6: The most frequent common noun types in adult production	80
Table 5.7: Adult production of hapax legomena	81
Table 5.8: Adult production of common nouns types, per animacy category	81
Table 5.9: Adult production of inflected vs. uninflected NEC nouns	82
Table 5.10: Adult production of NEC nouns across inflectional contexts	82
Table 5.11: Adult possessive constructions	83
Table 5.12: Adult utterances containing possessive constructions.....	84
Table 5.13: Adult nouns as possesseees with NEC inflection, throughout the dataset	84
Table 5.14: The most frequent nouns as possesseees with NEC inflection, in adult production ...	85
Table 5.15: The most frequent NEC alienable nouns, with tokens as (non-)possesseees	86
Table 5.16: Ani’s nominal token production	88
Table 5.17: Ani’s production of nominal categories	89

Table 5.18: Ani’s noun token production	90
Table 5.19: Ani’s production of common noun tokens	91
Table 5.20: Ani’s production of common nouns types.....	91
Table 5.21: The most frequent common noun types in Ani’s production	93
Table 5.22: Ani’s production of hapax legomena.....	93
Table 5.23: Ani’s production of common nouns types, per animacy category	94
Table 5.24: Ani’s production of inflected vs. uninflected NEC nouns.....	94
Table 5.25: Ani’s production of NEC nouns across inflectional contexts.....	95
Table 5.26: Ani’s POSS constructions per session.....	95
Table 5.27: Ani’s utterances containing possessive constructions	96
Table 5.28: Ani’s nouns as possesseees involving NEC inflection.....	98
Table 5.29: Ani’s nouns as possesseees involving NEC inflection, per session	99
Table 5.30: All nouns as possesseees, in Ani’s production.....	99
Table 5.31: Daisy’s nominal token production.....	101
Table 5.32: Daisy’s production of nominal categories	102
Table 5.33: Daisy’s noun token production.....	102
Table 5.34: Daisy’s production of common noun tokens	103
Table 5.35: Daisy’s production of common nouns types	103
Table 5.36: The most frequent common noun types in Daisy’s production	104
Table 5.37: Daisy’s production of hapax legomena	105
Table 5.38: Daisy’s production of common nouns types, per animacy category	106
Table 5.39: Daisy’s production of inflected vs. uninflected NEC nouns	106
Table 5.40: Daisy’s production of NEC nouns across inflectional contexts	106
Table 5.41: Daisy’s POSS constructions per session.....	107
Table 5.42: Daisy’s utterances containing possessive constructions.....	108
Table 5.43: Daisy’s nouns as possesseees involving NEC inflection	109
Table 5.44: Daisy’s nouns as possesseees involving NEC inflection, per session.....	109
Table 5.45: Most frequent nouns as possesseees w/ NEC inflection, in Daisy’s production.....	110
Table 5.46: Billy’s nominal token production	112
Table 5.47: Billy’s production of nominal categories	113
Table 5.48: Billy’s noun token production	113

Table 5.49: Billy’s production of common noun tokens	114
Table 5.50: Billy’s production of common nouns types.....	114
Table 5.51: The most frequent common noun types in Billy’s production	115
Table 5.52: Billy’s production of hapax legomena.....	115
Table 5.53: Billy’s production of common nouns types, per animacy category	116
Table 5.54: Billy’s production of inflected vs. uninflected NEC nouns.....	116
Table 5.55: Billy’s production of NEC nouns across inflectional contexts.....	117
Table 5.56: Billy’s noun token production	117
Table 5.57: Billy’s utterances containing possessive constructions	118
Table 5.58: Billy’s nouns as possessives involving NEC inflection.....	119
Table 5.59: Billy’s nouns as possessives involving NEC inflection, per session	119
Table 5.60: Most frequent nouns as possessives w/ NEC inflection, in Billy’s production	120
Table 6.1: Adult person prefix token production.....	123
Table 6.2: Adult person prefix token production, per subcorpus	123
Table 6.3: Most frequent NEC noun types w/ a person prefix, in adult production.....	125
Table 6.4: All mixed-language noun types w/ a person prefix, in adult production.....	126
Table 6.5: English noun types occurring w/ and w/o a prefix, in adult production.....	126
Table 6.6: Most frequent NEC alienable noun types, in adult production	127
Table 6.7: NEC alienable types: two tokens w/ and w/o a prefix, in adult production	128
Table 6.8: Ani’s person prefixes w/ NEC possessives, in obligatory contexts.....	131
Table 6.9: Ani’s person prefixes w/ mixed-language possessives, in obligatory contexts	132
Table 6.10: Ani’s person prefixes in obligatory contexts.....	132
Table 6.11: Ani’s person prefixes in obligatory contexts, per recording session.....	133
Table 6.12: Ani’s noun types w/ a person prefix	138
Table 6.13: Daisy’s person prefixes w/ NEC possessives, in obligatory contexts.....	142
Table 6.14: Daisy’s person prefixes w/ mixed-language possessives, in obligatory contexts.....	142
Table 6.15: Daisy’s person prefixes in obligatory contexts.....	143
Table 6.16: Daisy’s person prefixes in obligatory contexts, per recording session.....	144
Table 6.17: Daisy’s most common noun types with a person prefix.....	150
Table 6.18: Daisy’s NEC alienable noun types w/ and w/o a person prefix	152
Table 6.19: Billy’s person prefixes w/ NEC possessives, in obligatory contexts.....	154

Table 6.20: Billy’s person prefixes w/ mixed-language possessives, in obligatory contexts	155
Table 6.21: Billy’s person prefixes in obligatory contexts	155
Table 6.22: Billy’s person prefixes in obligatory contexts, per recording session	156
Table 6.23: Billy’s most common noun types with a person prefix	162
Table 6.24: Billy’s NEC alienable noun types w/ and w/o a person prefix	163
Table 7.1: Distribution of -im across all NEC noun tokens, in adult input	169
Table 7.2: Distribution of -im across all NEC noun tokens in adult input, per subcorpus	170
Table 7.3: Distribution of -im across all NEC noun tokens in adult input, per subcorpus	170
Table 7.4: Distribution of -im w/ the most frequent NEC noun types, in adult production	171
Table 7.5: All mixed-language nouns as possessives w/ NEC inflection, in adult production....	172
Table 7.6: NEC noun types occurring inside and outside of possessive constructions	173
Table 7.7: Distribution of -im w/ NEC noun types in adult input, by animacy	175
Table 7.8: Distribution of -im w/ NEC noun types in adult input, by (in)alienability.....	176
Table 7.9: Stem-final segments for alienable NEC noun types, in adult input.....	178
Table 7.10: Distribution of -im w/ alienable types in adult input, by stem-final segment	178
Table 7.11: Distribution of -im w/ all NEC types in adult input, by stem-final segment.....	179
Table 7.12: Distribution of -im w/ nouns not ending in /m, n, kw/, by (in)alienability	179
Table 7.13: NEC noun types that require -im, in adult input.....	181
Table 7.14: Distribution of -im across all NEC noun tokens, in Ani’s speech.....	185
Table 7.15: Distribution of -im across all mixed-language noun tokens, in Ani’s speech	185
Table 7.16: Distribution of -im across all NEC noun types, in Ani’s speech.....	186
Table 7.17: Distribution of -im across all mixed-language noun types, in Ani’s speech	186
Table 7.18: Distribution of -im w/ all nouns requiring -im, in Ani’s speech	187
Table 7.19: Distribution of -im w/ all nouns disallowing -im, in Ani’s speech	187
Table 7.20: Ani’s possessee tokens and usage of -im, per recording session.....	188
Table 7.21: Distribution of -im w/ all nouns as possessives, in Ani’s speech from 3;06.23	192
Table 7.22: Distribution of -im w/ all NEC noun tokens as possessives, in Daisy’s speech	196
Table 7.23: Distribution of -im w/ all mixed-language noun tokens, in Daisy’s speech.....	196
Table 7.24: Distribution of -im w/ all NEC noun types, in Daisy’s speech	197
Table 7.25: Distribution of -im w/ all mixed-language noun types, in Daisy’s speech.....	197
Table 7.26: Distribution of -im w/ all nouns requiring -im, in Daisy’s speech	197

Table 7.27: Distribution of -im w/ all nouns disallowing -im, in Daisy’s speech	198
Table 7.28: Daisy’s possessee tokens and usage of -im, per recording session	199
Table 7.29: Distribution of -im w/ NEC noun types in Daisy’s speech, by (in)alienability.....	203
Table 7.30: All inalienable NEC noun types, in Daisy’s speech and adult input	204
Table 7.31: Distribution of -im w/ NEC types in Daisy’s speech, by stem-final segment.....	204
Table 7.32: All alienable NEC types as possessees, in Daisy’s speech and adult input.....	205
Table 7.33: Distribution of -im w/ all NEC nouns as possessees, in Billy’s speech	208
Table 7.34: Distribution of -im w/ all mixed-language nouns, in Billy’s speech.....	208
Table 7.35: Distribution of -im w/ all NEC noun types, in Billy’s speech.....	208
Table 7.36: Distribution of -im w/ all mixed-language noun types, in Billy’s speech	209
Table 7.37: Distribution of -im across all nouns requiring -im, in Billy’s speech	209
Table 7.38: Distribution of -im across all nouns disallowing -im, in Billy’s speech	210
Table 7.39: Billy’s possessee tokens and usage of -im, per recording session.....	210
Table 7.40: Distribution of -im w/ NEC types in Billy’s speech, by (in)alienability	214
Table 7.41: All inalienable NEC noun types, in Billy’s speech and adult input	214
Table 7.42: Distribution of -im w/ NEC types in Billy’s speech, by stem-final segment	215
Table 7.43: All alienable NEC noun types, in Billy’s speech and adult input	215
Table 8.1: All NEC noun tokens with the PSR suffix, in adult input	221
Table 8.2: All NEC noun types w/ the PSR suffix, in adult input	223
Table 8.3: All word forms of ìch ‘home’ with the 2/3.PL.PSR morpheme, in adult input.....	224
Table 8.4: All noun tokens w/ the PSR suffix, in Daisy’s speech	231
Table 8.5: All noun types w/ the PSR suffix, in Daisy’s speech input	232
Table 8.6: Daisy’s PSR suffix production in obligatory contexts, per recording session	233
Table 8.7: All word forms of ìch ‘home’, in Daisy’s speech.....	239
Table 8.8: All noun tokens w/ the PSR suffix, in Billy’s speech.....	240
Table 8.9: All noun types w/ the PSR suffix, in Billy’s speech input	241
Table 8.10: Billy’s PSR suffix production in obligatory contexts, per recording session.....	242
Table 8.11: All word forms of ìch ‘home’, in Billy’s speech	246
Table 9.1: All final suffix tokens across all nouns, in adult speech.....	248
Table 9.2: All final suffix tokens across all nouns, in Ani’s speech.....	249
Table 9.3: All final suffix tokens across all nouns, in Daisy’s speech	250

Table 9.4: All final suffix tokens across all nouns, in Billy’s speech.....	250
Table 9.5: Noun types w/ two or more LOC suffix tokens, in adult production	253
Table 9.6: All noun types w/ LOC suffix tokens, in Ani’s speech	254
Table 9.7: All noun types w/ LOC suffix tokens, in Daisy’s speech.....	256
Table 9.8: Daisy’s LOC suffix tokens, per recording session	257
Table 9.9: All noun types w/ LOC suffix tokens, in Billy’s speech	260
Table 9.10: Billy’s LOC suffix tokens, per recording session.....	261
Table 9.11: All PL suffix tokens, in adult speech.....	264
Table 9.12: Noun types w/ three or more PL suffix tokens, in adult production	265
Table 9.13: Noun types w/ two or more PL suffix tokens, in Daisy’s speech.....	269
Table 9.14: Daisy’s PL suffix tokens, per recording session.....	270
Table 9.15: All noun types w/ PL suffix tokens, in Billy’s speech	274
Table 9.16: Billy’s PL suffix tokens, per recording session.....	275
Table 9.17: Noun types w/ two or more 3’ suffix tokens, in adult production.....	281
Table 9.18: Noun types w/ 3’ suffix token in possessor obviation, in adult production	283
Table 9.19: Noun types w/ 3’ suffix tokens in possessor obviation, in Ani’s production	284
Table 9.20: Noun types w/ two or more 3’ suffix tokens, in Daisy’s speech	287
Table 9.21: Noun types w/ one 3’ suffix token, in Daisy’s speech	288
Table 9.22: Noun types w/ 3’ suffix tokens in possessor obviation, in Daisy’s speech	289
Table 9.23: Daisy’s 3’ suffix tokens, per recording session.....	290
Table 9.24: Noun types w/ 3’ suffix tokens, in Billy’s speech.....	295
Table 9.25: Noun types w/ 3’ suffix tokens in possessor obviation, in Billy’s speech	296
Table 9.26: Billy’s 3’ suffix tokens, per recording session	297
Table 9.27: Noun types w/ two or more 0’ tokens, in adult speech.....	301
Table 9.28: Noun types w/ one 0’ token, in adult speech.....	302
Table 9.29: Noun types w/ 0’ tokens in possessor obviation, in adult production	303
Table 9.30: Noun types w/ overt and covert 0’ tokens, in adult speech	304
Table 9.31: Noun types w/ 0’ tokens in possessor obviation, in Ani’s speech.....	305
Table 9.32: Noun types w/ two or more 0’ tokens, in Daisy’s speech	310
Table 9.33: Noun types w/ one 0’ token, in Daisy’s speech.....	311
Table 9.34: Noun types w/ 0’ tokens in possessor obviation, in Daisy’s speech	312

Table 9.35: Daisy’s 0’ tokens, per recording session	313
Table 9.36: Noun types w/ two or more 0’ tokens, in Billy’s speech.....	320
Table 9.37: Noun types w/ 0’ tokens in possessor obviation, in Billy’s speech.....	321
Table 9.38: Billy’s 0’ tokens, per recording session.....	321
Table 4.6: Possible values for Possessive construction type: NEC-only constructions	337
Table 4.7: Possible values for Possessive construction type: ENG-only constructions	337
Table 4.8: Values for Possessive construction type: Mixed-language constructions	338
Table 4.9: Possible values for Nominal category	338
Table 4.10: Variables associated w/ Nominal category 1: NEC common noun.....	339
Table 4.11: Variables associated w/ Nominal category 2: NEC demonstrative	340
Table 4.12: Variables associated w/ Nominal category 3: NEC pronoun	340
Table 4.13: Variables associated w/ Nominal category 4: Proper noun or name	341
Table 4.14: Variables associated w/ Nominal category 5: ENG common noun	341
Table 4.15: Variables associated w/ Nominal category 6: ENG demonstrative.....	341
Table 4.16: Variables associated w/ Nominal category 7: ENG pronoun	342
Table 4.17: Variables associated w/ Nominal category 8: Mixed-language nominal	343
Table 5.61: Adult nominal token production in Ani’s subcorpus.....	344
Table 5.62: Adult nominal token production in Daisy’s subcorpus	344
Table 5.63: Adult nominal token production in Billy’s subcorpus.....	345
Table 5.64: Adult noun token production in Ani’s subcorpus.....	345
Table 5.65: Adult noun token production in Daisy’s subcorpus	346
Table 5.66: Adult noun token production in Billy’s subcorpus.....	346
Table 5.67: Adult POSS constructions in Ani’s subcorpus	347
Table 5.68: Adult POSS constructions in Daisy’s subcorpus.....	348
Table 5.69: Adult POSS constructions in Billy’s subcorpus	348
Table 6.25: All NEC alienable nouns occurring w/ and w/o a prefix, in adult production	349
Table 7.44: NEC nouns as possessees outside of the top 25, in adult production	350

List of Figures

Figure 2.1: The Cree-Innu-Naskapi dialect continuum	10
Figure 2.2: East Cree communities	10
Figure 4.1: A processed child utterance in the CCLAS corpus	55

Abbreviations

Glossing follows Leipzig Glossing Rules (Max Planck, 2015). Exceptions are:

X>Y	X acts upon Y
0	inanimate proximate singular
0'	inanimate obviative singular
0p	inanimate plural
3	animate proximate singular
3p	animate proximate plural
3'	animate obviative
DIM	diminutive
EMPH	emphatic
ENG	English
EXCL	exclusive
F	final verb stem suffix
INCL	inclusive
INTJ	interjection
INV	inverse
NA	animate or animate noun
NI	inanimate or inanimate noun
OBV	obviative
PROX	proximate
PSR	possessor
PXL	proximal
REL	relational
REM	remote
SAP	speech act participant
TA	transitive verb with an animate object
TI	transitive verb with an inanimate object
TH	theme sign

Chapter 1: Introduction

This dissertation describes the first language (L1) acquisition of nominal inflection in Northern East Cree (NEC), with a particular focus on nouns in possessive constructions. Spoken in four Eeyou Istchee communities in Northern Québec, NEC is an Indigenous language of Canada and a member of the Cree-Innu-Naskapi dialect complex within the Algonquian language family.

Using a corpus of naturalistic video data from the Chisasibi Child Language Acquisition Study (CCLAS), this study analyzes patterns in child-directed speech as well as the speech of three different children: Ani (age 2;01.12–4;03.07), Daisy (3;08.10–5;10.02), and Billy (4;05.04–5;10.06). The following sections review the motivation for this study (§1.1.), the outline for this dissertation (§1.2.) and discuss some issues pertaining to positionality (§1.3) and the terminology used throughout this analysis (§1.4).

1.1. Motivation for this study

This study comes at a crucial time, when Indigenous communities throughout Canada and the United States—and many other parts of the world—are rapidly losing speakers of their traditional languages (e.g., Rehg & Campbell, 2018). This loss of language stems from the history of colonization, and this loss also connects directly to important issues extending beyond just language itself. For example, many Indigenous communities in Canada and the U.S. face higher rates of physical and mental health problems—including heart disease, diabetes, obesity, smoking, depression, substance abuse, and suicide—and communities with stronger continuity of traditional language and culture may have lower rates of such issues (e.g., Chandler & Lalonde, 1998, 2008; Coe et al., 2004; Frohlich et al., 2006; Garro, 1995, 1996; Gracey & King, 2009; Hallett et al., 2007; King et al., 2009; Kirmayer et al., 2003; Kirmayer & Valaskakis, 2009; Nez Henderson et al., 2005; Oster et al., 2011, 2014; Taff et al., 2018; Whalen et al., 2016; Young et al., 2000). In this context, language revitalization is about much more than language. It is about restoring traditions and culture, promoting independence and strength, reconnecting generations, fostering self-esteem and healthy identities, and helping young people have the same chances to be successful as those received by their peers in non-Indigenous communities.

Fewer and fewer children still acquire NEC as their mother tongue (see, e.g., Brittain & MacKenzie, 2010), and in the face of language shift and loss, the Grand Council of the Crees of

Eeyou Istchee has called for “efforts to reclaim, revitalize, maintain and strengthen the Cree language” (2019d, p. 5). This includes support for language documentation, language nests and immersion, and other language teaching programs.

Altogether these efforts require more and better resources supporting L1 and second language (L2) acquisition. NEC and many other Indigenous languages in North America are known for having linguistic characteristics differing greatly from those of English, Spanish, Japanese, Mandarin, and other major world languages. These characteristics may present special challenges for both L1 and L2 language acquisition, and yet these processes of acquisition are critically understudied. Recent research, for example, has explored how to create for Ojibwe communities child language assessment methods and tools that are specifically calibrated for the linguistic traits of Ojibwe dialects (Anderson, 2015; Kidd, 2014).

This dissertation aims to fill part of this gap and provide findings that can inform not only linguistic science but also community-grounded efforts to teach NEC to a range of learners, create new generations of speakers, and strengthen the vitality of their traditional tongue well into the future.

1.2. Dissertation overview

After this introductory chapter, this dissertation is structured as follows.

Chapter 2 describes the relevant linguistic characteristics of NEC. This includes a discussion of the orthographical conventions used in this dissertation and of issues pertaining to the vitality of the language. The majority of this chapter consists of a grammatical description, which reviews the polysynthetic characteristics of NEC as well as the system of nouns, demonstratives, and pronouns along with their inflectional characteristics. Most of this discussion centers on inflection in expressions of possession.

Chapter 3 reviews some of the relevant literature, which includes a quick survey of the landscape of existing literature on the L1 acquisition of polysynthetic languages as well as cross-linguistic research on the L1 acquisition of grammatical encoding for possession. This chapter also considers how this dissertation touches upon areas of theoretical interest, with discussion of the relevance of this study for community-focused efforts in child language development and language revitalization.

Chapter 4 begins by presenting the research questions explored in this study. This chapter describes the methodology for this dissertation, which includes in-depth discussion of the sources of data, sampling and data coding procedures, and criteria for determining productivity of inflectional morphology in child speech.

Chapter 5 surveys the basic characteristics of the distribution of nominals—nouns, demonstratives, and pronouns—throughout the data sampled for this dissertation. This includes special focus on the distribution of nouns, with particular attention to inflected forms and forms used as possessives in possessive constructions.

Chapters 6–9 together describe the presence of inflectional elements in child-directed speech as well as their presence (and emergence) in the speech of each of the three children. Each chapter focuses on one inflectional slot within the affixal template for nouns in NEC. Chapters 6–8 discuss inflectional elements that are only used in possessive constructions, and Chapter 9 analyzes morphemes that can be used inside or outside of possessive contexts.

Chapter 6 examines the prefix morphemes that encode the person of a possessor. Chapter 7 analyzes the possessive suffix *-im*, which is required for some NEC noun types and disallowed by all others. Chapter 8 investigates the suffix morphemes that mark an obviative or plural possessor, which includes an inclusive/exclusive distinction for first-person plural forms. Chapter 9 describes the various suffix morphemes that can occur in the final affixal slot within the noun template. This includes the locative suffix as well as multiple suffixes encoding interacting considerations of animacy, number, and obviation.

Chapter 10 concludes this dissertation by answering the three research questions posed in Chapter 4. It also discusses some of the implications of this dissertation for the scientific study of L1 acquisition as well as for community-centered efforts in child language development and language revitalization.

1.3. The “researcher”

Before embarking on the path ahead in this dissertation, I feel it is important to discuss my positionality as “the researcher” (following Leonard, 2007, pp. 6–9). This is intended to provide brief but important context about the perspective behind the present study.

I am a non-Indigenous scholar, who grew up in the 1980s and 1990s in a monolingual English, middle-class environment in Southern Illinois. The many Indigenous peoples and

communities who had called this area home throughout time (see, e.g., Blasingham, 1956a, 1956b) were, in general, not a part of this environment, which is a direct result of the legacy of colonization. As is the case for many people in the United States, growing up I knew very little about Indigenous peoples, cultures, and languages—whether in my home region or the rest of the world. I was always interested in language, although my studies were restricted to languages with high academic and/or global socioeconomic prestige such as Spanish, Latin, and Mandarin. For most of my life, I was unaware of both the linguistic diversity of the world as well as the forces driving the global crisis that threatens to level it.

It was only by coincidence that I encountered an article on worldwide language loss and was introduced to the field of language documentation. Here I realized that I could use my lifelong interest in language for something more meaningful than satisfying my own personal academic curiosity. I began to take courses in Linguistics, and I entered the field as a graduate student at the University of Hawai‘i at Mānoa in order to become part of global efforts to help support communities in their fight to strengthen the vitality of their traditional languages and pass them on to new generations of speakers. I hoped to focus on the Indigenous languages of the United States and Canada, so I could become part of the work closer to home.

Over the course of the next few years, through the Institute on Collaborative Language Research (CoLang) and then the Canadian Indigenous Languages and Literacy Development Institute (CILLDI), I had the great privilege of meeting many Indigenous and non-Indigenous researchers, teachers, and activists dedicating their lives to the work of helping speakers reclaim their languages. Eventually this path led me to CCLAS, where Drs. Julie Brittain, Marguerite MacKenzie, and Yvan Rose—along with longtime language consultants and project contributors Margaret and Darlene Bearskin—brought me into their important work in Chisasibi.

Throughout this journey and into the future, I try to maintain continual recognition and reflection upon the fact that my career centers on engagement with people who have ethnic, cultural, historical, and socioeconomic backgrounds that differ from my own. I am acutely aware of the harm that outside academics and researchers have done to Indigenous communities as well as the fundamentally extractive nature of even my own research. I am grateful to have joined the field of Linguistics when it stands at an important crossroads, where Indigenous scholars and communities across the world—as well as non-Indigenous researchers who share their convictions—increasingly call for more research undertaken with community-engaged,

decolonized, and/or Indigenized models (e.g., Chilisa, 2012; Leonard, 2017, 2018; Smith, 2013; Smith et al., 2019; Wilson, 2008).

The CCLAS project began in 2004 in response to community concerns raised in Chisasibi regarding child language development (Brittain et al., 2007), and this dissertation represents part of the CCLAS effort not only to enhance the scientific understanding of how children acquire NEC but also to inform community language efforts in areas like speech language pathology and language education and revitalization (Henke & Brittain, 2019). In this spirit, this dissertation is undertaken with the official support of the Cree Nation of Chisasibi, as explained in Band Council Resolution No. 2019-109: “Support for Ryan Henke’s Research Project” (see the Appendix). I owe a tremendous debt of gratitude to the Chief and Council of the Cree Nation of Chisasibi, the Cree School Board, and the CCLAS team for supporting this study.

1.4. Some terminological notes

Another aspect of the present study that I feel must be addressed is my usage of traditional, Western academic terminology throughout this dissertation. This includes not just the word “data” (§4.2.1. in Chapter 4) but also terms like “acquire”, “produce”, “accuracy”, “target”, and “error”. I recognize that many Indigenous and non-Indigenous researchers challenge and even reject such terminology due to its colonial implications. To some, talking about a child *producing data* that is *accurate* and *on-target* or marred by an *error* manifests the legacy of researchers treating Indigenous people and their languages as commodities to be disembodied, extracted, examined, judged, and preserved. I acknowledge these critiques, and I use such terminology only because it provides access to a set of useful tools and allows me to ground the present study more clearly in decades of existing knowledge and research.

In a related vein, throughout the dissertation I refer to the language of study as “Northern East Cree” and to the people who speak it as “Cree”, which is the terminology commonly found throughout academic literature. The Grand Council of the Crees, on the other hand, refers to the East Cree language as *iyyiyuu ayimuun* and to the Cree people as the *Eeyou* (2019b). In my experience, people in Chisasibi tend to call both the language and themselves “Cree”, and so I use that terminology as well.

I also use the term “language revitalization”, which is very common in the literature and practice surrounding intentional efforts to create new generations of speakers for Indigenous

languages in North America (e.g., Hermes et al., 2012; Hinton et al., 2018; Hinton & Hale, 2001; Reyhner & Lockard, 2009). However, others prefer terms such as “language reclamation” (e.g., Leonard, 2007, 2012, 2017), which aims to capture the decolonization aspects of such work as well as the fact that such work has cultural and community implications that extend far beyond purely linguistic matters. The *Cree Language Act of Eeyou Istchee* uses both “reclaim” and “revitalize” (2019d).

My intention with all of these terminological decisions is to most clearly connect insight about the acquisition of NEC to existing conversations and what we know about how people learn other languages, so this knowledge can best be implemented to support and create new generations of speakers for NEC and other Indigenous languages in North America.

In the end, all of this is to say that the present study is written by someone who does not speak the Cree language, does not live in a Cree community, and has not lived a Cree experience—but nonetheless hopes this study contributes to supporting “Cree efforts to reclaim, revitalize, maintain and strengthen the Cree language” (Grand Council of the Crees, 2019d).

the item number within the Henke Collection; and 3) a timestamp for the example or relevant discussion within the audio file associated with that item number.

2.2. NEC: Speakers and language vitality

This dissertation analyzes data collected from the community of Chisasibi (formerly known as Fort George), a Cree village in Eeyou Istchee, which comprises eleven communities in Northern Québec (Grand Council of the Crees, 2019c).

One of the Indigenous First Nations tongues of Canada, East Cree is a member of the Algonquian language family and part of the Cree-Innu-Naskapi dialect complex (Figure 2.2), which ranges from the Rocky Mountains of Alberta to the eastern coast of Labrador, Canada (MacKenzie, 1980). East Cree, also known as James Bay Cree, divides into Northern and Southern dialect groupings: The Northern dialect is spoken in four communities near James Bay: Chisasibi, Eastmain, Wemindji, and Whapmagoostui (Junker et al. 2012). NEC is under-documented and under-described, especially when compared to its Cree-Innu-Naskapi co-varieties Innu (e.g., Drapeau 1991; Drapeau 2014) and Plains Cree (e.g., Ahenakew 1987; Wolfart 1973; Wolvengrey 2011).

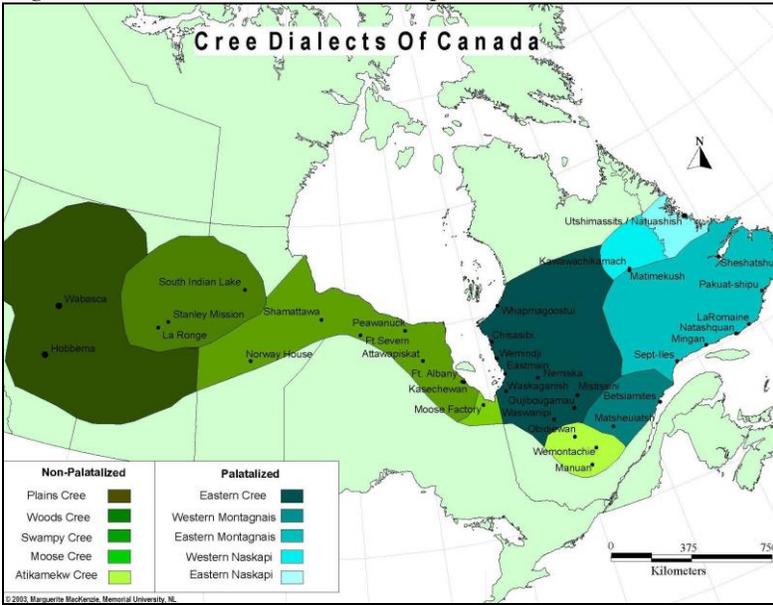
Approximately 18,000 people live in Eeyou Istchee, many of whom speak a variety of East Cree (Grand Council of the Crees, 2019b). Estimates of the number of East Cree speakers vary. Academic sources place the number between approximately 13,000 (Junker, 2003b; Junker & MacKenzie, 2003) and 14,000 (Brittain & MacKenzie, 2010). The Grand Council of the Crees puts the number even higher at “almost 20,000” (2019b). The Grand Council of the Crees reports the population of Chisasibi as “4,400 Cree, 250 Inuit and 300 non-Indigenous” (2019a), while Statistics Canada placed the 2016 population for the village at 2,967 (2016a).

For a detailed breakdown of population information in the four communities where NEC is spoken, Table 2.1 reports 2016 census data from Statistics Canada, which includes: 1) the population for each community; 2) the number of people reporting to speak “Cree” as their mother tongue (no respondent specified a particular Cree dialect or subdialect); and 3) the number of people reporting “knowledge” of Cree, which means either an adult who can conduct a conversation in Cree or a child who is learning the language at home.

Based on these various sources, this dissertation assumes that NEC currently has more than 5,000 native speakers. The actual number may be lower, especially since Eastmain is split

between Northern and Southern dialects. This 2016 census data reports no age information for Cree speakers, but Brittain and MacKenzie observe that “East Cree is spoken by people of all ages, including children” (2010, p. 10).

Figure 2.1: The Cree-Innu-Naskapi dialect continuum



Notes. eastcree.org/img/ECwebmap1.gif

Figure 2.2: East Cree communities



Notes. Junker & MacKenzie (2003)

Table 2.1: Possible speakers of NEC in 2016, per community

Community	Population	Report Cree as a mother tongue	Report knowledge of Cree
Chisasibi	2,967	2,475	2,640
Eastmain	866	745	815
Wemindji	1,444	1,255	1,320
Whapmagoostui	984	870	905
Total	6,261	5,345	5,680

Notes. All numbers from Statistics Canada (2016a, 2016b, 2016c, 2016d).

Such facts and figures indicate that NEC seems to occupy a comfortable position of language vitality in North America. 5,000 constitutes a downright huge number of speakers for a single Indigenous variety north of Mexico (Mithun, 1999), and continuing L1 acquisition places NEC among particularly rare company as well. Nonetheless, the vitality of NEC may have reached a tipping point.

As of January 2020, the Endangered Languages Project (2020) classifies NEC as *threatened/vulnerable*. This designation does not appear to be grounded in primary sources, but corroborating testimony from researchers with years of experience in NEC communities indicates potentially dire prospects for the language’s vitality. For example, Collette (2018) describes “a largely employed variety” called Creenglish, which mixes East Cree and English elements while losing particular aspects of Cree verbal morphosyntax. Furthermore, in a report funded by the Cree School Board of Quebec, Brittain and MacKenzie argue that “East Cree should be counted as an endangered language; at the very least, it should be regarded as a language whose vitality must be carefully monitored” (2010, p. 4). They point to several reasons supporting this diagnosis, such as mounting pressures from English, which includes the increasing presence of English elements within East Cree and younger people using English words even when Cree analogs already exist. Furthermore, Brittain and MacKenzie note that young children demonstrate gaps in Cree lexical knowledge, and elders report younger speakers using incorrect verbal suffixes. The authors conclude that such negative trends can be reversed, if the necessary decisions and resources are implemented in time.

In my experience in Chisasibi, it is common for older people to comment on language loss and observe that fewer and fewer young people are speaking the language. Political, educational, and community leaders throughout Eeyou Istchee have also sounded the alarm, which includes the Cree Nation Government passing the Cree Language Act of Eeyou Istchee (2019d). The Act not only calls attention to the significance of Cree linguistic and cultural heritage but also

supports various measures to strengthen Cree language throughout the region. This includes conducting language vitality assessments, supporting language documentation, and creating languages nest, immersion, and learning programs (2019d, pp. 5–6).

These efforts necessarily entail understanding more about the linguistic characteristics of NEC and what those means for child acquisition as well as language learning. The present study aims not only to inform linguistic science but also the creation of resources to support the vitality of Cree throughout Eeyou Istchee. The next section describes the grammatical characteristics of the language that occupy the central focus of this dissertation.

2.3. Grammatical characteristics of NEC

This section describes the central linguistic concern of this dissertation: The expression of possession in Northern East Cree. It begins with a brief summary of the polysynthetic characteristics of NEC (§2.3.1.) and surveys the landscape of nominals in the language (§2.3.2.). The sections within comprise the bulk of the chapter. Paying special attention to inflection within possessive constructions, these sections address noun inflection (§2.3.2.1.), the demonstrative system (§2.3.2.2.), and pronouns (§2.3.2.3.). §2.3.3 provides a summary.

2.3.1. Polysynthesis in NEC

Algonquian languages such as NEC have canonically been described as **polysynthetic** (e.g., Mithun, 1999; Quinn, 2011). However, the term *polysynthesis* has lately received much overdue scrutiny (Fortescue et al., 2017b; Haspelmath, 2018). One particularly important criticism, for example, is that the designation *polysynthesis* has been applied to a broad selection of languages that cannot be delineated with one clear set of linguistic features that would set them apart from languages traditionally considered *non-polysynthetic* (e.g., Fortescue et al., 2017a; Mattissen, 2017; Nichols, 2017). In other words, not all putative polysynthetic languages pattern together in one coherent and exclusive way.

Therefore, following Fortescue’s (2017) suggestion, this dissertation operates with a particular definition of polysynthesis. NEC is polysynthetic, because the language exhibits a combination of the following characteristics:

The patient argument ‘you (all)’ in (2) is encoded by the following morphemes:

- The prefix *chi-* indicates the second-person feature of the patient;
- The verb stem *wâpim* ‘see’ is reserved for events with an animate object (cf. the verb stem *wâpiht* ‘see’ with an inanimate object);
- The theme suffix *-iti* which, again, marks verbs with only first- and second-person arguments; and
- The plural suffix *-âwâu*.

Like other Algonquian varieties (Brittain, 2001; Drapeau, 2017; Wolfart, 1973), East Cree employs noun incorporation, but to a much less productive extent than the canonical noun incorporation of the Iroquoian family (Baker, 1988, 1996). A nominal element may be inserted into the verb stem, as shown by the bolded elements within (3–6) from Junker et al. (2012).

(3) ᑕᑦᑦᑦᑦᑦᑦ_x

Tâschisiu.

tâschi-si-u

split-F-3SG

‘It splits.’

(4) ᑕᑦᑦᑦᑦᑦᑦᑦᑦᑦᑦ_x

Tâschisikupiyiu.

tâschi-**siku**-piyi-u

split-**ice**-F-3SG

‘**Ice** splits.’

(5) ᑕᑦᑦᑦᑦᑦᑦᑦᑦ_x

Nihtinim.

nîht-**in**-im

lower-**by.hand**-F

‘S/he lowers it **by hand**.’

(§2.3.2.1.2.), the suffix marking an obviative possessor (§2.3.2.1.3.), and morphemes marking plural possessors (§2.3.2.1.4.). The final and most complex slot in the template is introduced in §2.3.2.1.5, followed by special discussion of marking in possessive constructions (§2.3.2.1.6.), and a brief account of locative marking (§2.3.2.1.7.). The NEC demonstrative system is described in §2.3.2.2, with dedicated attention to inflectional behavior in possessive contexts (§2.3.2.2.1.). This grammatical overview ends with brief consideration of pronouns (§2.3.2.3.) and their inflectional properties in expressions of possession (§2.3.2.3.1.).

2.3.2.1. Nouns and inflection

Nouns in Algonquian languages are classified by grammatical gender (**animate** or **inanimate**) (Bloomfield, 1946; Goddard, 2002), a distinction usually but not always grounded in biological animacy. Furthermore, nouns are either alienably possessed (called **independent** nouns in Algonquian parlance) or inalienably possessed (**dependent** nouns). Collette (2014, p. 289) estimates that about 91 percent of approximately 2,500 NEC nouns are independent. The sub-class of dependent nouns generally includes kinship terms, body parts, and close personal belongings. The (in)animate and (in)alienable designations produce a four-way distinction within the class of nouns:

- Animate alienable nouns (usually glossed/abbreviated as **na** in Algonquian literature)
- Animate inalienable nouns (**nad**)
- Inanimate alienable nouns (**ni**)
- Inanimate inalienable nouns (**nid**)

Nouns across these four sub-classes can take affixes that encode a variety of inflectional and derivational categories. Table 2.2 adapts Collette's (2014, p. 327) general affixal template for the NEC noun, which summarizes these categories and affixal positions. Four of these positions are only utilized in possessive contexts: The person prefix, possessive suffix, and suffixes marking obviative and plural possessors can only be used with nouns that are possessees. The final suffix position (Suffix 4) is an inflectional slot available for all nouns. The ensuing discussion will proceed through the template, beginning with the prefix position.

Table 2.2: Affixal template for NEC nouns

	<i>POSS only</i>		<i>POSS only</i>			
Affixal position	Prefix	Stem	Suffix 1	Suffix 2	Suffix 3	Suffix 4
Inflectional category marked	Person (of PSR)	n/a	Possession	Obviation (of PSR)	Number (of PSR)	Animacy, Number, Obviation, Locative

Notes. Adapting Collette (2014, p. 327). POSS = possession. PSR = possessor.

2.3.2.1.1. The prefix: Person marking for a possessor

NEC nouns can inflect with a **prefix**, but only in the context of possession: A possessee takes a prefix indexing the person of the possessor, as in (7–10). Nouns with an unspecified/indefinite possessor (10) take the prefix *mi-*. Dependent nouns, by virtue of being inalienably possessed, generally should take a prefix. However, Collette (2014, p. 258) observes that some speakers are now using the third-person prefix on dependent nouns to express an unspecified possessor.

- (7) σΓᵃ
 nimis
 ni-mis
 1-sister
 ‘my sister’

- (8) ɾΓɿσᵃΔPᵃ
 chimisinhîkin
 chi-misinhîkin
 2-book
 ‘your book’

- (9) ▷ᵃŋᵃᵃ
 ushtikwân
 u-shtikwân
 3-head
 ‘her/his head’

- (10) ᑭᑦᑎᑦᑲᑦ
 mishtikwân
 mi-shtikwân
 INDF-head
 ‘a head’

Adapted from Collette (2014, p. 255), Table 2.3 illustrates the various allomorphs of each prefix, represented in NEC orthography. For noun stems with initial /u/, such as *utâpânâskw*, Junker et al. (2005) report that some speakers will indeed write a word such as this with an orthographic <u> to indicate the possessor: <uutâpânâskwh>, <ûtâpânâskwh>, or <u-utâpânâskwh>.

Table 2.3: NEC person prefix morphemes

Person	Allomorph	Distribution	Example	Translation
1	n-	Before /ʊ/	n -ûhtâwî	‘my father’
	ni-	Before a consonant	ni -kâwî	‘my mother’
	nit-	Before a vowel other than /ʊ/	nit -âmû	‘my bee’
2	chi-	Before a consonant	chi -mushum	‘your grandfather’
	chit-	Before a vowel	chit -âmû	‘your bee’
	∅-	Before /ʊ/	utâpânâskwh	‘her/his sled’
3	u-	Before a consonant	u -shtikwân	‘her/his head’
	ut-	Before a vowel other than /ʊ/	ut -âmû	‘her/his bee’
	w-	Before /i:/	w -îwit	‘her/his suitcase’

Notes. NEC = Northern East Cree. Allomorphs and examples are in NEC roman orthography. ∅ = no prefix.

Chapter 6 investigates the acquisition of the prefix, tracing its distribution in child-directed speech and the emergence of prefix morphemes in child speech.

2.3.2.1.2. Suffix 1: The possessive suffix -im

The possessive suffix, which is most commonly represented as *-im*, appears in the **Suffix 1** position immediately after the noun stem. Together with the person prefix, this suffix indicates that a noun is a possessee: The prefix signifies the person of the possessor, and the suffix encodes possession by an animate entity (Collette, 2014, p. 304). Although a person prefix should appear on more or less every possessee, the possessive suffix has a much more complex distribution, as (11–13) exemplify.

(11) $\sigma\acute{\text{sh}}\acute{\text{sh}}\wedge^{\text{t}}$
 nishîshîpim
 ni-shîshîp-**im**
 1-duck-**POSS**
 ‘my duck’

(12) $\sigma\acute{\text{C}}^{\text{t}}$
 nitâs
 ni-tâs
 1-sock
 ‘my sock’

(13) $\sigma\text{b}\acute{\Delta}$
 nikâwî
 ni-kâwî
 1-mother
 ‘my mother’

The distribution of the possessive suffix throughout the Algonquian family has vexed linguists for years (e.g., Bloomfield, 1946; Junker, 2003a; Wolfart, 1973), and accounting for the suffix in NEC represents no small descriptive challenge.

In their booklet for English L1 teachers working with Cree L1 students, Junker et al. (2012, pp. 25–26) boil down the distribution of *-im* to grammatical **animacy**: They explain that

inanimate nouns generally do not require *-im*, but animate nouns may require the suffix. In my experience, I have heard other linguists and Cree teachers offer the same rule of thumb. However, despite the ostensible usefulness of this principle, Chapter 7 demonstrates that grammatical animacy does not actually predict whether an NEC noun type requires *-im*.

Collette (2014) provides the most thorough account of *-im*, which occupies about 40 pages of his dissertation. He argues that this distribution hinges upon a web of interacting phonological, morphophonological, morphological, and semantic factors—but the suffix is also lexicalized with some words as well as “randomly distributed with other lexical items” (translated from the source French) (2014, p. 282). The most important factors Collette identifies are as follows, and unless indicated otherwise, the information in the remainder of this section is distilled from his description.

(In)alienable possession: The distribution of *-im* first hinges upon the distinction between *inalienably* possessed and *alienably* possessed nouns. In general, the suffix is not used with inalienable nouns that signify body parts, kinship relations, and some close personal belongings that are “considered essential to human existence” (translated from the source French) (Collette, 2014, p. 288). The ensuing rules govern *-im* with alienable nouns and hinge on other grammatical factors.

Morphophonology: The suffix *-im* is generally not used with most noun stems ending in a nasal consonant /m, n/ or the labialized velar /kw/ (Collette, 2014, p. 291).

Morphology: The suffix is generally not applied to nouns formed from certain derivational suffixes, but on the other hand, *-im* is indeed required for nouns formed from other derivational suffixes (Collette, 2014, p. 330).

Semantics: The suffix is generally required for possession of an alienable, biologically animate entity (human or animal), or for possession of a body part which has been removed or detached, such as the claw of an animal (Collette, 2014, p. 330). For nouns referring to objects or tools, Collette claims that the distribution of *-im* is “downright idiosyncratic” (translated from the source French) (2014, p. 295).

Borrowing: The suffix *-im* is almost always used on nouns that are loanwords from English, regardless of the phonological form of the noun (Collette, 2014, p. 330).

Lexicalization: The suffix has been lexicalized for some kinship terms, such as *uhkum* ‘grandmother’ and *mushum* ‘grandfather’. Goddard (2020, p.c.) observes that all *m*-final nouns in NEC, such as *atim* ‘dog’, probably retain a historically lexicalized *-im*.

Exceptions: Of course, there are exceptions to all of the above rules. The noun *ânishkiwishiu* ‘great-grandparent’ signifies a kinship relation and yet requires *-im*. Several noun stems end in /m, n, kw/ and still require *-im*. This includes *châkwân* ‘thing’ and *nitihkuyin* ‘medicine’, which both occur with *-im* in the speech sampled for the present study. Furthermore, some noun stems ending in /m, n, kw/ lose the person prefix due to morphophonological processes (such as deletion of unstressed vowels and degemination of homorganic consonants), and so they must then bear *-im* as the marker of possession (Collette, 2014, p. 296). As a final example, *-im* is not used with possession of human entities who Collette claims are semantically “incompatible with the idea of possession (‘vagabond’, ‘sorcerer’, ‘devil’)” (translated from the source French) (2014, p. 330).

In sum, the suffix *-im* is a **default** marker encoding possession that is applied to a noun type *unless* some grammatical rule precludes its application.

In fact, anecdotal observations of language change testify to the stability of the suffix as a marker of possession. Collette (2014, p. 291) claims that older speakers “more scrupulously respect certain rules for the distribution of the possessive (phonological, morphophonological, morphological and semantic), whereas young people tend to use the possessive everywhere, as a grammatical and formally stable mark of possession” (translated from the source French). Junker (2003a, p. 11) cites personal communication indicating a tendency among young children to put *-im* on “all possessed independent [i.e., alienable] nouns”.

Chapter 7 examines the distribution of *-im* in child-directed and child speech.

2.3.2.1.3. Suffix 2: Obviative marking for a possessor

Algonquian languages employ a grammatical distinction between “proximate” and “obviative” third persons, which is described in §2.3.2.1.5. The Suffix 2 position is reserved for *-iyiu*, which encodes an obviative possessor. Some Algonquian accounts have argued that this suffix indexes a “further obviative” category, one marking the possessee with a second degree of obviation (e.g., Hockett, 1966). However, others (e.g., Junker, 2003b; Oxford, 2017a; Wolfart, 1978) have

Table 2.4: NEC plural possessor suffix morphemes

Category	Morpheme	Example	Translation
1PL.INCL	-(i)nû	chishîshîpim- inû	‘our duck (and yours)’
1PL.EXCL	-(i)nân	nishîshîpim- inân	‘our duck (not yours)’
2PL	-(i)wâu	chishîshîpim- iwâu	‘your (PL) duck’
3PL	-(i)wâu	ushîshîpim- iwâu-h	‘their duck’

Notes. NEC = Northern East Cree. Morphemes and examples are in NEC roman orthography. 1 = first person. 2 = second person. 3 = third person. PL = plural. INCL = inclusive. EXCL = exclusive.

The Suffix 4 position is the final and most complex slot in the nominal template. Unlike the prefix position and other suffix positions (see Table 2.2), the Suffix 4 slot can be employed outside of possessive constructions. This position also involves the marking of a variety of grammatical categories, although a given noun may only take one Suffix 4 morpheme at a time. These grammatical categories include interacting considerations of **number** (singular or plural), grammatical **animacy** (animate or inanimate), and **obviation** (proximate or obviative status), as well as a **locative** suffix that stands outside these three categories.

2.3.2.1.5. Suffix 4: Three inextricable inflectional categories

The interaction of number, animacy, and obviation presents a suite of special challenges from an L1 acquisition perspective. A noted Algonquian phenomenon described as “one of the most salient features of Algonquian syntax” (Rhodes, 1990, p. 101), obviation has received linguistic attention for almost 200 years (Goddard, 1990). At its core, obviation distinguishes between third-person referents in a particular syntactic or discourse span (Bloomfield, 1946). The basic principle is straightforward: In a given span, one third-person is obligatorily designated *proximate* and all other third-persons are designated *obviative*.

Consider (19–22), adapted from Junker et al. (2013a). The inanimate noun *ashtutin* ‘hat’ in (19) is proximate and unmarked, because it is the only third-person argument in the sentence. In (21), *ashtutin* is again the only third-person argument, and it receives the inanimate plural suffix. However, (20) and (22) involve two third-person arguments in the same clause, and so obviative forms are in play. In (20), *ashtutin* receives the suffix marking an inanimate singular obviative noun, *-iyiu*. In (22), *ashtutin* is grammatically obviative, but inanimate nouns that are plural are

obviative marking on animate nouns. **Obviative** animate nouns take only *-h*, while **plural** inanimate nouns take only *-h*. Outside of context, neither (24) nor (26) explicitly indicate one or more than one frog.

- (23) σ·<íΛĹ° Δ̂ʔ^b_x
 Niwâpimâu îyik.
 ni-wâpimâu îyik
 1-see.TA frog
 ‘I see a frog.’
- (24) ·<íΛĹ° Δ̂ʔ^{b||}_x
 Wâpimâu îyikh.
 wâpimâu îyik-**h**
 see.TA frog-**3’**
 ‘S/he sees a frog.’
- (25) σ·<íΛĹΔ^t Δ̂ʔ^ρ_x
 Niwâpimâwich îyikich.
 ni-wâpimâwich îyik-**ich**
 1-see.them.TA frog-**3p**
 ‘I see frogs.’
- (26) ·<íΛĹ° Δ̂ʔ^{b||}_x
 Wâpimâu îyikh.
 wâpimâu îyik-**h**
 see.TA frog-**3’**
 ‘S/he sees frogs.’

Table 2.5 summarizes the Suffix 4 morphemes conditioned by animacy, number, and obviation. These suffixes are represented in NEC orthography. Again, only one suffix can occur on a given noun at a time. Table 2.5 also illustrates the significant syncretism operating within

the paradigm: The Suffix 4 morpheme *-h* encodes three different grammatical distinctions: Animate obviative, inanimate proximate plural, or inanimate obviative plural.

Table 2.5: Suffix 4 morphemes marking for number, animacy, and obviation

Animacy	Proximate		Obviative	
	<i>Singular</i>	<i>Plural</i>	<i>Singular</i>	<i>Plural</i>
Animate	∅	-(i)ch	-h	
Inanimate	∅	-h	-(i)yi	-h

Notes. ∅ = no suffix.

2.3.2.1.6. Suffix 4: Possession

We have touched only the tip of the obviation iceberg. Complicating things further from a child language perspective, the mechanics of obviation actually play out within a web of syntactic and discursive factors throughout the Algonquian family. For example, Rhodes (1990) (summarized helpfully by Oxford, 2017b) explains four syntactic contexts for obviation, where only the first two are obligatory:

1. **Possessor** obviation: A third-person possessor requires an obviative possessee.
2. **Clausemate** obviation: Within a clause, a proximate third-person obligatorily triggers obviative status for any other third-person(s).
3. **Crossclausal** obviation: A third-person in a matrix clause optionally conditions obviation of a third-person in an embedded clause.
4. **Sentence-cluster** obviation: A third-person can optionally trigger obviation of a third-person in the next sentence.

In the realm of discourse, a common argument holds that obviation marks *topicality*, where the proximate equates to the topic and the obviative to non-topic (Junker, 2004; Russell, 1996; Wolvengrey, 2011). Some (Bliss, 2005) have argued that obviation grammaticalizes information structure (a combination of topic and focus), while others have shown that obviation interacts with not only topicality but also empathy, agency, and point of view (Dahlstrom, 1996, 2015). Obviation plays a particularly central role in narratives, as speakers manipulate the proximate-obviative distinction throughout stretches of discourse (e.g., Goddard, 1990; Hasler, 2002).

(30) $\sigma\acute{J}\acute{J}\wedge\Gamma^{\nu}$
 nishîshîpimich
 ni-shîshîp-im-**ich**
 1-duck-POSS-**3p**
 ‘my ducks’

(31) $\Gamma\acute{J}\acute{J}\wedge\Gamma^{\nu}$
 chishîshîpimich
 chi-shîshîp-im-**ich**
 2-duck-POSS-**3p**
 ‘your ducks’

This straightforward, overt obviative marking changes with inanimate possessees. An inanimate possesser with a third-person possessor will not bear an obviative suffix, as in (32). Junker and Blacksmith (2001) and Junker (2003b) have explained this in terms of co-reference: If there is co-reference between the subject and the possessor of the inanimate object, then no obviative suffix is permitted on the possesser. In fact, the presence of the inanimate obviative singular suffix in (33) precludes a co-referential reading.

(32) $\cdot\acute{\Delta}\wedge^{\text{h}}\text{N}^{\text{h}} \triangleright C^{\text{h}} \supset \text{N}^{\text{h}} \text{e}_x$
 Wâpihtim utashtutin.
 wâpihtim ut-ashtutin
 see.TI 3-hat
 ‘S/he_i sees her/his_i hat.’

(33) $\cdot\acute{\Delta}\wedge^{\text{h}}\text{N}^{\text{h}} \triangleright C^{\text{h}} \supset \text{N}^{\text{h}} \sigma \text{r}^{\text{h}} \text{e}_x$
 Wâpihtim utashtutiniyu.
 wâpihtim ut-ashtutin-**iyiu**
 see.TI 3-hat-**0**
 ‘S/he_i sees her/his*_{i/j} hat.’

3. Inanimate obviative possessives do not bear overt obviative marking, but any agreeing elements (e.g., demonstratives) will.
4. An obviative suffix on an inanimate possessee actually indexes the obviative status of the possessor. This suffix appears in the Suffix 2 position, but it is homophonous with a Suffix 4 morpheme.

In sum, a given noun can bear only one morpheme in the Suffix 4 position to index the animacy, number, and proximate/obviative status of the noun (Table 2.5). However, the exception is that inanimate obviative possessives do not bear a suffix indexing their obviative status.

2.3.2.1.7. Suffix 4: The locative

The last Suffix 4 morpheme that nouns can take is the locative, as illustrated in (36–39) adapted from Collette (2014, p. 275).

(36) <î'î"ΔΡ<
 wâskâhikin
 wâskâhikin
 house
 ‘house’

(37) <î'î"ΔΡσ"̣<
 wâskâhikinihch
 wâskâhikin-**ihch**
 house-**LOC**
 ‘in the house’

interacting grammatical categories, navigate syncretism and homophony, and distinguish the effects of possession on employing affixal positions and obligatory marking. The next section explores the next major set of elements within the nominal category of NEC: demonstratives.

2.3.2.1.8. Summary

Children face an array of particular inflectional challenges when acquiring nouns in NEC. They must master an inflectional template involving multiple affixal positions, consider interacting grammatical categories, navigate syncretism and homophony, and distinguish the effects of possession on employing affixal positions and obligatory marking. Although the present study focuses almost entirely on noun inflection, reference is made on occasion to demonstratives. The next section briefly describes NEC demonstratives.

2.3.2.2. ***Demonstratives and inflection***

This section describes the form and function of demonstratives in NEC. This description draws from the only published account of the NEC demonstrative system (Junker & MacKenzie, 2003) as well as the brief description by Junker et al. (2015). Unless indicated otherwise, all information in this section is distilled from these two sources. Despite the fact that demonstratives are frequent and important in NEC, the usage of the demonstrative system is quite under-described. The present study will shed some light upon how demonstratives are used in child and child-directed speech, but much more research is needed to flesh out the intricacies of the system in discourse and particular grammatical contexts.

Table 2.6 presents the demonstratives that may appear in this dissertation, with each form represented in NEC orthography. In each cell, the stem is in bold. The table is organized according to the categories and distinctions explained in the ensuing description.

First, each demonstrative form minimally consists of a stem. Stems come in **two sets**: Set One, which is the basic set, and Set Two, which is the emphatic set often used when handing something to someone, pointing, or gesturing. Each set contains stems encoding different deictic distances: **proximal**, **distal**, and **remote**. Within the remote category, there is a distinction between stems signifying grammatically animate or inanimate referents.

Table 2.6: The NEC demonstrative system

Set	Distance	Stem	Proximate		Obviative	
			NA.PL	NI.PL	NI.SG	NA / NI.PL
1	PXL	û	uchî	uhî	uyâ uyâyiu	uyâh uyâyih
	DIST	an	anichî	anihî	aniyâ aniyâyiu	aniyâh aniyâyih
	REM	nâh (NA) nâ (NI)	nâchî	nâhî	nâyâ nâyâyiu	nâyâh nâyâyih
2	PXL	mâu	mâuchî	mâuhî	mâuuyâ mâuuyâyiu	mâuuyâh mâuuyâyih
	DIST	mân	mânichî	mânihî	mâniyâ mâniyâyiu	mâniyâh mâniyâyih
	REM	mânâh (NA) mânâ (NI)	mânâchî	mânâhî	mânâyâ mânâyâyiu	mânâyâh mânâyâyih

Notes. Adapting Junker et al. (2015) and Junker & MacKenzie (2003). NEC = Northern East Cree. NA = animate. NI = inanimate. SG = singular. PL = plural. PXL = proximal. DIST = distal. REM = remote.

Additionally, each stem can inflect with **suffixes** encoding various grammatical categories. Suffixes are in complementary distribution, so a demonstrative can bear only one suffix at a time. The categories encoded by suffixes include animacy, plurality, obviation, and locative.

1. A demonstrative with a proximate referent may take a **plural** suffix, and the form of this suffix depends on whether the demonstrative signifies an animate or inanimate referent.
2. An **obviative** suffix encodes an obviative referent, with the form of the suffix depending upon animacy and number. As Table 2.6 shows, obviation also entails variation and syncretism within the paradigm. First, more than one obviative form can encode the same distinction: *uyâ* and *uyâyiu* both carry a meaning of ‘this’ pertaining to an inanimate singular obviative referent. Second, the same forms, such as *uyâh* and *uyâyih*, can encode either the animate obviative or the inanimate obviative plural.
3. Stems taking a **locative** suffix convey an adverbial meaning akin to ‘here’ or ‘there’ in English. Because locative forms serve as adverbs rather than nominals, they are not included in Table 2.6 and will not be discussed further.

Lastly, many of these demonstrative forms can carry out three of the primary syntactic functions described by Diessel (1999) in his typological overview. Taken from adult speech in

the CCLAS corpus, (42–44, 46) demonstrate that the demonstrative form *an* ‘that’ can serve multiple functions. The demonstrative serves a **pronominal** function in (42) and an **adnominal** function modifying a noun in (43).

(42) ▷ŋ^a <ŋ^a_x
 Utinh an.
 utinh **an**
 take.IMP **DEM.DIST**
 ‘Take **that**.’ (Adult, 2;05.14, A1.09, 10:17)

(43) ▷ŋ^a <ŋ^a Γʔσ^a Δ̇P^a_x
 Utinh an misinihîkin.
 utinh **an** misinihîkin
 take.IMP **DEM.DIST** book
 ‘Take **that** book.’ (Adult, 4;02.06, B1.08, 20:40)

Demonstratives can also serve in **equational** constructions as identificational elements in null-copula constructions. Here the word order hinges upon the demonstrative set: Set One forms follow the noun as in (44), and Set Two forms precede the noun as in (45).

(44) ḥ^aŋ^a Δ̇P^a <ŋ^a_x
 Chîshtihîkin an.
 chîshtihîkin **an**
 fork **DEM.DIST**
 ‘**That** is a fork.’ (Adult, 3;08.24, A1.33, 02:04)

- (45) ᐃᓐ ᐃᓐᐅᓐᐅᓐ
 Mân chîhchâyâu.
mân chîhchâyâu
DEM.DIST square
 ‘**That** one is a square.’ (Adult, 3;02.05, A1.24, 23:34)

2.3.2.2.1. Demonstratives and possession

The present study largely discusses demonstratives only in the context of possession. I focus primarily on the role demonstratives play in possessive constructions, where they can modify a possessee, or they can stand in place of an inflected noun as the possessee.

For example, the demonstrative *an* ‘that’ serves as a modifier for the inflected possessee *chiminikwâkin* ‘your cup’ in (46), which parallels *an misinîhîkin* ‘that book’ in (43).

- (46) ᐃᓐ ᐱᓐ ᐃᓐᐅᓐᐅᓐ
 Tân an chiminikwâkin.
 tân **an** chi-minikwâkin
 where **DEM.DIST** 2-cup
 ‘Where’s your cup?’ (Adult, 2;01.12, A1.03, 22:06)

The fact that demonstratives can agree with possessee nouns means they can play a crucial role encoding grammatical features of a noun—especially when the noun itself does not overtly index those features. For example, an inanimate noun with a third-person possessee does not bear an obviative suffix, but an agreeing demonstrative does (§2.3.2.1.6.). In a verbless clause such as (47), the adnominal demonstrative *uyâ* ‘this (OBV)’ serves as the only overt signal of the obviative status of the possessee *umîchim* ‘her/his food’.

- (50) ᠠᠨᠢ ᠵᠢᠨᠢ ᠵᠢᠨᠢ ᠵᠢᠨᠢ ᠵᠢᠨᠢ
 Chîyi uhî nimâ
 chîyi u-hî nimâ
 2 **DEM.PXL-0p** NEG
 ‘These are yours, eh?’ (Adult, 4;00.00, B1.05, 31:52)

- (51) ᠠᠨᠢ ᠵᠢᠨᠢ ᠵᠢᠨᠢ ᠵᠢᠨᠢ
 “Mâu chîyi” îshi.
mâu chîyi îshi
DEM.PXL 2 say.IMP
 ‘Say “**This** is yours”.’ (Adult, 2;01.12, A1.03, 20:41)

These equational structures occupy a particularly prominent role in the speech of Ani, the youngest child that the present study considers (Henke, 2019b). This is discussed further in Chapter 2.

2.3.2.3. Pronouns and inflection

The pronoun category represents the final member of the nominal class in NEC. As with demonstratives, NEC has a rich inventory of pronouns. As Junker et al. explain (2012, p. 29), the class of pronouns in NEC includes question words, focus words, hesitation words, pronouns of doubt, question pronouns of doubt, and absentative words—each of which can signify animate or inanimate referents and take suffixes encoding number and obviation.

The realm of pronouns is too large to approach comprehensively in this dissertation, and so the present study will focus on the two types of pronouns most relevant to possession: **personal** pronouns and **interrogative/indefinite** pronouns. The remainder of this section draws from three sources (Junker et al., 2015; Junker et al., 2012; Junker & MacKenzie, 2004) and lays out the members of each pronoun subclass and their inflectional patterns.

Personal pronouns are free words that are largely used for emphasis, because arguments are typically marked on verbs via bound pronominal elements. In (52), adapted from Junker et al. (2015), the pronoun optionally emphasizes the third-person argument that is obligatorily indexed via verbal morphology.

- (52) ᐃᑦᑦ ᐃᑦᑦ ᐃᑦᑦ ᐃᑦᑦ ᐃᑦᑦ_x
 Wîyi nâtâh chiki ituhtâu.
wîyi nâ-tâh chiki-ituhtâu.
3 DEM.REM-LOC FUT-go-3SG
 ‘It is **S/HE** who will go there.’

Personal pronouns are represented in NEC orthography and listed in Table 2.7. For plural forms, the suffix is bolded. Third-person forms include a proximate/obviative distinction that is only indicated morphologically in the third-person proximate plural form *wîyiwâu* ‘they/them (proximate)’. Because third-persons are animate, the number distinction is again neutralized in the obviative portion of the paradigm.

Table 2.7: NEC personal (emphatic) pronouns

Person	Singular	Plural
1	nîyi	chîy âni u (1PL.INCL) nîy ân (1PL.EXCL)
2	chîyi	chîyiw âu
3.PROX	wîyi	wîyiw âu
3.OBV	wîyi	wîyi

Notes. NEC = Northern East Cree. Pronouns are in NEC roman orthography. 1 = first person. 2 = second person. 3 = third person. PL = plural. INCL = inclusive. EXCL = exclusive. PROX = proximate. OBV = obviative.

In addition to these personal pronouns, one set of polysemous forms serves as interrogative and indefinite pronouns: *awân* means ‘someone, a person, who’ and *châkwân* means ‘something, a thing, what’. Like nouns and demonstratives, these pronouns can take a suffix encoding animacy, number, and obviation. These forms are listed in Table 2.8, where stems are bolded. These suffixes resemble those used to mark demonstratives (Table 2.6), although without the variation present within individual cells in the demonstrative paradigm. Number is again neutralized for animate obviatives, and syncretism holds with the *-yiu*h suffix encoding animate obviative and inanimate obviative plural forms.

Table 2.8: NEC interrogative/indefinite pronouns

Animacy	Proximate		Obviative	
	Singular	Plural	Singular	Plural
Animate	awân	awânichî	awâyiuh	
Inanimate	châkwân	châkwânihî	châkwâyiuh	châkwâyiuh

Notes. NEC = Northern East Cree.

2.3.2.3.1. Pronouns and possession

Personal pronouns operate as possessors across two types of possessive constructions. First, a pronoun may occur as an overt possessor along with a possessee, as in (53). Second, one may occur alone in a possessor-only construction, as in (54).

- (53) Ć^ə ř^ə řĪĪΛ^əx
 Tân chîyi chimâmâpisun
 tân **chîyi** chi-mâmâpisun
 where **2** 2-swing
 ‘Where is **your** swing?’ (Adult, 2;01.12, A1.03, 33:32)

- (54) Ć^ə ř^əx
 Tân chîyi
 tân **chîyi**
 where **2**
 ‘Where’s **yours**?’ (Adult, 2;07.06, A1.12, 14:46)

The two interrogative/indefinite pronouns each participate in possession differently. The pronoun *awân* ‘someone, a person, who’ serves as a possessor in the same fashion as the personal pronouns. In (55) this possessor occurs with a noun possessee, which includes a demonstrative agreeing with the noun. In (56) the possessor occurs with a demonstrative possessee.

- (55) < < i^c > > i^h > > C̣σ J^h x
 Awân uyâh utânishish-h.
awân u-yâh u-tânish-ish-h
who DEM.PXL-3' 3-daughter-DIM-3'
 'Whose daughter is this?' (Adult, 3;04.09, A1.26, 29:55)

- (56) < < i^c > > i^h p^o x
 Awân uyâyiu
awân u-yâyiu
who DEM.PXL-0'
 'Whose is this?' (Adult, 2;04.22, A1.08, 33:22)

Because it is inanimate, the pronoun *châkwân* 'something, a thing, what' can only serve as a possessee, as in (57). In such cases, the pronoun behaves as a noun and takes the same possessive inflection.

- (57) Γ i^h J^h p^o < i^c > > i^h ḅσ L^h x
 Miywâshiyuh â uchâkwânimh.
 miywâshiyuh â u-**châkwân**-im-h
 be.pretty Q 3-**something**-POSS-0'p
 'Are her **things** (clothes) nice?' (Adult, 3;06.23, A1.30, 07:25)

2.3.3. Summary

As a polysynthetic language, NEC has a nominal category comprised of nouns, demonstratives, and pronouns, where different elements can inflect via affixation to encode interacting grammatical categories of animacy, number, and obviation. Each type of nominal participates in the expression of possession, and this entails different levels of affixation and grammatical marking. The remainder of the present study focuses almost entirely on nouns, but this chapter serves as a reference for the inflectional properties of demonstratives and pronouns.

Nouns can take a prefix and various suffixes within an inflectional template. The final suffix in the template, aside from the locative, consists of a multiple-exponence morpheme encoding

values for animacy, number, and obviation. Demonstratives can occur as bare stems or take one suffix expressing the same multiple categories but differing in form from the final noun suffix. The two relevant types of pronouns for the present study—personal and interrogative/indefinite pronouns—serve different functions in possession and inflect to differing degrees.

Chapter 3: A brief literature review

The present study focuses largely on providing an atheoretical, descriptively rich account of adult input and the emergence of noun inflection within child speech for NEC. The previous chapter laid out the grammatical characteristics of NEC and the mechanics of noun inflection, with emphasis on inflectional encoding in expressions of possession. This chapter briefly describes the landscape of literature on the first language (L1) acquisition of polysynthetic languages (§3.1), crosslinguistic findings relevant to the acquisition of possessive inflection (§3.2), a few areas of intersection with linguistic theory (§3.3), and some issues relevant to the interests of Indigenous language communities in North America (§3.4).

3.1. The L1 acquisition of polysynthesis

The present study examines the acquisition of a polysynthetic language, and polysynthetic languages like NEC are underrepresented in the field of first language acquisition (see, e.g., comments from Kelly et al., 2014; Kelly et al., 2015). This creates a problematic gap in the study of how children develop the uniquely human capacity of linguistic expression. In order to most fully understand how children acquire inflectional morphology, for example, we must investigate the widest possible set of typological and structural possibilities, and we cannot assume that what holds for the acquisition of languages such as English also holds for the acquisition of polysynthetic languages (see, e.g., Bowerman, 2010). As Kelly et al. (2014) point out, we need more research on polysynthetic acquisition to shed light on issues such as determining the “hooks” that children use to identify and extract morphological units, the role of factors such as perceptual salience and morphological complexity in this process, and how children cross-linguistically may or may not use unanalyzed chunks to acquire morphosyntactic structures. This is not to say that the acquisition of polysynthesis has been ignored, and a body of work has been developing around this area for decades.

Two language families in particular occupy the bulk of research in polysynthetic acquisition: Mayan languages have been the center of acquisition work since the 1960s (e.g., P. Brown, 1998; Casillas et al., 2019; De León, 1999; Pedro, 2015; Pfeiler, 2003; C. Pye, 1979; C. Pye et al., 2017; Stross, 1969), and more than 30 years of work has been done with Inuit languages (e.g., Allen, 1996, 2017; Allen & Dench, 2015; Fortescue, 1984; Fortescue & Olsen, 1992).

Outside of these arenas, a small number of individual languages have been approached by a few number of studies each. From North America this includes Comanche (Casagrande, 1948), Dakota (Nokony, 1977), Dëne Sų́líné (Cook, 2006), Mohawk (Feurer, 1980; Mithun, 1989), Navajo (Chee, 2017; Courtney & Saville-Troike, 2002; Gentner & Boroditsky, 2009; Saville-Troike, 1996), and Zuni (Kroeber, 1916)—as well as forthcoming research with Dëne Sų́líné (Jung, 2019, p.c.). Promising recent efforts include polysynthetic languages across the globe, such as Chintang in Nepal (e.g., Stoll et al., 2012, 2017) and Murrinh-Patha in Australia (Forshaw, 2016; Forshaw et al., 2017).

For the present study, the most important body of work in polysynthetic acquisition has been the Chisasibi Child Language Acquisition Study (CCLAS, www.mun.ca/cclas/), which focuses on the L1 acquisition of Northern East Cree (NEC) (Brittain et al., 2007). The data and methodology of the CCLAS project are discussed in further detail in Chapter 4. Until CCLAS, no scientifically modern study examined the acquisition of an Algonquian language, even though the family covers a massive geographical range in North America (Mithun, 1999) and has the largest number of speakers (approximately 175,000) of any Indigenous language family in Canada (Statistics Canada, 2017).

To my knowledge, outside of CCLAS only a few other studies have approached Algonquian acquisition. Upper and McKay (1987, 1988) describe the L1 acquisition of Anishiniimowin (Oji-Cree), with a study that took place in the mid-1980s. They conducted a longitudinal examination of one child from age 0;10 to about 1;5, along with a cross-sectional sample from two other children, age 3;8 and 8;3. Although groundbreaking, their work suffers from important limitations: The authors themselves explain that data were not phonetically transcribed in a precise and consistent scientific format (1987, p. 27). Since their initial publication, Upper and McKay's transcript data have been used in just a handful of limited reports (e.g., Hack & Mellow, 2007; Upper, 1993). Their original tape recordings are unavailable, and I have been unable to locate them through conversations with people who have been connected to the project to various extents (Mellow, 2018, p.c.; Nichols, 2019, p.c.).

Another body of work considers the acquisition of Southern East Cree, consisting of a conference paper by Jones (1986) and later her dissertation (1988). Here the focus is on child-directed rather than child speech, as Jones primarily describes the lexical, phonological, and inflectional characteristics of what she calls "Cree baby talk". This set of studies also suffers

from crucial methodological limitations. The details are scant, but it appears that Jones gathered anecdotal observations by interviewing language consultants rather than collecting any kind of *in situ* primary data. Nonetheless, some of these anecdotal claims resemble patterns in the CCLAS data used for the present study. For example, Jones asserts that the child-directed lexicon in Southern East Cree contains many words pertaining to body parts and bodily functions; basic qualities (e.g., ‘sick’ or ‘hurt’); kinship terms and nicknames; familiar objects and animals; familiar actions; exclamations; as well as onomatopoeic words. As the present study demonstrates in later chapters, nouns signifying body parts, kinship relations, and familiar objects and animals are indeed quite common in child-directed speech within CCLAS recordings.

The final Algonquian study is Leonard’s (2007) dissertation on the acquisition of noun suffixes, verb suffixes, and possessive prefixes in Myaamia by two children aged approximately 8;0 and 10;0. This work is also groundbreaking, but it is a case study in language reclamation rather than traditional L1 acquisition: The Myaamia language had no L1 speakers for 30 years, until Daryl Baldwin decided to learn Myaamia from language documentation records and raise his four children with the language (2007). Although they are indeed becoming Myaamia speakers, the children in Leonard’s work are experiencing a process that is fundamentally different from the L1 acquisition this dissertation describes.

Within this landscape of literature, CCLAS represents one of the only opportunities to examine how children acquire the Algonquian flavor of polysynthesis in a typical L1 situation.

Linguistic approaches to polysynthesis in adult grammar often revolve around verb structure and/or phonological considerations such as fusion or prosodic wordhood (see, e.g., various chapters in Fortescue et al., 2017). Polysynthetic acquisition research tends to focus on these areas as well, particularly in the verbal domain, with nominal elements garnering less attention. For example, since 2004, CCLAS has primarily explored the acquisition of 1) phonological considerations, such as the NEC stress/metrical system, syllable structure, and segments (Bryant, 2013; Rose et al., 2010; Rose & Brittain, 2011; Swain, 2008; Thorburn, 2010, 2014), and 2) verb types and verbal inflection, including intransitive verbs and passives (Johansson, 2012; Terry, 2010).

However, in NEC nominal elements can also have multifaceted morphological structure. As the previous chapter demonstrates, nouns in the context of possession employ rich templatic

morphology that indexes grammatical properties of the possessee and possessor. In fact, the expression of possession in many polysynthetic languages involves inflecting nominals with various affixal elements (Mithun, 1996, 1999). Possession in the acquisition of polysynthetic languages remains largely unexplored, and the next section presents a brief review of some cross-linguistic findings related to the acquisition of morphosyntactic encoding for possession.

3.2. The L1 acquisition of possessive encoding

This dissertation centers on the acquisition of linguistic encoding for expressing possession, a pivotal concept in child development. It is well known that even very young children are concerned with expressing possession, and children before the age of 2;00 grasp and express aspects of the concept before they acquire their target language's full system of grammatical encoding (e.g., R. Brown, 1973; Clark, 2001; Gelman et al., 2012; Golinkoff & Markessini, 1980; Levine, 1983; Tomasello, 1998).

For example, one-year-old children who do not produce English possessive pronouns still comprehend the word "my" when determining which referent a speaker is signifying (Saylor et al., 2011). The usage of possessive pronouns (at least for first- and second-persons) has been reported emerging somewhere after age 1;06 and consolidating after age 2;00 (Hay, 2006). The emergence of the English possessive morpheme <'s> has been reported at much later ages. For instance, a study of two English-acquiring children around the age of 1;11 finds that two-word combinations of possessor and possessee are common, but these constructions are missing encoding via <'s> (Braine & Bowerman, 1976, pp. 19, 23, 36). Radford and Galasso (1998) describe a child omitting the same morpheme in all obligatory contexts until age 3;2.

A number of studies have approached the acquisition of possessive encoding in non-polysynthetic languages, and children acquiring languages such as French, German, Greek, Hebrew, and Japanese seem to go through some similar stages in expressing possession (Clancy, 1985; Eisenbeiß et al., 2009; Leroy-Collombel & Morgenstern, 2012; Marinis, 2016). Children will often begin by producing constructions with only a possessor. Later, children will express possession with a combination of possessor and possessee that omits grammatical marking such as inflection, case markers, or adpositions (see the extensive review by Marinis 2016). Children continue to omit such grammatical morphemes, whether free or bound, until they eventually acquire their target language (2016, p. 454).

The acquisition of possession has been approached in languages with richer and more complicated noun morphology as well. In Finnish, for example, nouns are marked for case and number, and the genitive case primarily marks possession. Children begin by producing suffix-less nominative nouns in their first word forms, until they use the genitive suffix in possessive constructions by age 1;08 (Laalo, 2009, p. 61). Croatian has a system of seven cases, and children use genitive case marking in a “default” way of expressing possession that is ungrammatical in adult speech (Kovačević et al., 2009, p. 167).

In Estonian, nominals inflect to mark number and case in a largely regular and agglutinating fashion, where the genitive form is also used to express possession. Argus (2009, p. 128) reports that at the one-word stage, children express possession by producing the possessor only (e.g., *emme* ‘mommy’ for ‘Mommy’s’). After children enter a two-word stage, the first possessive forms (around age 1;06 to 1;08) consist of possessor-possessee pairings with correct genitive encoding. However, these genitive forms are not marked via suffixation and are instead identical to unmarked nominative forms (2009, p. 128). Argus observes that children seem to master Estonian nominal inflection after age 3;06.

Possession in Turkish involves inflecting the possessor with a genitive form and the possessee with a suffix that agrees with the person and number of the possessor (Ketrez & Aksu-Koç, 2009). One Turkish child has been reported expressing possession at age 1;3 but without obligatory possessive or genitive morphology (2009, p. 34). The possessive suffix on the possessee emerges at age 1;06 and genitive case on the possessor at age 1;07 (2009, p. 33), although Ketrez and Aksu-Koç do not specifically identify a period where the full system of possessive encoding is mastered. However, they do attribute the relatively early emergence of nominal inflection in this child to language-specific characteristics: Turkish morphology is very regular and transparent, and individual morphemes are salient and easily segmentable (2009, p. 42).

The acquisition of possession in polysynthetic languages has received no explicit attention, but some similar patterns can be gleaned from existing research. For example, children acquiring Warlpiri commit errors of overgeneralization, where they use a single case marker as a general marker of possession, and it takes until their fourth year to master the application of possessive marking (Bavin & Shopen, 1991, pp. 113–114).

Two studies provide differing accounts of the acquisition of possessive marking in Mohawk. Feurer describes one child at age 2;10 “quite frequently” producing combinations of a possessor and noun missing possessive inflection (1980, p. 31). In fact, Feurer says productive usage of possessive inflection emerges “late” with this child, but no age of acquisition is given (1980, p. 35). Mithun (1989, p. 294), on the other hand, describes a different child using person prefixes on possesseees in adult-like contexts by age 2;09.

Children acquiring Mayan languages have also expressed possession at early ages but without all requisite grammatical marking. For example, Pye (1992, p. 250) observes a K’iche child at age 2;01 producing common nouns as possesseees but missing the obligatory person prefix. Brown (1998, p. 738) reports that two Tzeltal-speaking children before age 2;05 produce two-word combinations of possessor and possessee lacking adult-like inflection. With K’iche’, Pye (1979, p. 460) describes for a child approximately age 2;09 producing the same kinds of constructions lacking obligatory inflection of the possessee. In her investigation of the acquisition of intersecting considerations of animacy, number, and possession in Yucatec Maya, Pfeiler (2009, pp. 100–102) notes variation between two children: One child masters inflectional marking by age 3;00 but another child overgeneralizes a possessive pattern until age 4;01.

When it comes to the acquisition of Algonquian languages, Upper and McKay’s data provide one clue. In his review of their transcripts and notes during his work as a consultant on their original project, Nichols (Upper & McKay, 1987, p. 108) observes that the earliest expression of possession in Anishiniimowin is a combination of possessor and possessee noun that is missing possessive inflection, but he does not provide additional information.

Altogether then, a somewhat coherent picture of the acquisition of possessive marking emerges from cross-linguistic literature. Children often begin by producing a word only to indicate the possessor. This is commonly followed by two-word combinations of possessor and possessee without the necessary marking—or at least without overt, specific morphology encoding possession. Full mastery of expressing possession takes at least a few years, although the speed of acquisition likely hinges upon the interaction of language-specific characteristics and variation between individual children. However, none of the languages surveyed above mark possession quite like NEC, where the possessee inflects to index features of the possessor and possessee across multiple grammatical categories (person, animacy, number, and obviation).

3.3. Intersection with theory

Most of the developments in research and theory concerning the L1 acquisition of inflectional morphology tend to be grounded in studies of Indo-European and other major world languages (e.g., Ambridge & Lieven, 2011, p. 139), which tend to differ radically in linguistic structure from polysynthetic languages such as NEC. As such, polysynthetic languages offer an important testing ground for theory focused on issues such as how children segment the speech stream, build lexicons and word classes, acquire argument structure, and identify, abstract, and acquire productive use of inflectional morphology (e.g., Ambridge & Lieven, 2011; Blom, 2018; Bowerman, 2010; Clark, 2015; Deen, 2012; Lidz et al., 2016; Tomasello, 2003; Viau & Bungler, 2016).

This dissertation represents the first dedicated study of the acquisition of possessive marking in a polysynthetic language. It is also constrained in its reliance upon a small sample of naturalistic data—with no additional insight yet available from other research paradigms such as caregiver diaries or experimental production and perceptions tests (see, e.g., Ambridge & Lieven, 2011, pp. 7–11). Accordingly, the present study does not advocate or seek to test any particular theoretical position. The goal here instead is to provide a rich and detailed description of the data in order to enable investigation from a variety of theoretical vantage points.

In this endeavor, however, the description of the data concentrates on providing information relevant to a number of theoretical perspectives under the general umbrellas (e.g., Ambridge & Lieven, 2011; MacWhinney, 2015) of 1) nativist, generativist, Universal Grammar approaches (e.g., Chomsky, 1993, 1995; Guasti, 2002; Jackendoff, 2002); and 2) emergentist, functionalist, constructivist, usage-based approaches (e.g., Bybee, 2010; Bybee & Beckner, 2015; Diessel, 2013; Goldberg, 1995; Tomasello, 2003). Across detailed accounts in both child-directed speech as well as child production, this information includes: frequency counts of noun types and tokens of inflectional forms, including individual morphemes; detailed descriptions of the emergence of productive usage over time for children; as well as accounts and examples of errors in adult and child production.

Frequency receives particular attention throughout the present study, because of its central presence within L1 acquisition theory. Theorists of many stripes have long concerned themselves with the issue of whether—or to what extent—child acquisition relates to the frequency of grammatical elements such as inflectional morphology, derivational morphology, or particular

kinds of words and constructions in child-directed speech (Ambridge & Lieven, 2011; Blom, 2018; R. Brown, 1973; Clark, 2009; Gülzow & Gagarina, 2011; Pinker, 2013; Slobin, 1985; Yang, 2018). In the realm of frequency, for example, the Zipfian distribution (Zipf, 1935, 1949) of words and morphology has been of particular interest for those investigating how children learn how to abstract generalizations (e.g., Goldberg et al., 2004; Yang, 2016), and so the present study points out Zipfian distributions of inflectional morphology.

3.4. Relevance for language communities

The present study takes place within an important, larger social context of access and equity that intersects with the scientific study of L1 acquisition: As the result of colonization, many Indigenous communities throughout the United States and Canada face an array of disparities when it comes to issues of education, health, and economics (see, e.g., Ball, 2009; Fulford, 2007; Whalen et al., 2016).

For example, many children in Indigenous communities—whether they speak an Indigenous language or a minority dialect such as First Nations English—may be disproportionately diagnosed with speech delays and impairments, because the tools and methods for speech language pathology are designed for “standard” English dialects and are thus linguistically and culturally inappropriate for such communities (e.g., Anderson, 2015; Ball, 2009; Ball & Bernhardt, 2008, 2012; Ball & Lewis, 2005; Kidd, 2014; Peltier, 2011, 2014). The CCLAS project, for example, was established in part to respond to this problem and to help inform the creation of NEC-specific methods and tools for assessing child language development (Brittain et al., 2007).

Furthermore, with the rise of Indigenous language revitalization efforts throughout the United States and Canada, communities require appropriate and effective methods and resources across the board to support and assess L1 acquisition as well as second language (L2) learning (e.g., Hermes et al., 2012; Hermes & Bang, 2014; King & Hermes, 2014; Linn et al., 2002; Lokosh (Joshua D. Hinson), 2019; Mellow & Begg, 2014; Morgan, 2017; Peter & Hirata-Edds, 2006). The goals of the CCLAS project (Brittain et al., 2007) intersect with this work as well. For example, insight into the typical path of acquisition of NEC can inform the efforts of language nest and immersion programs, which aim to create new generations of L1 speakers. Furthermore, CCLAS research has deepened the linguistic understanding of lexical,

phonological, and morphosyntactic facets of NEC, which can inform the creation of resources for language learners (Henke & Brittain, 2019).

Chapter 4: Method

This chapter outlines the research questions for this dissertation and describes the data sources and method used to answer these questions.

4.1. Research questions

Given the landscape of literature described in Chapters 2–3, this study poses the following three research questions (RQs) pertaining to the L1 acquisition of nominal inflection in NEC.

RQ1 Which aspects of possessive inflection are present in adult input to children within the CCLAS corpus?

RQ2 How is possession expressed by children before the emergence of possessive inflection?

RQ3 What is the path of emergence for children for the inflectional categories involved in possession?

4.2. Method

Given these RQs, the following sections describe terminological issues (§4.2.1.), the two sources of data for the current study (§4.2.2.), procedures for sampling and coding data (§4.2.3.), strategies for approaching each RQ (§4.2.4.), and criteria for determining the productive usage of inflectional morphemes (§4.2.5.). All research for this dissertation was completed with an approval of this study as exempt by the Institutional Review Board at the University of Hawai‘i at Mānoa (protocol number 2018-0052).

4.2.1. A word on “data”

In this dissertation, I use the term “data” in the typical sense within the Western academic field of Linguistics: recordings of utterances from speakers of a language along with the representations and analyses of those utterances.

It is important to acknowledge that many Indigenous and non-Indigenous scholars have raised questions, concerns, and objections regarding the idea of casting language as “data”. For example, one can argue that considering language as “data” is grounded in the colonial legacy of extraction from Indigenous communities, and also that this designation places language into a

sterile and decontextualized role as an object of study rather than a vital foundation of people's lives and cultures. In particular, several of my colleagues from Indigenous communities, both in personal conversations and in public fora, incisively critique even basic aspects of “data” practice in Linguistics, such as the dissection of utterances into interlinear glossed texts. Scholars such as Leonard (2017, 2018), Smith (2013), and Smith et al. (2019) provide more insight and perspectives regarding colonialism and academic research as well as ways to carve paths forward and ensure that research includes and serves Indigenous communities and their interests.

I acknowledge these perspectives and critiques, and in this dissertation I use the term “data” strictly out of convenience. By using this terminology and the conventions of the field of Linguistics, such as interlinear glossed text, I can more directly relate this dissertation to decades of existing research and knowledge—however narrowly conceptualized this body may be.

4.2.2. Data sources

Data for this dissertation come from two sources: 1) the CCLAS corpus, and 2) language consultants, who are native speakers of NEC. The following sections describe the collection and characteristics of these data.

4.2.2.1. *The CCLAS corpus*

Details in this section primarily come from Brittain et al. (2007), who describe CCLAS data and methodology. Additional details not provided in this section may be found there.

The CCLAS corpus consists of 95 video recordings involving three children growing up in Chisasibi, comprising approximately 60 hours of child and child-directed speech in total. The children were each filmed about every two weeks, for an average of 45 minutes per session, between November 2004 and April 2007. These videos capture naturalistic interactions in a home setting between one adult and one child at a time, although a handful of videos were recorded in a playroom at the Anjabowa Child Care Centre. In general, each of the three children interacts with the same adult and no other children in a given recording sessions. However, there are occasionally other people captured in the recordings. This includes the children's parents, siblings, other relatives, and visitors to their homes.

The adult in the videos is Darlene Bearskin, a community member in Chisasibi who was the project coordinator for the CCLAS project. Darlene is also one of the language consultants for

this dissertation. As project coordinator for CCLAS, Darlene handled a number of aspects of data collection and processing. For data collection, she operated as the liaison with participating families and filmed each recording session. The children are very familiar and comfortable with Darlene, which enabled genuine naturalistic interactions throughout the videos.

These interactions were largely free, unstructured, and conducted in NEC. Darlene would encourage the children to use the language while they engaged in activities such as playing with toys, looking through picture books, and telling spontaneous stories about events and people in their lives.

4.2.2.1.1. Corpus data processing

The CCLAS project team processed these recordings using Phon (www.phon.ca), a freely available software program developed for language acquisition data management and phonological analysis (Rose et al., 2006; Rose & MacWhinney, 2014). Phon works similarly to ELAN (<https://tla.mpi.nl/tools/tla-tools/elan/>), where a single interface allows users to play media files and create and access tiers of time-aligned annotations built upon an open-source XML backbone.

For each video in the corpus, the CCLAS team segmented individual utterances and created time-aligned tiers of data. A fully processed utterance includes the following tiers in Phon:

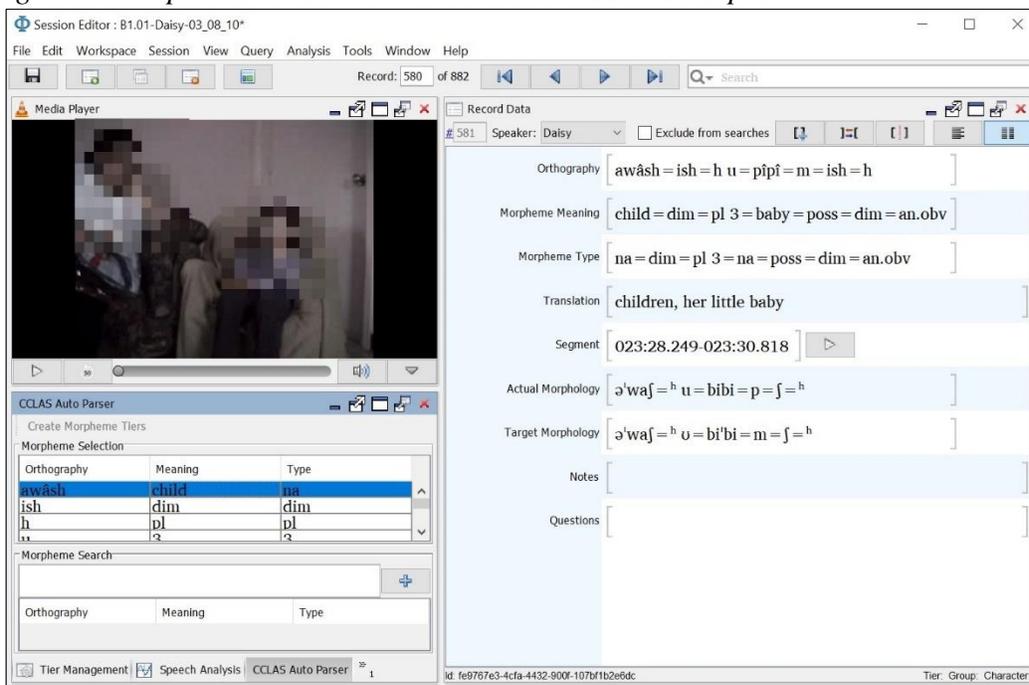
1. **Orthography:** This tier contains a representation of the utterance in NEC roman orthography. This is provided by a native speaker of NEC who has reviewed the utterance. This Orthography tier portrays the utterance as spoken for adult speech, and for child speech portrays the utterance as the intended adult-like target. In the Orthography tier, morphemes are separated by an equals sign <=>.
2. **Morpheme Meaning** and **Morpheme Type:** These tiers contain morpheme-by-morpheme glossing, using a coding system created by CCLAS. This dissertation employs its own coding system, and so the CCLAS system is not discussed further.
3. **Translation:** An English translation is provided by a native speaker of NEC.
4. **Segment:** This tier gives a time stamp for the utterance within the video file.
5. **IPA Actual:** This tier contains an IPA transcription of the utterance. These are double-blind transcriptions done independently by two separate CCLAS data processors, which

have been compared and validated. A data processor typically is an undergraduate student majoring/minoring in Linguistics at Memorial University, who is working in the Speech Sciences and Language Acquisition Laboratory under the supervision of Dr. Yvan Rose.

6. **IPA Target:** This tier provides an IPA transcription of an adult-level target for the utterance. These targets have been provided by native speakers of NEC, particularly Darlene Bearskin, through elicitation.
7. **Actual Morphology and Target Morphology:** These tiers contain the IPA transcriptions from the Actual tiers, but here morpheme breaks are indicated by an equals sign <=>.

Figure 4.1 provides a screenshot of Phon, displaying the various data that accompany an individual processed utterance. On the left is the video file viewer (blurred here to maintain the privacy of the participants), and below that is the auto-parser tool created by CCLAS, which allows for quick parsing and glossing of morphemes from the Orthography tier. The right side of Phon contains various time-aligned data tiers.

Figure 4.1: A processed child utterance in the CCLAS corpus



In Figure 4.1, for example, the tiers show that at 23:28 in the video recording B1.01 Daisy produces *awâshish-h upîpîmish-h* to mean ‘children, her little baby’. Her actual production (Actual Morphology) is very close to the adult-like target (Target Morphology), with Daisy applying a child-like process of denasalization to the possessive suffix *-im* to produce [p] instead of [m].

Importantly, CCLAS data has been gathered and processed with community support (Brittain et al., 2007; Henke & Brittain, 2019). The CCLAS project was initiated at the request of the Cree School Board of Quebec and has been undertaken with permission from the Cree Nation of Chisasibi. Funding for CCLAS has come from the Social Sciences and Humanities Research Council (SSHRC) of Canada, Cree School Board, and Memorial University, with in-kind support from the Cree School Board and Anjabowa Child Care Centres. Additionally, community members from Chisasibi have been essential members of the CCLAS team and have done vital transcription, translation, data processing, and more.

4.2.2.1.2. Privacy restrictions on CCLAS data

The CCLAS corpus is protected by a strict privacy agreement with participating families (Brittain et al., 2007). A copy of the CCLAS Parent/Guardian Consent Form is freely available online (www.mun.ca/cclas/methodology/ethics/). The form was created in 2004 with input from community members associated with the Cree School Board, the Cree Board of Health, and Anjabowa Childcare Centre of Chisasibi.

This agreement puts an array of protections in place. No real names are used to identify the three children in the corpus, who have been given codenames, nor are real names used to identify anyone else in the videos. All personal names are redacted in the CCLAS corpus annotations. No CCLAS video material may be shared publicly. Nobody outside of authorized members of the CCLAS team may access the video recordings and their associated annotations. However, the family of each child has copies of that child’s video material. These important protections do not mean that all CCLAS data is restricted from public access: A small number of CCLAS transcripts with audio files are available publicly through PhonBank (<https://phonbank.talkbank.org/access/Other/Cree/CCLAS.html>).

I have obtained the requisite permission to access and research the CCLAS corpus. In January 2018, CCLAS leaders Dr. Julie Brittain and Yvan Rose invited me to the project site at

Memorial University of Newfoundland. During May and June 2018 I spent six weeks in St. John's working in-person with the CCLAS team. At the conclusion of this period, Brittain and Rose gave me copies of the CCLAS video recordings as well as permanent ongoing access to the XML files of the corpus, which are stored on a private, protected server at Memorial University and can be updated remotely. I also have a letter of support from Dr. Brittain, dated November 2018 (see the Appendix), which confirms that I have access to the CCLAS corpus.

4.2.2.2. *Language consultants*

The other invaluable source of information for this project comes from language consultants who are native speakers of NEC and have made major contributions to the CCLAS project: Margaret and Darlene Bearskin. Each consultant is an NEC-English bilingual, was born and raised speaking NEC, is an expert in Cree language and culture.

Margaret (a codename she requested) has been part of the CCLAS team for years, and we worked together in 2018 and 2019. She has requested anonymity, so I will not provide additional details. Darlene was a vital member of the CCLAS team during the initial years of data collection and processing, and after several years away from the CCLAS project, she and I worked together in June 2019.

All work with language consultants was done under the approval of the Institutional Review Board at the University of Hawai'i at Mānoa. With each consultant I reviewed an oral consent form and recorded their responses. Importantly, no one was ever asked to sign anything, and the form also provides consultants with the option to revise or revoke their consent in the future. Each consultant retained the original copy of the informed consent document with their responses, and I kept a photograph of the form.

My work with each language consultant consisted largely of reviewing child utterances from the CCLAS corpus. Together we reviewed selected portions from the corpus, most often constructions sampled for this dissertation that seemed particularly important or difficult for me to understand on my own. We watched these selections together and discussed how adults might communicate the meanings that children were expressing, and I elicited adult-like targets for child utterances and for related linguistic structures and constructions. With the permission of these consultants, I audio-recorded our work together and made digital notes and transcriptions. These sessions generated a unique form of NEC language documentation, with metalinguistic

observations and commentary from native speakers on child and adult speech, represented in high-quality audio recordings with accompanying notes/transcriptions.

The audio recordings are stored as WAV files and the notes/transcriptions as PDF files. These PDF documents contain timestamps throughout, which point to specific examples and discussions with the WAV files. I deliberately chose this method for language documentation over using more modern software like ELAN, because I have found that a WAV-and-PDF file combination is more accessible to range of audiences and requires no specialized training to use.

The recordings and notes from our sessions are all archived in the publicly available Henke Collection within Kaipuleohone, the digital language archive of the University of Hawai'i (<https://scholarspace.manoa.hawaii.edu/handle/10125/58811>). This collection contains more than 30 hours of recordings with notes/transcriptions from our work for this dissertation. Because the CCLAS corpus is protected by privacy restrictions, I reviewed each audio recording and edited out any mention of personal information pertaining to people represented in the corpus, along with any incidental capturing of audio from the video files while we reviewed the corpus. The notes/transcriptions were similarly redacted before archiving. Lastly, I integrated the information from our sessions directly into the master database for the CCLAS corpus, which added targets and notes for hundreds of utterances.

4.2.3. The sample for this dissertation

The CCLAS corpus contains recordings of three different children, each of whom is codenamed to protect the privacy of the child and her/his family. The codenames for the three children are Ani, Daisy, and Billy.

4.2.3.1. *The children and their linguistic environment*

This section provides some necessary background about the linguistic environment for the three child participants in this dissertation. The three children are each acquiring NEC as a first language in a community where NEC, English, and French are present. Assessing the linguistic environment for the three children is a very complicated matter. No dedicated study has examined the linguistic ecology of Chisasibi, and such a project is beyond the scope of this dissertation. However, some existing sources do provide commentary and analysis from community members as well as researchers familiar with Chisasibi.

Chisasibi has a population of approximately 5,000 people, of whom about 300 are non-Indigenous (Grand Council of the Crees, 2019a). At the time of CCLAS data collection during November 2004–May 2007, Chisasibi was “predominantly Cree-speaking”, with Cree still acquired as a first language (Brittain et al., 2007, p. 32). Aspects of Cree-language dominance in the village still hold today: In 2016, 2,475 residents of Chisasibi reported “Cree” as their mother tongue, with only 200 for English and 170 for French (Statistics Canada, 2016a). Furthermore, 2,425 reported Cree as the language spoken most often at home. However, English is a significant presence in Chisasibi, and 1,465 people reported English as the other language regularly spoken at home. Just 35 people reported using French. Monolingual speakers (primarily elderly) of NEC still do live in Chisasibi (Brittain & MacKenzie, 2010), but the survey evidence clearly indicates that some degree of Cree-English bilingualism is the norm throughout the community today and was likely also the case in 2004–2007. In my experience in Chisasibi, French is used primarily by non-Cree francophone Canadians who have come to work in the village. The presence of French in the CCLAS corpus is essentially non-existent.

In this environment, it is not clear exactly how much English each of the three children encounter. CCLAS-associated research asserts that all three children are being raised with Cree as the language of the home, but English elements as well as mixed Cree and English occur throughout their speech. Some clues emerge from Master’s theses coming out of CCLAS, but in general these works overtly cite no sources. Swain (2008, p. 29) reports that Ani is not bilingual and receives exposure to English primarily through television. Terry (2010, p. 64) contends that NEC is generally the language of Ani’s home, and he says that although both of her parents speak English, the amount of English in child-directed speech in Ani’s CCLAS data is “minimal”. Pile (2018, p. 27) reports that Billy is raised in a Cree-language home, with his exposure to English coming principally from three sources: songs at daycare, a television in the home, and a monolingual English family member (who does not live in Billy’s home). No existing CCLAS publications have commented on the presence of English in the linguistic environment for Daisy, the third child in the present study.

Aside from these anecdotal assessments, two CCLAS studies directly examine the presence and influence of English within the developing grammars of Ani and Billy (no such treatment has been carried out for Daisy). Bryant (2013) analyzes Ani’s phonology, comparing the child’s production of consonants in NEC and English forms. Bryant concludes that Ani has a single,

NEC phonological system operating in her grammar, one that governs Ani's production of NEC and English words. Pile (2018) presents a longitudinal case study on the presence and influence of English elements in Billy's speech. In examining Billy's production of utterances with English elements as well as those with mixed NEC and English, Pile concludes that "Billy appears to have acquired a grammar for the Cree language that is largely devoid of English rules or structures" (2018, p. 169). In other words, despite the presence of English (to whatever extent) in the Ani and Billy's linguistic environments, the only existing scientific inquiries so far have shown that each child's grammar is Cree dominant, with English elements present but subject to Cree phonology and morphosyntax.

In summary, in the absence of a lengthy and comprehensive sociolinguistic analysis, the present study operates upon the assumption that the three child participants are being raised with NEC as their mother tongue in predominantly Cree-language home environments within a Cree-dominant community. Each child indisputably has some exposure to English, and English elements appear in their speech, but these elements exist within a Cree grammar.

4.2.3.2. *Sessions chosen for analysis*

This section explains the sampling rationale and procedure for choosing recording sessions from throughout the CCLAS corpus.

The Ani subcorpus contains 37 video recordings, representing her development from age 1;09.12 to 4;03.07. The Daisy subcorpus contains 32 videos covering age 3;08.10 to 5;11.25. The Billy subcorpus is the smallest in terms of the number of recordings and the age range covered, consisting of 19 videos from age 4;04.12 to 5;10.20. This is the first project to investigate the speech of all three children in the CCLAS corpus, which meant making sampling decisions across a much wider swath of data, and the scope of this investigation required particular and judicious sampling decisions.

As detailed in §4.2.2.1.1, every video in the corpus has an accompanying XML file. At a minimum, each utterance is accompanied by: 1) a representation of the utterance in NEC roman orthography (in the Orthography tier); and 2) an English translation for the utterance (the Translation tier). However, not every recording session in the corpus has been fully processed by CCLAS. This means that only some video files have XML files containing completed entries for the following for each utterance: 3) morpheme-by-morpheme parsing and glossing for each

utterance (Morpheme Meaning and Morpheme Type tiers); glossing for those morphemes; 4) IPA transcriptions, with morpheme-by-morpheme parsing, of child speech; and 6) IPA transcriptions, with morpheme-by-morpheme parsing, of adult-like targets for child speech (IPA Actual, IPA Target, Actual Morphology, and Target Morphology tiers). Furthermore, as is expected with child language, there is a range of quality for the interactions represented across the corpus. An individual child may be gregarious and very linguistically engaged in one recording session and then be more withdrawn and reticent in the next.

Therefore, this dissertation employs a sample of convenience that aims to strike a balance between choosing the highest-quality video recordings that have the most extensive XML annotations and choosing videos to cover the widest and deepest range of development for each child. The sample for each child in this dissertation begins with the first video consisting of a quality enabling confident interpretation and analysis, and it ends with the last such video in that subcorpus. In between these two poles, I selected the best quality video every one-to-two months. Occasionally there are gaps larger than two months between videos, but this is either because the corpus does not contain a recording session here or because the existing video does not enable a confident interpretation and analysis.

This dissertation samples 15 videos for Ani (10:01:58 in total recording time), beginning at age 2;01.12 and ending at 4;03.07, which is represented in Table 4.1. The sample for Daisy comprises 14 video recordings (8:59:29 in total recording time) between age 3;08.10 and 5;10.02, as shown in Table 4.2. The Billy sample consists of 11 videos (6:45:24 in total recording time) from age 4;05.04 to 5;10.20, tallied in Table 4.3. The age range for each child is represented in Table 4.4, in order to provide a visualization of where the sub-samples overlap and where they are each distinct.

Table 4.1: The sample for Ani

<u>Session name</u>	<u>Child age</u>	<u>Session length</u>
A1.03	2;01.12	38:47
A1.06	2;03.24	37:08
A1.08	2;04.22	47:57
A1.09	2;05.14	35:13
A1.12	2;07.06	37:03
A1.15	2;08.23	51:10
A1.17	2;09.28	48:40
A1.20	2;11.16	36:30
A1.21	3;00.02	41:50
A1.24	3;02.05	38:16
A1.26	3;04.09	40:10
A1.30	3;06.23	31:52
A1.33	3;08.24	30:16
A1.35	4;00.13	36:45
A1.37	4;03.07	50:21

Notes. Session name = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 4.2: The sample for Daisy

<u>Session name</u>	<u>Child age</u>	<u>Session length</u>
B1.01	3;08.10	35:42
B1.02	3;09.01	14:00
B1.03	3;09.22	37:13
B1.04	3;11.11	58:29
B1.05	4;00.00	37:36
B1.08	4;02.06	50:25
B1.11	4;04.04	40:03
B1.14	4;06.02	41:58
B1.17	4;07.28	43:27
B1.20	4;10.03	43:24
B1.24	5;00.20	34:30
B1.27	5;04.12	33:29
B1.30	5;07.03	32:27
B1.31	5;10.02	36:46

Notes. Session name = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 4.3: The sample for Billy

Session name	Child age	Session length
B3.02	4;05.04	40:24
B3.04	4;06.08	42:25
B3.06	4;07.27	43:53
B3.07	4;08.21	33:55
B3.09	4;10.08	36:28
B3.11	5;00.13	33:05
B3.13	5;02.12	24:24
B3.14	5;03.22	28:44
B3.15	5;05.00	41:09
B3.17	5;06.27	36:15
B3.18	5;10.06	44:42

Notes. Session name = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 4.4: Age range for each child

Child name	Age 2;0	Age 3;0	Age 4;0	Age 5;0	Age 6;0
Ani	████████████████████		████████████████████	████████████████████	
Daisy	████████████████████		████████████████████	████████████████████	
Billy	████████████████████		████████████████████	████████████████████	

Notes. The dark line represents the age range for the child in the sample for this study.

4.2.3.3. Identifying nominals in the CCLAS corpus

With the sample selected for this dissertation, the next task was identifying nominals within the sample. This study focuses on eight distinct categories of nominals that occur within the corpus:

1. **NEC common nouns:** This includes nouns and nominalizations.
2. **NEC demonstratives:** This includes various stems and inflected forms for ‘this’, ‘that’, and ‘that (over there)’.
3. **NEC pronouns:** This includes personal pronouns (e.g., *nîyi* ‘I, me, my, mine’) as well as two indefinite/interrogative pronouns *awân* (‘who, whom, someone, a person’) and *châkwân* (‘what, something, a thing’).
4. **Proper noun and names:** These are considered in a separate category, following Pile (2018, pp. 36–40), although my categorizations differ from hers. In this study, elements are only considered language specific if they have analogs in both NEC and English, which gives speakers a choice of which form to use. Otherwise, proper nouns and names

searches of the corpus, and it also allowed me to make decisions about including or excluding utterances as I progressed. Altogether, the process of manually scanning a recording session, making including/excluding decisions, and coding all nominals took about one hour for 100 to 200 utterances, and I could finish coding a given session in two work days.

4.2.3.4. *Including/excluding utterances*

Once an utterance with a potential nominal was identified, I made a series of decisions about which utterances to include for analysis and which to exclude. Because the present project focuses on nominal inflection, my overarching goal was determining whether a speaker had indeed produced the nominal(s) represented in the Orthography tier. This was a question of deciding whether phonetic production provided enough evidence to justify the projected target.

Some exclusions were simple and clear decisions. A given utterance was excluded if it had no entry in the Orthography or Translation tier, or if a significant portion of the utterance was untranscribed or untranslated. Utterances that were unclear or difficult for me to pick out from the video recording were also excluded. Repetitions were excluded, whether they consisted of a speaker repeating her/himself or repeating another speaker. I excluded utterances that were clearly (or probably) rote learned, such as recitations involving counting or singing songs. Outside of these straightforward cases, I had to review each remaining utterance to decide if it should be included for analysis.

As the first step, I listened to an utterance several times while comparing the phonetic production of the speaker to the orthographical representation of the utterance. If I felt confident that a given phonetic production of a nominal matched its orthographic representation, then I included that utterance for analysis. Of course, this was a subjective process, but I relied upon my fieldwork experience and understanding of NEC phonetics and phonology to decide whether the intended target had been produced.

After this first step, in some cases I still did not feel confident in deciding whether a speaker had indeed produced what was projected in the Orthography tier. In such cases, I resorted to one of three different options for judging questionable utterances.

The best option was checking with a native speaker of NEC during fieldwork. I was able to do this for many questionable utterances, but this was not always a feasible path.

The second option was to check my perception of the utterance against the entry in the IPA Actual tier. If that IPA transcription was close to my perception, and the transcription indicated reasonable phonetic evidence for a nominal, then I included that utterance for analysis. However, this approach entails its own challenges. First, only child utterances in the CCLAS corpus may have an IPA transcription, so this option is not available to evaluate adult production. Second, not all sessions in the corpus have IPA transcriptions for every child utterance. Third, sometimes I did not agree with the existing IPA transcription for an utterance. As Brittain et al. (2007) explain, these transcriptions are not done by native speakers of NEC, and so on occasion my perception differed from the transcriber’s representation of an utterance.

The final option then was exclusion: If I could not check a questionable utterance with a native speaker of NEC, and if I could not find and agree with an IPA transcription for that utterance, then I excluded it from the analysis. The next stage of analysis involved coding each nominal token in the utterance.

4.2.3.5. *Defining “type” and “token”*

Children acquiring nominal inflection in NEC face the task of analyzing nominal stems, abstracting grammatical properties across classes of stems, and learning the inflectional properties and components associated with each class. Therefore, this dissertation operationalizes “type” as an individual nominal stem and “token” as occurrences of that nominal stem, whether inflected or uninflected. Examples (2–4) are considered three tokens (*nikâwî*, *chikâwî*, *ukâwîh*) of one type (*-kâwî*).

- (2) $\sigma b \Delta$
 nikâwî
 ni-kâwî
 1-mother
 ‘my mother’

(3) ɾb̥Δ̆
 chikâwî
 chi-kâwî
 2-mother
 ‘your mother’

(4) ɔ̆b̥Δ̆"
 ukâwîh
 u-kâwî-h
 3-mother-3'
 ‘her/his mother’

This approach accords with convention in L1 acquisition research, where it is generally understood that children pay particular attention to the frequency of stem types in the acquisition of inflection (see, e.g., the brief review in Clark, 2009, pp. 184–186). My operationalization also is congruent with previous CCLAS work. Johansson (2012, p. 136), for instance, construes verb “type” as an individual verb root and a verb “token” as an inflected occurrence of that root.

Furthermore, this approach reflects the present study’s focus on how children acquire nominal inflection, which necessarily centers upon their knowledge of the properties of nominal stems and how these properties relate to their inflectional capabilities. For example, a child needs to learn that (2–4) each contain the same nominal stem *-kâwî* ‘mother’, which is an inalienably possessed noun stem belonging to the animate class, and that this stem inflects with a prefix indicating the person of the possessor. Moreover, children must learn that any noun stem in NEC becomes obviative when it has a third-person possessor (4), and that the animacy of this noun stem along with a property of coreference vs. disjoint reference determines the kind of obviative marking that stem receives.

Although this dissertation centers on corpus data, I employ an operationalization of “type” and “token” that differs considerably from the norm in the field of corpus linguistics (see, e.g., McEnergy & Hardie, 2012). In corpus linguistics, a type is a unique word form and a token is an instance of that word form. For example, this approach would consider (2–4) each to contain one type, and each example would be one token of each type.

4.2.3.6. *Coding nominals*

Each nominal token included for analysis was coded along several dimensions. Coding values were entered into a single tier in Phon, with individual values separated by commas. When a single utterance contained more than one nominal, the coding values for each nominal were separated by a semicolon. Each of the following values were coded for each nominal token:

1. **Type:** Records the stem type for the nominal.
2. **Token:** Lists the actual occurrence of the type, whether inflected or not.
3. **Possessive construction type:** Because this dissertation is primarily concerned with possessive inflection, this category assigns a code for the type of possessive construction. If the nominal did not occur in a possessive construction, it received a value of “no”. The other possible values for this category are listed and defined in Tables 4.6–4.8 in Appendix A. These values reflect only the types of constructions that actually appeared in the sample, not the full extent of logical possibilities.
4. **Nominal category:** Assigns a code for one of eight distinct categories of nominals. Values for this category are listed in Table 4.9 in Appendix A.

From here the coding procedure depended upon the nominal category, because different categories have distinct inflectional possibilities. Tables 4.10–4.17 in Appendix A lay out and describe the possible values for each variable, with one table per nominal category.

4.2.3.7. *Coding: Homophony, syncretism, and variation*

As Chapter 2 and the forms in Tables 4.10–4.17 indicate, there is considerable homophony and syncretism within the inflectional paradigms for NEC nouns, demonstratives, and pronouns.

For example, both animate and inanimate nouns, when they are proximate and singular, take no overt suffix ending. With nouns inflected for possession, second-person plural possessors and third-person plural possessors are indexed by the same suffix: *-(i)wâu*. The inanimate obviative singular noun suffix *-iyiu* is homophonous with the obviative possessor suffix *-iyiu*. Collette (2014) has demonstrated that these two versions of *-iyiu* appear in distinct slots within the nominal inflection template: The inanimate obviative singular noun suffix cannot appear on a

The only existing description of NEC demonstratives (Junker & MacKenzie, 2003) did not account for this variation, and undertaking such an accounting is beyond the scope of the current study. However, my own work with speakers of NEC has shown that they consider the two variant forms of a demonstrative to be the same form. In a conversation with Darlene, for example, she explains that *aniyâh* is “just the “short form of *aniyâyiuh*” (Darlene, REH1-030, 22:12). A speaker may even use each variant without noticing the difference between the two forms. Accordingly, this dissertation treats each variant equally: If an animate obviative demonstrative token occurs with *-(i)yâh*, then it is coded the same way as if it had occurred with *-(i)yâyiuh*.

As with nouns, there is no number distinction for animate obviative demonstratives: They take either *-(i)yâh* or *-(i)yâyiuh*, with neither form overtly expressing singular or plural. These forms are homophonous with the suffix for the inanimate obviative plural: *-(i)yâh* / *-(i)yâyiuh*. Examples (7–8) illustrate this ambiguity, which can only be resolved through context.

(7) <σ↳"

 aniyâh

 ani-yâh

 DEM.DIST-3'/0'p

 ‘that (3’)’ / ‘that (0’p)’

(8) <σ↳↳°"

 aniyâyiuh

 ani-yâyiuh

 DEM.DIST-3'/0'p

 ‘that (3’)’ / ‘that (0’p)’

NEC pronouns also involve similar considerations. The third-person personal pronoun is the same for proximate and obviative forms: *wîyi*. Unlike the personal pronouns, interrogative pronouns take suffixes to indicate animacy, number, and obviation. Here the suffix for the animate obviative is homophonous with the suffix for the inanimate obviative plural: *-iyiuh*. However, the ambiguity is resolved by the nominal stem: *awân* can only be used for

Table 4.5: Samples of coding for utterances in Phon

Utterance	Entry in Phon coding tier
u=kâwî=h 3=mother=NA.OBV 'her mother'	kâwî,u=kâwî=h,c1,1,nad,3',p3,nim,ppn
âi mîn chit=ikuhp HES again 2=coat 'eh, your coat too'	akuhp,chit=ikuhp,c1,1,ni,0,p2,nim,ppn
nîyi û 1 DEM.PXL 'this is mine'	nîyi,nîyi,c5,3,pro1,prons;û,û,c5,2,eq,û,dns
u=uncle=im=h 3=uncle=POSS=NA.OBV 'her uncle'	uncle,u=uncle=im=h,m2,8,eng,p3,yesim,nopp,3',nopl,nos

Notes. Utterances are represented as they are in Phon, with the equals sign to separate morphemes. The first line is the utterance in NEC orthography, the second contains morpheme glosses, and the third is an English translation.

4.2.4. Approaching the RQs

This section reviews the RQs presented at the beginning of this chapter and describes how this dissertation will answer each. Because possession represents the richest and most complex range of inflectional possibilities for nouns in NEC, the core of answering the RQs rests in identifying the inflectional patterns present in expressions of possession. For comparison, when necessary, I also consider patterns for nominals outside the context of possession.

This dissertation examines nominal inflection by proceeding through the affixal template for the NEC common noun: Chapter 6 examines the possessor prefix; Chapter 7 analyzes the possessive suffix *-im* in the Suffix 1 position; Chapter 8 looks at the Suffix 2 and Suffix 3 positions together, because the data here are relatively scant; and Chapter 9 concludes by exploring final Suffix 4 position, where competing affixes express meanings pertaining to animacy, number, obviation, and the locative. Each chapter provides part of the answer to each RQ.

RQ1 Which aspects of possessive inflection are present in adult input to children within the CCLAS corpus?

This dissertation uses the child-directed speech in the CCLAS corpus as a representation of the adult input received by children acquiring NEC. The adult in the CCLAS corpus is a member of

the same community as the children, and each of the children is very comfortable and familiar interacting with the adult.

Of course, the adult input in the corpus represents just a slice of each child's linguistic experience and exposure. Furthermore, it is impossible to compare the adult input in the CCLAS corpus to the input that other children receive in the community, because such data does not exist. All of this imposes a clear constraint on the conclusions this particular study can draw about the relationship between input and child linguistic production. However, this type of constraint pervades any acquisition study relying upon naturalistic data. The fact remains that the adult input in the CCLAS corpus provides the best possible direct representation of what an NEC-acquiring child hears.

To answer RQ1, this study identifies and codes all nominal tokens produced by the adult during her interactions with each of the three children throughout the sampled recording sessions. This coding includes distinguishing nominals inside and outside of possessive contexts as well as distinguishing bare nominals from those inflected for the various categories described in Chapter 3. The key product here is a type/token count of all nominals and the inflectional categories marked on nominals in adult input. For each chapter 6–9, I review the adult's production relevant to that particular affixal position.

RQ2 How is possession expressed before the emergence of possessive inflection?

This question primarily focuses on the youngest child, Ani, but comparisons are drawn to adult speech as well as production by Daisy and Billy.

As previous research has shown (Henke, 2019b), Ani's earliest expressions of possession do not involve inflected nouns: She instead produces possessor-only constructions or constructions with demonstratives as possesseees. This dissertation builds upon this previous work and provides a richer picture of the emergence of possession in NEC.

To answer RQ2, this study considers all possessive constructions from Ani. It traces Ani's initial expressions of possession up through her final recording sessions, paying particular attention to the types and tokens of possesseees that the child produces. The answers to RQ2 primarily emerge in Chapters 6 and 7, which focus on the most common overt inflectional elements in NEC possessive constructions: The possessor prefix and possessive suffix *-im*.

RQ3 What is the path of emergence for the inflectional categories involved in possession?

RQ3 represents the core of the dissertation. All nominals in the sample have been sampled and coded using the procedure described in §4.2.3.6. This coding accounts for the full range of possibilities across inflectional categories. Importantly, by considering nominals outside of possession as well, this coding enables tracing the path of any given inflectional category (or interaction of categories) over time.

The answers to RQ3 unfold across Chapters 6–9, as I look at each child’s production of elements within each slot in the affixal template. For each slot, I consider each child’s types and tokens of noun affixes, and when necessary, draw comparisons to their production of types and tokens of uninflected and inflected demonstratives and pronouns.

The coding scheme also covers errors of omission and errors of commission, both of which are common foci in language investigation research (see, e.g., Ambridge & Lieven, 2011). For each chapter focused on a particular affixal slot in the nominal template, I review the errors each child may produce in that slot and discuss their implications.

4.2.5. Defining productivity

The present study is largely concerned with determining when and how each child represented in the dataset demonstrates productive knowledge of the affixal positions and morphemes within the template for noun inflection. This is far from a straightforward affair. As Allen (1996, p. 49) puts it, “One of the most difficult issues in research with spontaneous speech data is deciding whether or not a certain structure or morpheme is productive for the child in question”.

Therefore, this dissertation relies upon previous studies and considers productivity using criteria derived from Allen (1996), Brown (1973), Ketrez and Aksu-Koç (2009). For each child, a particular morpheme will be considered productive at a particular age point when the following four criteria are satisfied together:

1. The child has used the morpheme in two successive recording sessions. This standard departs from Brown’s criterion of “six consecutive sampling hours” (1973, p. 12), because the recording sessions sampled for the present study are more spread apart than

those for Brown’s study, where children were recorded every week or two (1973, pp. 51–52); and

2. The morpheme has been used on at least two different noun types; and
3. The child has used at least two such noun types in at least one other word form, without the morpheme of interest; and
4. The child has used the morpheme correctly in 80 percent of obligatory contexts at that age point. This 80-percent threshold compromises between Pedro’s (2015) 75-percent threshold for Q’anjob’al Maya morphology and Brown’s (1973) 90-percent threshold for English morphology.

Following Allen (1996), for a given morpheme I will also discuss any errors or self-corrections that a child may produce, which also provide insight into the child’s acquisition. As a final point, mixed-language possessives present a challenge for determining whether inflectional marking is obligatory. For the present study, I consider a morpheme such as a person prefix to be obligatory *only if* the possessee is carrying another morpheme within the NEC inflectional template for possession. The presence of another morpheme indicates that the child is attempting to inflect the possessee and has produced an error in the process.

For example, the production of the possessive suffix *-im* in (11) indicates that Ani is attempting to inflect English noun stem *bed* with NEC morphology. She does indeed produce *-im* but omits the required person prefix *u-* to mark the third-person possessor (Margaret, REH1-015, 23:19). Therefore, Ani’s possessee in (11) is considered to have an error of omission for the person prefix and adult-like production of the possessive suffix.

- (11) ·◁∧^l L̄ L̄▷↗ ▷V∩^l σL_x
 Wâpim mâ mâuyâ ubedim nimâ
- | | | | | | |
|---------|----------------|------|------------|------------|------|
| Target: | wâpim | mâ | mâu-yâ | u-bed-im | nimâ |
| Actual: | wâpim | mâ | mâu-∅ | ∅-bed-im | nimâ |
| | look.at.it.IMP | EMPH | DEM.PXL-0’ | 3-bed-POSS | NEG |
- ‘Look, this one here, it’s her bed, right?’ (Ani, A1.35, 4;00.13, 02:58)

Chapter 5: The landscape of the data

Chapters 6–9 delve into the details of nominal inflection in adult input and child speech. First, however, this chapter describes the basic landscape and distribution of nominals in the data. As Chapter 2 describes, the category of nominals in NEC includes nouns, demonstratives, and pronouns. §5.1 overviews nominals in child-directed speech, and the ensuing sections each provide a similar survey of data for each of the three children: Ani (§5.2), Daisy (§5.3), and Billy (§5.4). Each section is structured the same, to facilitate comparisons between speakers.

5.1. Overview: Adult input

This section describes basic patterns pertaining to nominals in the adult input throughout the entire dataset for the present study. §5.1.1 tallies nominal tokens in child-directed speech, including tokens across all eight nominal categories. §5.1.2 turns the focus to nouns, describing the distribution of types and tokens across NEC, English, and mixed-language nouns. §5.1.3 quickly surveys the distribution of nouns across both animacy categories, and §5.1.4 compares numbers of inflected and uninflected nouns. §5.1.5–§5.1.6 shift the lens to possessive constructions in the adult input, reviewing types of constructions as well as types and tokens of nouns as possessors. §5.1.7 briefly summarizes major findings.

5.1.1. All nominals in adult input

Across the entire sample, the adult produces 17,181 total utterances which contain 8,227 total nominal tokens. Numbers per subcorpus are tallied in Table 5.1. Tables 5.61–5.63 in Appendix A detail adult nominal production per recording session within each child’s subcorpus.

Table 5.1: Adult nominal token production

<u>Subcorpus</u>	<u>Utterances</u>	<u>Nominal tokens</u>	<u>Nominals per utterance</u>
Ani	6,758	3,309	0.49
Daisy	6,130	2,644	0.43
Billy	4,293	2,274	0.53
Totals	17,181	8,227	0.48

Notes.

Since NEC is a polysynthetic language where most arguments are bound to the verb, an utterance may lack overt, free-standing nominals. The adult produces 0.48 nominals per utterance across the dataset (Table 5.1). This means, on average, that just about half of all utterances in child-directed speech contain one nominal.

The label “nominal” here includes eight different categories of word: NEC common nouns, demonstratives, and pronouns; proper noun and names; English common nouns, demonstratives, and pronouns; and mixed-language nouns that contain both NEC and English elements. Table 5.2 tallies the numbers of tokens for each category of nominal in the adult input across the sample, ranked from most to least. The present study is primarily concerned with nouns, which represent the most extensive possibilities for nominal inflection in NEC. Two important patterns emerge from these calculations.

Table 5.2: Adult production of nominal categories

Nominal category	Tokens	Proportion of tokens
NEC pronoun	2,302	0.28
NEC demonstrative	2,183	0.27
NEC common noun	1,814	0.22
Proper noun or name	1,585	0.19
English common noun	289	0.04
Mixed-language noun	34	< 0.01
English pronoun	19	< 0.01
English demonstratives	1	< 0.01
Total	8,227	1.00

Notes. NEC = Northern East Cree.

First, the balance of nominal input is overwhelmingly NEC. Proper nouns and names are primarily language neutral, labelling individual people and places in the children’s lives. Outside of this category, NEC nominals occupy 6,299/6,642 (94.84 percent) of total tokens. The adult uses English in a small minority of her nominal production, and so the children in the sample generally hear NEC signifying referents in their interactions.

Second, nouns occupy a minority of overall nominal input. This includes NEC and English common nouns as well as mixed-language nouns. Instead, the lion’s share of nominal input consists of pronouns, demonstratives, and proper nouns and names. Although adult speech contains 2,137 total noun tokens, this constitutes just about 26 percent of nominal production. The following section describes the overall presence of nouns in child-directed speech.

5.1.2. All nouns in adult input

Table 5.3 calculates the number of adult noun tokens per subcorpus, with tallies of all nominal tokens included for comparison. Tables 5.64–5.66 in Appendix A detail adult noun token production per session.

Table 5.3: Adult noun token production

Subcorpus	Utterances	Nouns	Nouns per utterance	Nominals	Nominals per utterance
Ani	6,758	847	0.13	3,309	0.49
Daisy	6,130	634	0.10	2,644	0.43
Billy	4,293	656	0.15	2,274	0.53
Totals	17,181	2,137	0.12	8,227	0.48

Notes.

These numbers uncover another striking pattern: Child-directed speech contains an overt, free-standing common noun only about once every ten utterances. This is four times less than the proportions for all nominals per utterance. The proportion of nouns per utterance in child-directed speech within NEC is relatively stable across the three subcorpora as well, and so each child has about the same chance to encounter nouns in input. As a point of cross-linguistic comparison, child-directed speech in Korean contains approximately 12 nouns per 100 utterances (Choi & Gopnik, 1995).

For easy reference, Table 5.4 breaks down total common noun production into the three nominal categories involved: NEC, English, and mixed-language. The major pattern evident in this data is that the adult's noun tokens are overwhelmingly NEC only: 1,814/2,137 (84.89 percent). As with overall nominal token production, NEC dominates noun input. English again represents a small minority of noun tokens.

The inquiry so far has concerned only tokens, and yet types play an even more crucial role in the acquisition of inflection. Table 5.5 breaks down the adult's common noun production into types per category, retains the token numbers from Table 5.4, and adds a type-token ratio calculation for additional context. Adult input overall contains 391 noun types across NEC, English, and mixed-language common nouns. Shifting the lens to noun types reveals different patterns in child-directed speech.

Table 5.4: Adult production of common noun tokens

Nominal category	Tokens	Proportion of tokens
NEC noun	1,814	0.85
English noun	289	0.14
Mixed-language noun	34	0.02
Total	2,137	1.01

Notes. NEC = Northern East Cree. The column “Proportion of tokens” adds up to over 1.00 because of complications rounding to two, and even to three, decimal places.

Table 5.5: Adult production of common nouns types

Nominal category	Types	Proportion of types	Tokens	Proportion of tokens	TTR
NEC noun	234	0.60	1,814	0.85	0.13
English noun	132	0.34	289	0.14	0.46
Mixed-language noun	25	0.06	34	0.02	0.74
Total	391	1.00	2,137	1.01	0.18

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of that stem, whether uninflected or inflected. TTR = type-token ratio. The column “Proportion of tokens” adds up to over 1.00 because of complications rounding to two, and even to three, decimal places.

First, NEC still takes up a majority of the input (234/391 types, 59.85 percent). Compared to the presence of NEC in noun tokens, though, this seems to be a much-reduced role. Nonetheless, the low type-token ratio, compared to English types, suggests that at least some number of individual NEC noun stems appear quite often in child-directed speech.

Second, English occupies a much higher proportion of input: With 157/391 (40.15 percent) of types, English seems to play a much more significant role in child-directed speech. However, 13 of these types occur in more than one category of noun, because they appear in both English-only and mixed-language nouns: *aunt*, *car*, *chair*, *computer*, *floor*, *friend*, *garbage*, *heart*, *jello* (as a general term for a gelatin snack), *juice*, *princess*, *radio*, and *skidoo* (as a general term for snowmobile). This boosts the apparent presence of English in adult input.

Third, mixed-language nouns are relatively rare in child-directed speech, and they represent a one-way grammatical street: English noun types take on NEC elements, and thus get incorporated into NEC morphosyntax, but no NEC noun types occur in a mixed-language noun.

Finally, the type-token ratios for English and mixed-language nouns are very high compared to NEC nouns, which points to another possible pattern: The adult uses quite a lot of English noun types, but she does not seem to use individual English types very frequently. For a closer

look, Table 5.6 displays the top 25 noun types (in terms of tokens) for NEC, English, and mixed-language common nouns. Table 5.7 calculates the number of noun types that have just one token.

These numbers confirm what the type-token ratios in Table 5.5 imply. The adult tends to employ a given English noun type just once or twice, and her usage of NEC noun types is much richer. Child-directed speech contains more NEC types, and a given type tends to occur more frequently. This pattern may have particular implications for the acquisition of nominal inflection: A child likely receives more opportunities to abstract inflectional patterns from NEC than from English.

Table 5.6: The most frequent common noun types in adult production

NEC nouns			English nouns		Mixed-language nouns	
Type	Gloss	Tokens	Type	Tokens	Type	Tokens
kâwî	mother	67	daycare	45	Skidoo	3
pîpî	baby	66	Bus	17	Bicycle	2
îch	home	50	skidoo	15	Car	2
misinihîkin	book	49	Jello	8	Friend	2
tâhtipiwin	chair	47	princess	8	Garbage	2
wâpush	rabbit	45	school	6	Jello	2
awâshish	child	42	cheese	5	Juice	2
kûhkum	grandmother	42	horse	5	Television	2
mâtiwâkin	toy, game	42	juice	5	Aunt	1
wîchâwâkin	friend	37	star	5	Basket	1
shîm	younger sibling	36	goalie	4	candy cane	1
pwâchikî	boogeyman	35	hockey	4	Chair	1
utâpânâskw	car, vehicle	33	castle	3	Computer	1
akuhp	coat	32	Eggo	3	Dessert	1
chishâyâkw	bear	32	gym	3	Floor	1
chishâyâkushish	bear cub	25	Kinex	3	Ghost	1
piyichîs	pants	24	orange	3	Heart	1
achimushish	puppy	22	pen	3	Kraft Dinner	1
atihkw	caribou	22	pencil	3	Mommy	1
nimâs	fish	22	pop	3	Princess	1
minihkwâkin	cup	21	puppy	3	Radio	1
mischisin	shoe	21	teacher	3	Room	1
pûshî	cat	21	toy	3	Sandwich	1
shchîshikw	eye	21	var.(20)	2	Sister	1
pichiwiyan	shirt	20			Spider	1

Notes. NEC = Northern East Cree. *Var.* = Multiple noun types occur with the same number of tokens, with the number of types is indicated in parentheses.

Table 5.7: Adult production of hapax legomena

Nominal category	Total noun types	Hapax	Proportion of hapax
NEC noun	234	68	0.29
English noun	132	89	0.67
Mixed-language noun	25	17	0.68
Total	391	174	0.45

Notes. NEC = Northern East Cree. Hapax = hapax legomenon, a noun type that occurs with just one token in the dataset.

5.1.3. The animacy of nouns in adult input

Much of noun inflection in NEC hinges upon the grammatical animacy of a noun. All nouns in NEC are categorized as either **animate** or **inanimate**, a distinction that hinges largely—but not completely—upon biological animacy. Table 5.8 counts each NEC noun type and token in child-directed speech, divided into the two major animacy categories: animate and inanimate.

Table 5.8: Adult production of common nouns types, per animacy category

NEC noun animacy	Types	Proportion of types	Tokens	Proportion of tokens	TTR
Animate	112	0.48	1,042	0.57	0.11
Inanimate	122	0.52	772	0.43	0.16
Total	234	1.00	1,814	1.00	0.13

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of that stem, whether uninflected or inflected. TTR = type-token ratio. The column “Proportion of tokens” adds up to over 1.00 because of complications rounding to two, and even to three, decimal places.

These numbers show that adult production of noun types is split almost evenly between the two animacy categories. The type-token ratio does not differ considerably between the animacy categories either. The balance of tokens weighs more heavily in the favor of animate nouns, but this is most likely a consequence of pragmatics: The adult and children tend to talk a lot about animate referents, such as people and animals. All in all, child-directed speech contains a relatively well-balanced mix of nouns from both animacy categories.

5.1.4. All inflected vs. uninflected nouns in adult input

The present study traces the acquisition of NEC nominal inflection, and so a crucial issue is determining the extent to which children have opportunities to abstract NEC inflectional patterns from input. The next several chapters will explore each slot in the inflectional template for nouns, and so this section provides a bird’s-eye view of inflection in child-directed speech.

The adult produces 234 NEC noun types (1,814 total tokens) throughout the dataset. Seven of these tokens have errors in inflection, and so they have been excluded from the ensuing description. Table 5.9 tallies the number of types and tokens that occur in inflected and uninflected forms in adult input. A little over half of all on-target NEC noun tokens are inflected to some extent (976/1,807, 54.01 percent).

Table 5.9: Adult production of inflected vs. uninflected NEC nouns

Inflected		Uninflected	
Types	Tokens	Types	Tokens
151	976	163	831

Notes. NEC = Northern East Cree.

Table 5.10 breaks down the noun production from Table 5.9 across all three possible inflectional contexts: Noun types that only occur in inflected forms, those that never occur in inflected forms, and those that appear in inflected and uninflected forms.

Table 5.10: Adult production of NEC nouns across inflectional contexts

Occur inflected only		Occur uninflected only		Occur in either context	
Types	Tokens	Types	Tokens	Types	Tokens
71	509	83	262	80	1,036

Notes. NEC = Northern East Cree.

Only about one-third of noun types are never inflected (83/234, 35.47 percent), and even fewer are only inflected (71/234, 30.34 percent). The remaining noun types occur in either context and comprise a majority of noun tokens (1,072/1,807, 59.32 percent). This means that the input furnishes children with a rich selection of noun types contrasting between their inflected and uninflected forms. Furthermore, all 25 types (34 tokens) of mixed-language nouns in adult input are English stems inflected with NEC morphology. That gives children additional opportunities to contrast elements with and without NEC nominal inflection.

5.1.5. All possessive constructions in adult input

The context of possession represents the richest range of inflectional possibilities for nouns in NEC. Table 5.11 calculates the total number of utterances containing a possessive construction, per subcorpus in the dataset. Tables 5.67–5.69 in Appendix A detail adult possessive constructions per recording session.

Table 5.11: Adult possessive constructions

Subcorpus	Utterances	Utterances containing a POSS construction	Proportion of utterances w/ a POSS construction
Ani	6,758	316	0.05
Daisy	6,130	220	0.04
Billy	4,293	258	0.06
Totals	17,181	794	0.05

Notes. POSS = possessive. w/ = with.

Overall, child-directed speech in the dataset contains 794 total utterances containing at least one possessive construction. Each subcorpus has a different number of such utterances, but on average, each child encounters them at a very similar rate: Approximately five percent of adult utterances contain a possessive construction.

A multitude of types of possessive constructions occur throughout the dataset, and so Table 5.12 calculates the number of utterances containing the different types of possessive constructions in child-directed speech. The total of 802 differs from the 794 in Table 5.11, because some utterances contain more than one type of possessive construction.

Two important patterns are evident in Table 5.12. First, NEC-only possessive constructions dominate the input: 780/802 utterances (97.26 percent) contain expressions of possession that use only NEC elements. English-only constructions are rare but do occur in 10 utterances (1.25 percent), and an additional 12 utterances have co-occurring English and NEC elements. Again, though, mixed-language constructions represent a one-way grammatical street: English elements are borrowed in and receive NEC inflection, never the other way around.

Second, the vast majority of possessive constructions in child-directed speech contain an NEC noun: 671/802 utterances (83.67 percent). Despite the fact that NEC nouns constitute a minority of overall nominal input, they maintain a robust presence in expressions of possession. Even when possessive constructions use English nouns instead of NEC nouns, they often occur with NEC possessive inflection 12/22 utterances (54.54 percent).

Table 5.12: Adult utterances containing possessive constructions

Language	Type of POSS construction	Utterances	Proportion
NEC	N only	528	0.66
	PSR + DEM	81	0.10
	DEM + N	63	0.08
	PSR + N	50	0.06
	PSR + DEM + N	30	0.04
	PSR only	28	0.03
ENG	POSS.PRO + N	10	0.01
Mixed-language	ENG.N w/ NEC.INFL	5	0.01
	NEC.PSR + ENG.N w/ NEC.INFL	3	< 0.01
	NEC.PSR + ENG.POSS.PRO + ENG.N w/o INFL	2	< 0.01
	NEC.PSR + NEC.DEM + ENG.N w/ NEC.INFL	2	< 0.01
Total		802	1.00

Notes. Individual nominals co-occurring in a possessive construction are separated by a plus sign <+>. The symbol <w/> means “with”, and <w/o> means “without”. DEM = demonstrative. ENG = English. INFL = inflection. N = noun. NEC = Northern East Cree. POSS = possessive. POSS.PRO = possessive pronoun. PSR = possessor.

5.1.6. All possessee nouns involving NEC inflection in adult input

Given this landscape of possessive constructions, the next critical point is determining the distribution of nouns as possesseees with NEC possessive inflection. Table 5.13 tallies the number of such nouns in the adult input, alongside types and tokens of all nouns for comparison.

Overall the adult uses 91 different types (696 total tokens). NEC noun stems clearly comprise the bulk of this production (84 types, 686 tokens), although a relative handful of English nouns (7 types, 10 tokens) take NEC possessive inflection.

Table 5.13: Adult nouns as possesseees with NEC inflection, throughout the dataset

Nominal category	Nouns as possesseees		All nouns	
	Types	Tokens	Types	Tokens
NEC noun	84	686	234	1814
Mixed-language noun	7	10	25	34
Total	91	696	259	1848

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of a noun stem.

For comparison with nouns outside of possession, Table 5.14 displays the top 25 noun types (in terms of tokens) for NEC possesseees, and lists all types within mixed-language possesseees. The total numbers of tokens for NEC noun types that also occur in the adult’s most frequent

nouns from Table 5.6 are indicated in parentheses in the “Tokens” column. Table 5.14 illustrates a few crucial patterns.

Table 5.14: The most frequent nouns as possessives with NEC inflection, in adult production

NEC nouns			Mixed-language nouns	
Type	Gloss	Tokens	Type	Tokens
kâwî	mother	67 (67)	car	2
îch	home	50 (50)	friend	2
wîchâwâkin	friend	37 (37)	skidoo	2
shîm	younger sibling	36 (36)	aunt	1
akuhp	coat	31 (32)	bicycle	1
pîpî	baby	24 (66)	mom/my	1
piyichîs	pants	22 (24)	sister	1
tâhtipiwin	chair	22 (47)		
shchîshikw	eye	21 (21)		
mischisin	shoe	20 (21)		
pichiwiyan	shirt	19		
tîhchî	hand	18		
îpit	tooth	17		
shtikwân	head	16		
chiskutimâchâsiu	teacher	15		
mushum	grandfather	15		
uhkum	grandmother	15		
shtikwânîpîwî	hair	14		
mâtiwâkin	toy, game	13 (42)		
htiwîkî	ear	11		
misinihîkin	book	11 (49)		
uhtâwî	father	11		
mis	older sister	10		
mîchim	food	9		
tâih	heart	9		

Notes. NEC = Northern East Cree. () = the total number of tokens for this noun type in Table 5.6.

First and foremost, there is major overlap between frequent possessee types and frequent noun types. Part of this is due to the fact that four of the noun types that occur in both lists are inalienably possessed: The stems *kâwî* ‘mother’, *îch* ‘home’, *shîm* ‘younger sibling’, and *shchîshikw* ‘eye’ all must necessarily be inflected for possession. However, seven of the remaining eight noun types are alienably possessed and occur inside and outside possessive

constructions: *akuhp* ‘coat’, *pîpî* ‘baby’, *piyichîs* ‘pants’, *tâhtipiwin* ‘chair’, *mischisin* ‘shoe’, *mâtiwâkin* ‘toy, game’, and *misinihîkin* ‘book’.

For comparison, Table 5.15 tallies the tokens for each alienable noun type as a possessee compared to its tokens as a non-possessee. Some of these types may play a particular role in the input, by providing children with clear contrasts between tokens inflected for possession and those that are not.

Table 5.15: The most frequent NEC alienable nouns, with tokens as (non-)possesseees

Type	Gloss	Total tokens	Possessee tokens	Non-possessee tokens
wîchâwâkin	friend	37	37	0
akuhp	coat	32	31	1
pîpî	baby	66	24	42
piyichîs	pants	24	22	2
tâhtipiwin	chair	47	22	25
mischisin	shoe	21	20	1
mâtiwâkin	toy, game	42	13	29
misinihîkin	book	49	11	38

Notes. NEC = Northern East Cree.

In a second pattern related to frequency of nouns in adult speech, two related forms for ‘grandmother’ may also serve as particular signposts in the acquisition of nominal inflections. The noun *kûhkum* is a lexicalized form of ‘grandmother’, which contains an unanalyzed second-person prefix and possessive suffix (Collette, 2014, p. 257), as in (1). Although it is technically the form for ‘your grandmother’, *kûhkum* is frequently used as a general term for ‘grandmother’ in both child and child-directed speech. In fact, Table 5.6 shows that unanalyzed *kûhkum* is the eighth-most frequent noun type in adult input, with 42 tokens.

- (1) ᑕᕐᑕᕐ
 kûhkum
 k-ûhku-m
 2-grandmother-POSS
 ‘grandmother’ (lit. ‘your grandmother’)

Eventually, children need to analyze the component noun stem *uhkum* ‘grandmother’ from *kûhkum*. Adult input contains 15 tokens of *uhkum* (Table 5.14) that are inflected in context-appropriate ways that demonstrate its status as the true stem for ‘grandmother’. As such, the difference between *kûhkum* and *uhkum* may give children a particular clue as they try to crack the code of possessive inflection.

5.1.7. Summary

Adult input in the dataset for this dissertation contains 8,227 nominal tokens, and on average, child-directed speech uses one nominal for every two utterances. Nouns constitute a minority of nominal production, and input contains one noun for about every ten utterances. Although the adult produces around 60 percent NEC noun types and 40 percent English noun types, the balance of noun tokens leans very heavily toward NEC. A little over one-third of NEC noun types occur in both inflected and uninflected forms, providing children with the opportunity to contrast these forms and extrapolate inflectional patterns. Nouns marked for possession represent the richest set of possibilities for nominal inflection in NEC, and adult input employs hundreds of utterances with nouns as possessees marked with NEC possessive inflection. A handful of these possessees are also very common in non-possessive contexts, which may also provide children with particularly useful evidence to deduce patterns of nominal inflection.

One critical point must be made at this juncture: The following sections demonstrate that the three children use much higher proportions of English noun types and tokens than found in child-directed speech. This dissertation focuses on the acquisition of specifically NEC nominal inflection, and so exploring and explaining the nature of child borrowing/code-mixing falls outside the scope of the present study. However, this topic demands future investigation.

5.2. Overview: Ani’s production

This section describes basic patterns pertaining to nominals in Ani’s production throughout her recording sessions. Ani is the youngest of the three children, and so her language usage and development changes quite a bit over the course of her data, from age 2;01.12–4;03.07. Nonetheless, this section gives a brief overview of major patterns in her data, drawing comparisons to adult input. This section follows the roadmap laid out in §5.1. §5.2.1 overviews Ani’s nominal tokens; §5.2.2 specifically surveys her nouns across all three categories; §5.2.3 categorizes her noun production by animacy category; §5.2.4 compares her inflected and

uninflected noun types and tokens; §5.5.5 and §5.5.6 review the basics of her expression of possession; and §5.5.7 summarizes findings.

5.2.1. All nominals in Ani’s speech

Ani produces 5,600 total utterances which contain 1,511 total nominal tokens. Table 5.16 tallies the utterances and nominals in Ani’s speech across all of her recording sessions.

Table 5.16: Ani’s nominal token production

Session	Child age	Session length	Utterances	Nominals	Nominals per utterance
A1.03	2;01.12	38:47	248	76	0.31
A1.06	2;03.24	37:08	473	100	0.21
A1.08	2;04.22	47:57	334	115	0.34
A1.09	2;05.14	35:13	280	35	0.13
A1.12	2;07.06	37:03	294	98	0.33
A1.15	2;08.23	51:10	355	85	0.24
A1.17	2;09.28	48:40	422	82	0.19
A1.20	2;11.16	36:30	274	60	0.22
A1.21	3;00.02	41:50	280	54	0.19
A1.24	3;02.05	38:16	389	77	0.2
A1.26	3;04.09	40:10	638	167	0.26
A1.30	3;06.23	31:52	480	164	0.34
A1.33	3;08.24	30:16	367	144	0.39
A1.35	4;00.13	36:45	354	109	0.31
A1.37	4;03.07	50:21	412	145	0.35
Totals			5,600	1,511	0.27

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Overall, Ani uses about one nominal in every four utterances, which is a little over half the rate she encounters nominals in adult input within the corpus. Ani’s own production of nominals across the eight categories is represented in Table 5.17, and her speech resembles and contrasts with adult input in a couple noticeable ways.

Table 5.17: Ani's production of nominal categories

Nominal category	Tokens	Proportion of tokens
Proper noun or name	454	0.30
NEC demonstrative	339	0.22
NEC pronoun	252	0.17
English common noun	252	0.17
NEC common noun	177	0.12
English pronoun	18	0.01
Mixed-language noun	17	0.01
English demonstratives	2	< 0.01
Total	1,511	1.00

Notes. NEC = Northern East Cree.

Like the adult, Ani uses NEC for a large majority of her nominals. Outside of proper nouns and names, NEC represents 768/1,057 of her nominal tokens (72.66 percent). However, English nominals take up a much larger proportion of Ani's speech, with 289/1,057 of tokens (27.34 percent). Despite the fact that English elements nonetheless comprise a minority of her nominals, this proportion of English is more than five times higher than in adult input. This difference rests entirely upon Ani's high rate of English nouns: Her proportions of English demonstratives and pronouns as well as mixed-language nouns with English stems largely resemble adult speech. In a second major similarity to child-directed speech Ani's nouns also occupy a minority of her overall nominal tokens. Just 446/1,511 tokens (29.52 percent) are nouns, which closely resembles the proportion of noun tokens in input (approximately 26 percent).

5.2.2. All nouns in Ani's speech

For a closer look at Ani's nouns, Table 5.18 calculates the number of her noun tokens per session, with proportions of all nominal tokens included for comparison. Ani's usage of noun tokens varies quite a bit between individual sessions, but on average she produces a little less than one noun per every ten utterances. This is a little more than half of the adult's rate in the Ani corpus (Table 5.3).

Table 5.18: Ani's noun token production

Session	Child age	Utterances	Nouns	Nouns per utterance	Nominals	Nominals per utterance
A1.03	2;01.12	248	21	0.08	76	0.31
A1.06	2;03.24	473	29	0.06	100	0.21
A1.08	2;04.22	334	14	0.04	115	0.34
A1.09	2;05.14	280	5	0.02	35	0.13
A1.12	2;07.06	294	22	0.07	98	0.33
A1.15	2;08.23	355	29	0.08	85	0.24
A1.17	2;09.28	422	44	0.10	82	0.19
A1.20	2;11.16	274	29	0.11	60	0.22
A1.21	3;00.02	280	10	0.04	54	0.19
A1.24	3;02.05	389	29	0.07	77	0.2
A1.26	3;04.09	638	57	0.09	167	0.26
A1.30	3;06.23	480	43	0.09	164	0.34
A1.33	3;08.24	367	40	0.11	144	0.39
A1.35	4;00.13	354	32	0.09	109	0.31
A1.37	4;03.07	412	42	0.10	145	0.35
Totals		5,600	446	0.08	1,511	0.27

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.19 places Ani's noun usage into NEC, English, and mixed-language categories. She relies upon English nouns to a much more significant extent than the adult: 269/446 (60.31 percent) of the child's noun tokens have English stems, compared to 323/2,137 (15.11 percent) of tokens in adult input. NEC comprises only 177/446 (39.69 percent) of Ani's nouns. This means that the bulk of Ani's nominal production may be NEC, but when it comes to using common nouns to signify referents, Ani uses English more often than NEC.

Turning now to noun types rather than tokens, Table 5.20 tallies Ani's noun production by types per category, with token numbers and type-token ratio calculations for additional context. Her usage of noun types differs considerably from some patterns in input, but a couple similarities are evident too.

Table 5.19: Ani's production of common noun tokens

Nominal category	Tokens	Proportion of tokens
NEC noun	177	0.40
English noun	252	0.57
Mixed-language noun	17	0.04
Total	446	1.01

Notes. NEC = Northern East Cree. The column "Proportion of tokens" adds up to over 1.00 because of complications rounding to two decimal places.

Table 5.20: Ani's production of common nouns types

Nominal category	Types	Proportion of types	Tokens	Proportion of tokens	TTR
NEC noun	35	0.29	177	0.40	0.2
English noun	78	0.64	252	0.57	0.3
Mixed-language noun	9	0.07	17	0.04	0.53
Total	122	1.00	446	1.01	0.27

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of that stem, whether uninflected or inflected. TTR = type-token ratio. The column "Proportion of tokens" adds up to over 1.00 because of complications rounding to two decimal places.

First, Ani uses 122 types throughout her NEC, English, and mixed-language nouns. This is about one-third of the adult's total noun types (Table 5.5).

Ani's noun types are also English dominant, and only 35/122 (28.69 percent) of her types are NEC. Six types occur in both English and mixed-language nouns: *chair*, *friend*, *pencil*, *purse*, *school*, and *shoe*, but three English types occur only in mixed-language nouns: *bed*, *room*, and *Barbie*. Although *Barbie* is used as a proper noun/name by Ani and the adult in other contexts (2), Ani has one construction where she inflects the word for possession (3), and so here that token is treated as a common noun.

- (2) <°^∇ Pσ·<∧LĊ° σr°<°b_x
- Barbie kiniwâpimâtâu nichihâk.
- Barbie kiniwâpim-â-tâu nichihâk
- name look.at.her-DIR-1PL.INCL>3 over.there
- 'Come, let's look at Barbie.' (Adult, A1.12, 2;07.06, 23:20)

- (3) ▷◁^ς∧▽Δ^{LII}
 ubarbieimh
 u-Barbie-im-h
 3-name-POSS-NA.OBV
 ‘her Barbie’ (Ani, A1.35, 4;00.13, 10:26)

However, mixed-language nouns are relatively uncommon in Ani’s usage and occupy just 9/122 (7.37 percent) of noun types. This closely resembles the adult’s proportion. Ani’s mixed-language noun types also match the crucial pattern in child-directed speech: English noun stems occur with NEC inflection, but no NEC noun type occurs with English inflection.

Lastly, type-token ratios for Ani’s NEC and English nouns are relatively similar, which contrasts with the difference between such ratios in adult input. This suggests that Ani does not have some imbalance between the languages in types she uses very frequently.

To shed additional light on Ani’s balance of types and tokens between NEC and English, Table 5.21 displays the top 15 types (in terms of tokens) across the three common noun categories. For quick comparison, types that also occur in the top 25 within adult input for the same category are indicated with an asterisk. Table 5.22 calculates the number of hapax legomena for the three noun categories.

Many of Ani’s most frequent nouns are also among the most frequent in adult input: 18/38 (47.37 percent) of Ani’s types in Table 5.21 also appear in the adult’s types in Table 5.6. This overlap hints at a possible relationship between Ani’s usage of individual noun types and their token frequency in child-directed speech. Furthermore, the types with the highest frequencies in Ani’s speech are generally those found among the top 25 in adult input.

The numbers in 5.21–5.22 also indicate that Ani does not have a heavy imbalance skewing the type-token ratio for NEC or English nouns. With each category of noun, Ani uses a handful of types at high frequencies, and then generally uses other types a handful of times. Her proportions of hapax legomena are nearly equal across the noun categories, which means that she does not particularly lean upon one language for one-time noun usage. These patterns represent a departure from child-directed speech.

Table 5.21: The most frequent common noun types in Ani's production

NEC nouns			English nouns		Mixed-language nouns	
Type	Gloss	Tokens	Type	Tokens	Type	Tokens
pîpî	baby	50 *	puppy	36 *	chair	5 *
pwâchikî	boogeyman	27 *	cheese	22 *	bed	3
chûchû	bottle	22	daycare	15 *	friend	2 *
kûhkum	grandmother	15 *	juice	13 *	room	2 *
awâshish	child	11 *	phone	8	Barbie	1
mischisin	shoe	7 *	book	7	pencil	1
minitûsh	insect	5	hockey	7 *	purse	1
chishâyâkw	bear	3 *	school	7 *	school	1
îpit	tooth	3	sock	7	shoe	1
pichikû	(name/type of toy)	3	DVD	6		
yâkâu	sand	3	shoe	6		
nânâ	food (child form)	2	car	5		
piyâshîsh	bird	2	garbage	5		
pûshî	cat	2 *	pencil	5 *		
îch	home	2 *	var. (7)	4		

Notes. NEC = Northern East Cree. Var. = Multiple noun types occur with the same number of tokens, with the number of types is indicated in parentheses. * = also occurs among the top 25 common nouns within the same category in adult input from Table 5.6.

Table 5.22: Ani's production of hapax legomena

Nominal category	Total noun types	Hapax	Proportion of hapax
NEC noun	35	20	0.57
English noun	78	41	0.53
Mixed-language noun	9	5	0.56
Total	122	66	0.54

Notes. NEC = Northern East Cree. Hapax = hapax legomenon, a noun type that occurs with just one token in the dataset.

5.2.3. The animacy of nouns in Ani's speech

For another major comparison with adult input, Table 5.23 counts each NEC noun type and token in Ani's speech, placing them into the two major animacy categories.

Ani's proportions of noun types are essentially split evenly between the two animacy categories, which is effectively identical to adult usage. However, Ani uses much higher proportions of animate tokens. This is likely a consequence of pragmatics, because Ani tends to identify and discuss people and animals with high frequency.

Table 5.23: Ani’s production of common nouns types, per animacy category

NEC noun animacy	Types	Proportion of types	Tokens	Proportion of tokens	TTR
Animate	17	0.49	126	0.71	0.13
Inanimate	18	0.51	51	0.29	0.35
Total	35	1.00	177	1.00	0.20

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of that stem, whether uninflected or inflected. TTR = type-token ratio. The column “Proportion of tokens” adds up to over 1.00 because of complications rounding to two, and even to three, decimal places.

5.2.4. All inflected vs. uninflected nouns in Ani’s speech

Much of this dissertation hinges upon Ani’s development of inflection, and so this section briefly overviews her overall production of inflected and uninflected NEC nouns. Ani has no errors of commission with inflectional morphology, and her two noun types (seven tokens) that only have errors of omission are excluded in this section.

Table 5.24 categorizes Ani’s on-target NEC noun types and tokens into inflected and uninflected forms. She uses some types in both forms, but the vast majority of her NEC noun tokens are uninflected (152/168, 90.47 percent). This stands in stark contrast to adult input, where more than half of all on-target NEC noun tokens are inflected.

Table 5.24: Ani’s production of inflected vs. uninflected NEC nouns

Inflected		Uninflected	
Types	Tokens	Types	Tokens
8	16	27	152

Notes. NEC = Northern East Cree.

For additional insight, Table 5.25 categorizes Ani’s error-free noun production across all three possible inflectional contexts. The vast majority of Ani’s noun types are never inflected (24/32, 75.00 percent), which means the bulk of her NEC noun production consists of bare stems. The other nine NEC types furnish a crucial opportunity to trace Ani’s acquisition of NEC inflection. The same goes for her nine English noun types that occur with NEC morphology, which also provide a critical window into the acquisition of NEC nominal inflection.

Table 5.25: Ani's production of NEC nouns across inflectional contexts

Occur inflected only		Occur uninflected only		Occur in either context	
Types	Tokens	Types	Tokens	Types	Tokens
5	7	24	93	3	68

Notes. NEC = Northern East Cree.

5.2.5. All possessive constructions in Ani's speech

Again, because possession presents the fullest range of NEC inflectional possibilities, Table 5.26 calculates the total number of utterances containing a possessive construction throughout Ani's sessions.

Table 5.26: Ani's POSS constructions per session

Session	Child age	Utterances	Utterances containing a POSS construction	Proportion of utterances w/ a POSS construction
A1.03	2;01.12	248	3	0.01
A1.06	2;03.24	473	3	0.01
A1.08	2;04.22	334	20	0.06
A1.09	2;05.14	280	5	0.02
A1.12	2;07.06	294	21	0.07
A1.15	2;08.23	355	3	0.01
A1.17	2;09.28	422	2	<0.01
A1.20	2;11.16	274	1	<0.01
A1.21	3;00.02	280	3	0.01
A1.24	3;02.05	389	6	0.02
A1.26	3;04.09	638	8	0.01
A1.30	3;06.23	480	11	0.02
A1.33	3;08.24	367	10	0.03
A1.35	4;00.13	354	11	0.03
A1.37	4;03.07	412	16	0.04
Totals		5,600	123	0.02

Notes. POSS = possessive. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. w/ = with.

Ani's entire sampled speech has 123 total utterances containing at least one possessive construction. This represents approximately two percent of her utterances, which is less than half of the rate in adult input.

Table 5.27 tallies the various types of possessive constructions present throughout Ani's utterances. Her total of 125 utterances differs from the total of 123 in Table 5.26 because two of her utterances have more than one possessive construction.

Table 5.27: Ani's utterances containing possessive constructions

Language	Type of POSS construction	Utterances	Proportion
NEC	PSR + DEM	58	0.46
	PSR only	15	0.12
	N only	7	0.06
	PSR + N	4	0.03
	DEM + N	3	0.02
	PSR + DEM + N	3	0.02
	PSR + DEM + name	1	< 0.01
ENG	POSS.PRO + N/name	12	0.10
	POSS.PRO only	2	0.02
Mixed-language	ENG.N w/ NEC.INFL	5	0.04
	NEC.PSR + NEC.DEM + ENG.N w/ NEC.INFL	4	0.03
	NEC.PSR + NEC.DEM + ENG.N w/o INFL	3	0.02
	PSR + ENG.N w/ NEC.INFL	2	0.02
	NEC.PSR + ENG.N w/o INFL	2	0.02
	NEC.PSR + NEC.DEM + ENG.POSS.PRO + ENG.N w/o INFL	1	< 0.01
	NEC.PSR + ENG.POSS.PRO + ENG.N w/o INFL	1	< 0.01
	ENG.N w/ NEC.INFL & ENG.INFL	1	< 0.01
	NEC.PSR + ENG.N w/ NEC.INFL	1	< 0.01
Total		125	1.00

Notes. Individual nominals co-occurring in a possessive construction are separated by a plus sign <+>. The symbol <w/> means “with”, and <w/o> means “without”. DEM = demonstrative. ENG = English. INFL = inflection. N = noun. NEC = Northern East Cree. POSS = possessive. POSS.PRO = possessive pronoun. PSR = possessor.

Several noteworthy patterns emerge from Table 5.27. The first is that the majority of Ani's possessive constructions do not contain a noun as the possessee. 75/125 (60 percent) of the utterances in Table 5.27 involve types of possessive constructions where the possessee is a demonstrative (4) or is not overtly expressed (5). In other words, these types of constructions circumvent NEC possessive inflection by supplanting a noun with another type of nominal or by omitting a possessee nominal altogether. The predominance of these kinds of constructions constitutes a major departure from the adult input, where only 109/799 (13.64 percent) utterances have a possessive construction with no noun as the possessee.

(4) ɔ̀ɔ̀ ɔ̀x
 Nîyi û.
 nîyi û
 1 DEM.PXL
 ‘This is mine.’ (Ani, A1.08, 2;04.22, 00:26)

(5) ʃʌʌ ʃɔ̀ ɔ̀x
 Mommy tân nîyi.
 Mommy tân nîyi
 name where 1
 ‘Mommy, where is mine?’ (Ani, A1.30, 3;06.23, 06:14)

The fact that the majority of Ani’s expressions of possession lack nouns as possessees has already been described by Henke (2019b). Although these previous findings corroborate the pattern here, the current analysis supersedes Henke (2019b) for three important reasons. First, the present study relies upon richer data. It employs a combination of video files, accompanying annotations, and fieldwork with native speakers of NEC —whereas the previous study could analyze only CCLAS transcripts. Second, the present study samples more recording sessions to cover a broader and deeper range of language development. Henke (2019b) had access to transcripts from nine sessions, but this dissertation covers 15 sessions and includes an additional eight months of Ani’s development. Finally, access to video has enabled me to make more judicious decisions for including/excluding utterances for analysis.

A second notable pattern is that Ani’s possessive constructions largely contain NEC-only elements. Even though English dominates her noun types and tokens, only a minority of her possessive constructions in Table 5.27 (34/125, 27.20 percent) use any English elements at all. This indicates a crucial aspect of Ani’s developing language abilities: She may borrow a large proportion of English nouns, but these loanwords are incorporated into an NEC grammar. She uses NEC to express possessive relationships, and she wraps her English nouns in NEC inflection. The next section explores some of the characteristics of nouns as possessees involving NEC inflection.

5.2.6. All possessee nouns involving NEC inflection in Ani’s speech

Table 5.28 tabulates Ani’s production of nouns as possesseees with NEC inflection, with overall noun types and tokens for comparison.

Throughout her dataset, Ani does not use many nouns as possesseees—just 18 types with 29 tokens. This is far fewer types and tokens than in child-directed speech. Her production is relatively balanced between NEC and mixed-language possesseees as well, which is another major departure from adult input.

Table 5.28: Ani’s nouns as possesseees involving NEC inflection

<i>Nominal category</i>	<i>Nouns as possesseees</i>		<i>All nouns</i>	
	<i>Types</i>	<i>Tokens</i>	<i>Types</i>	<i>Tokens</i>
NEC noun	10	16	35	177
Mixed-language noun	8	13	9	17
Total	18	29	44	194

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of a noun stem.

Table 5.29 tallies Ani’s production of nouns as possesseees per recording session. The NEC noun type *chûchû* ‘bottle’ and the English noun type *bed* each occur in two different sessions, but every other noun type only appears in one session.

For one last look at Ani’s production of nouns in possessive constructions, Table 5.30 lists all of Ani’s types and tokens of nouns as possesseees. She uses no English nouns as possesseees in English-only constructions, and so all of her possesseee nouns occur within the NEC morphosyntactic shell of possessive inflection. For comparison with adult production of possesseees, noun types that occur in Table 5.14 are marked with an asterisk in the “Tokens” column. Ani does not produce many nouns as possesseees, but there are a couple evident patterns.

Table 5.29: Ani's nouns as possessives involving NEC inflection, per session

Session	Child age	Utterances	NEC nouns		Mixed-language nouns	
			Types	Tokens	Types	Tokens
A1.03	2;01.12	248	0	0	0	0
A1.06	2;03.24	473	1	1	0	0
A1.08	2;04.22	334	0	0	0	0
A1.09	2;05.14	280	0	0	0	0
A1.12	2;07.06	294	2	4	0	0
A1.15	2;08.23	355	1	1	0	0
A1.17	2;09.28	422	0	0	0	0
A1.20	2;11.16	274	0	0	0	0
A1.21	3;00.02	280	0	0	0	0
A1.24	3;02.05	389	1	1	0	0
A1.26	3;04.09	638	1	1	0	0
A1.30	3;06.23	480	2	2	1	1
A1.33	3;08.24	367	0	0	0	0
A1.35	4;00.13	354	1	3	4	7
A1.37	4;03.07	412	2	3	4	5
Total		5,600	11	16	9	13

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*.

Table 5.30: All nouns as possessives, in Ani's production

NEC nouns			Mixed-language nouns	
Type	Gloss	Tokens	Type	Tokens
chûchû	bottle	4	bed	3
îpit	tooth	3 *	chair	3
îch	home	2 *	friend	2 *
akuhp	coat	1 *	Barbie	1
mischisin	shoe	1 *	pencil	1
pichiwiyan	shirt	1 *	purse	1
piyichîs	pants	1 *	school	1
pûshî	cat	1	shoe	1
uhtâwî	father	1 *		
wâpuyân	blanket	1		

Notes. NEC = Northern East Cree. * = also occurs in the most frequent nouns as possessives in child-directed speech (see Table 5.14).

There is extensive overlap between Ani's NEC possessives and the most frequent possessives in child-directed speech (Table 5.14). Ani largely uses possessives that she has encountered more often in adult input. Ani's most frequent possessive is *chûchû* 'bottle', which is more of a specifically child form that the adult is less likely to use.

On the other hand, Ani's usage of English nouns as possessives is not clearly tied to adult input. Only one type, *friend*, occurs as a mixed-language possessive in adult input. Therefore, Ani's possessive use of *bed*, *chair*, *Barbie*, *pencil*, *purse*, *school*, and *shoe* may serve as a good possible indicator of her productivity with possessive marking.

Lastly, contrary to my hypothesis in §5.6, there is no indication that the two related forms for 'grandmother' play any role in Ani's possessive marking. The lexicalized form *kûhkum* is among Ani's most frequent noun types, but she produces no possessive forms of 'grandmother'. The data provide no demonstration that Ani has analyzed the stem *uhkum*.

5.2.7. Summary

Ani produces 1,511 total nominal tokens across her 15 recording sessions. She uses approximately one nominal for every four utterances, which is about half the rate in child-directed speech within the CCLAS corpus. As in adult input, nouns constitute a minority of Ani's nominal production. In stark contrast to child-directed speech, though, English comprises a majority of Ani's noun types and tokens, and the vast majority of Ani's nouns occur as uninflected forms. Ani's possessive constructions present more departures from patterns in adult input: Ani produces possessive constructions at about half the rate in input, most of her constructions do not contain a noun as possessee, and she produces relatively few possessee nouns. Ani's usage of NEC possessives seems to correlate tightly with their frequency in child-directed speech, but her usage of English stems in mixed-language possessives apparently derives from her own extraction of inflectional patterns.

5.3. Overview: Daisy's production

This section describes basic patterns in Daisy's production of nominals across her sample. Daisy's age range of 3;08.10 to 5;11.25 in the CCLAS corpus represents an important middle ground, because she overlaps in age with each of the other two children. However, Daisy's data begins relatively late in the acquisitional process, and the corpus can offer no insight into her development before age 3;08. This section also follows the format in §5.1–§5.2.

5.3.1. All nominals in Daisy’s speech

Daisy produces 5,742 utterances across her dataset, with 2,962 nominal tokens (Table 5.31). Her average of one nominal for every two utterances resembles the rate in child-directed speech.

Table 5.31: Daisy’s nominal token production

Session	Child age	Session length	Utterances	Nominals	Nominals per utterance
B1.01	3;08.10	35:42	348	221	0.64
B1.02	3;09.01	14:00	140	53	0.38
B1.03	3;09.22	37:13	584	309	0.53
B1.04	3;11.11	58:29	697	296	0.42
B1.05	4;00.00	37:36	536	268	0.50
B1.08	4;02.06	50:25	473	318	0.67
B1.11	4;04.04	40:03	385	227	0.59
B1.14	4;06.02	41:58	388	135	0.35
B1.17	4;07.28	43:27	429	246	0.57
B1.20	4;10.03	43:24	441	194	0.44
B1.24	5;00.20	34:30	358	181	0.51
B1.27	5;04.12	33:29	283	132	0.47
B1.30	5;07.03	32:27	362	235	0.65
B1.31	5;10.02	36:46	318	147	0.46
Total			5,742	2,962	0.52

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.32 tabulates Daisy’s nominals across seven categories. She produces no English demonstratives, which are quite rare in the speech of both the adult and Ani. Again, excluding proper nouns and names, Daisy’s nominal tokens are overwhelmingly NEC (1,959/2,366, 82.80 percent), and English nominal elements occupy a small minority (407/2,366 tokens, 17.20 percent). Her proportion of English nominals is more than twice that found in child-directed speech but less than Ani’s usage. Like the other two speakers, Daisy’s mixed-language nouns only consist of an English stem with NEC inflection, and these forms represent a fraction of overall nominal production. Nouns make up a minority of Daisy’s nominal tokens (902/2,962, 30.45 percent) but slightly more than with the adult or Ani.

Table 5.32: Daisy’s production of nominal categories

Nominal category	Tokens	Proportion of tokens
NEC demonstrative	915	0.31
Proper noun or name	596	0.20
NEC common noun	531	0.18
NEC pronoun	513	0.17
English common noun	305	0.10
Mixed-language noun	66	0.02
English pronoun	36	0.01
Total	2,962	0.99

Notes. NEC = Northern East Cree. The column “Proportion of tokens” adds up to under 1.00 because of complications rounding to two decimal places.

5.3.2. All nouns in Daisy’s speech

Turning exclusively to nouns, Table 5.33 calculates Daisy’s noun tokens per recording session. She averages 0.16 nouns per utterance throughout her dataset. This is more than double Ani’s rate and about one-quarter more than the adult’s rate throughout the CCLAS corpus.

Table 5.33: Daisy’s noun token production

Session	Child age	Utterances	Nouns	Nouns per utterance	Nominals	Nominals per utterance
B1.01	3;08.10	348	85	0.24	221	0.64
B1.02	3;09.01	140	23	0.16	53	0.38
B1.03	3;09.22	584	126	0.22	309	0.53
B1.04	3;11.11	697	104	0.15	296	0.42
B1.05	4;00.00	536	84	0.16	268	0.50
B1.08	4;02.06	473	61	0.13	318	0.67
B1.11	4;04.04	385	67	0.17	227	0.59
B1.14	4;06.02	388	52	0.13	135	0.35
B1.17	4;07.28	429	44	0.10	246	0.57
B1.20	4;10.03	441	48	0.11	194	0.44
B1.24	5;00.20	358	63	0.18	181	0.51
B1.27	5;04.12	283	30	0.11	132	0.47
B1.30	5;07.03	362	66	0.18	235	0.65
B1.31	5;10.02	318	49	0.15	147	0.46
Total		5,742	902	0.16	2,962	0.52

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*.

Table 5.34 lists Daisy’s noun token production across the three major noun categories. Within nouns, Daisy’s NEC dominance is tempered. The majority of her tokens are NEC, but English noun stems take up 371/902 tokens (41.13 percent). This is a much higher proportion

than in adult speech but less than what Ani uses. In fact, Daisy’s usage is a mirror image of Ani’s: Daisy’s NEC-English token balance is around 60-40, while Ani’s balance is 40-60.

Table 5.34: Daisy’s production of common noun tokens

Nominal category	Tokens	Proportion of tokens
NEC noun	531	0.59
English noun	305	0.34
Mixed-language noun	66	0.07
Total	902	1.00

Notes. NEC = Northern East Cree.

Turning again to noun types along with tokens, Table 5.35 presents Daisy’s noun types, tokens, and type-token ratio per category. Daisy employs 295 noun types across the three categories, and her types reveal some additional patterns in her usage.

Table 5.35: Daisy’s production of common nouns types

Nominal category	Types	Proportion of types	Tokens	Proportion of tokens	TTR
NEC noun	114	0.38	531	0.59	0.21
English noun	139	0.47	305	0.34	0.45
Mixed-language noun	44	0.15	66	0.07	0.67
Total	297	1.00	902	1.00	0.33

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of that stem, whether uninflected or inflected. TTR = type-token ratio.

Going from tokens to types, Daisy’s NEC-English balance flips: Only 114/297 (38.38 percent) of her types are NEC and more than 60 percent are English. Second, the high proportion of English types can be partially attributed to overlap between English-only and mixed-language nouns: 27 types appear in each kind of noun. Third, Daisy uses mixed-language nouns in a much higher proportion than the adult or Ani, but Daisy’s usage here maintains the same grammatical pattern: English noun stems receive NEC inflection, but never vice versa. Lastly, as in child-directed speech, Daisy’s type-token ratio for NEC is much lower than that for the other two categories. This suggests that Daisy uses some number of NEC noun types with high frequency.

Table 5.36 provides a more detailed look at Daisy’s nouns and lists her 25 most frequent types, in terms of tokens. Types that also appear among the most common in adult speech are indicated with an asterisk, for comparison. Table 5.37 presents her hapax legomena within each

of the three noun categories. Daisy's production both resembles and differs from patterns in child-directed speech.

Table 5.36: The most frequent common noun types in Daisy's production

NEC			English		Mixed-language	
Type	Gloss	Tokens	Type	Tokens	Type	Tokens
kâwî	mother	45 *	flower	12	room	5 *
pîpî	baby	42 *	horse	12 *	phone	4
îch	home	37 *	school	12 *	friend	3 *
pwâchikî	boogeyman	25 *	paper	10	name	3
awâshish	child	24 *	store	10	present	3
iskwâu	woman	18	garbage	7	cake	2
kûhkum	grandmother	13 *	phone	6	clock	2
uhtâwî	father	13	tree	6	cow	2
nâpâu	man	11	apple	5	flower	2
nipî	water	10	daycare	5 *	helicopter	2
sûtîs	candy, sweets	10	paint	5	diaper	2
tihchî	hand	10	sticker	5	tree	2
mâtiwâkin	toy, game	9	sugar	5	window	2
nipâwin	bed	9	cracker	4	zipper	2
wîchâwâkin	friend	9 *	crayon	4	var. (30)	1
uhkum	grandmother	8	door	4		
chishâyâkw	bear	7 *	ghost	4		
mishtikw	tree	7	princess	4 *		
nituhkuyinikimikw	hospital	7	var. (14)	3		
nituhkuyiniskwâu	nurse	7				
atim	dog	6				
mischisin	shoe	6 *				
nâpâshish	boy	6				
utâpânâskw	car, vehicle	6 *				
var. (8)	n/a	5				

Notes. NEC = Northern East Cree. *Var.* = Multiple noun types occur with the same number of tokens, with the number of types is indicated in parentheses. * = also occurs among the top 25 common nouns within the same category in adult input from Table 5.6.

Table 5.37: Daisy's production of hapax legomena

Nominal category	Total noun types	Hapax	Proportion of hapax
NEC noun	114	44	0.39
English noun	139	69	0.50
Mixed-language noun	44	30	0.68
Total	297	143	0.48

Notes. NEC = Northern East Cree. Hapax = hapax legomenon, a noun type that occurs with just one token in the dataset.

First, Daisy tends to use individual NEC noun types more frequently than individual English types. Her more frequent usage of NEC types is not as pronounced as in child-directed speech, but she also does not share Ani's relative balance between using NEC and English types.

As with Ani's production, some connection seems evident between Daisy's most frequent NEC types and their frequency in adult input. 10 of Daisy's most frequent types, including her five with the very highest frequencies, also appear in the adult's top 25 types (Table 5.6). On the other hand, Daisy's usage of English noun types does not seem to share the same kind of connection with frequency in child-directed speech.

Large proportions of Daisy's types within each language are hapax legomena. Nearly 40 percent of Daisy's NEC types, 50 percent of her English-noun types, and 70 percent of her mixed-language nouns use a given type just once. Her hapax legomena for NEC nouns and mixed-language nouns that do not appear in adult input may provide particular windows into her productive use of NEC inflectional morphology.

5.3.3. The animacy of nouns in Daisy's speech

Table 5.38 tallies each of Daisy's NEC noun types and tokens by animacy category. Daisy's types are split nearly evenly between animate and inanimate nouns, which is nearly identical to the proportions in the speech of both the adult and Ani. Like Ani, Daisy uses a higher proportion of animate over inanimate tokens, most likely because she also tends to talk frequently about people and animals.

Table 5.38: Daisy's production of common nouns types, per animacy category

NEC noun animacy	Types	Proportion of types	Tokens	Proportion of tokens	TTR
Animate	56	0.49	332	0.63	0.17
Inanimate	58	0.51	199	0.37	0.29
Total	114	1.00	531	1.00	0.21

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English.

Token = any occurrence of that stem, whether uninflected or inflected. TTR = type-token ratio.

5.3.4. All inflected vs. uninflected nouns in Daisy's speech

Daisy produces 114 NEC noun types (531 tokens) overall, but 15 tokens (across four different types) with errors in inflection have been excluded from the discussion in this section. Table 5.39 lays out the NEC types and tokens that occur in inflected and uninflected forms in her speech.

Table 5.39: Daisy's production of inflected vs. uninflected NEC nouns

Inflected		Uninflected	
Types	Tokens	Types	Tokens
71	304	70	212

Notes. NEC = Northern East Cree.

In a pattern quite similar to child-directed speech, more than half of Daisy's on-target tokens 304/516 (58.91 percent) are inflected to some extent. Daisy's production differs greatly from Ani's, where only nine types (18 tokens) are inflected. For a more incisive look, Table 5.40 places Daisy's on-target noun production into the three possible inflectional contexts.

Table 5.40: Daisy's production of NEC nouns across inflectional contexts

Occur inflected only		Occur uninflected only		Occur in either context	
Types	Tokens	Types	Tokens	Types	Tokens
40	186	39	82	31	248

Notes. NEC = Northern East Cree.

The proportions in Daisy's speech do not differ much from patterns in adult input: 39/110 of Daisy's NEC noun types (35.45 percent) are never inflected, 40/110 (36.36 percent) only occur in inflected forms, and the remaining 31/110 (28.18 percent) can occur in either context and comprise a plurality of tokens (248/516, 48.06 percent). Additionally, Daisy produces 44 English noun types (66 tokens) with NEC inflection. Altogether, this noun production will provide rich opportunities to explore Daisy's inflectional morphology in the following chapters.

5.3.5. All possessive constructions in Daisy’s speech

Moving specifically into possession, Table 5.41 lists the total number of utterances containing a possessive construction across Daisy’s sampled data. Daisy produces a 283 of these utterances, and her rate of producing such utterances matches the rate in child-directed speech throughout the CCLAS corpus.

Table 5.41: Daisy’s POSS constructions per session

Session	Child age	Utterances	Utterances containing a POSS construction	Proportion of utterances w/ a POSS construction
B1.01	3;08.10	348	15	0.04
B1.02	3;09.01	140	4	0.03
B1.03	3;09.22	584	34	0.06
B1.04	3;11.11	697	56	0.08
B1.05	4;00.00	536	24	0.04
B1.08	4;02.06	473	25	0.05
B1.11	4;04.04	385	17	0.04
B1.14	4;06.02	388	20	0.05
B1.17	4;07.28	429	14	0.03
B1.20	4;10.03	441	24	0.05
B1.24	5;00.20	358	19	0.05
B1.27	5;04.12	283	5	0.02
B1.30	5;07.03	362	19	0.05
B1.31	5;10.02	318	7	0.02
Total		5,742	283	0.05

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*.

Table 5.42 totals the types of possessive constructions found throughout Daisy’s utterances. The total of 290 in Table 5.42 differs from the 283 in Table 5.41, because some of Daisy’s utterances contain more than one possessive construction.

Daisy’s production of possessive constructions largely mirrors patterns in child-directed speech. She produces NEC-only possessive constructions in the vast majority of these utterances (251/290, 86.55 percent), and a similar proportion of Daisy’s possessive constructions contain a noun as the possessee (246/290, 84.83 percent). All of these nouns, except those in the 12 English-only constructions, involve NEC possessive inflection.

Table 5.9: Daisy’s utterances containing possessive constructions

Language	Type of POSS construction	Utterances	Proportion
NEC	N only	167	0.58
	PSR + DEM	32	0.11
	PSR + N	21	0.07
	DEM + N	16	0.06
	PSR only	12	0.04
	PSR + DEM + N	3	0.01
ENG	POSS.PRO + N/name	12	0.04
Mixed-language	ENG.N w/ NEC.INFL	15	0.05
	NEC.DEM + ENG.N w/ NEC.INFL	6	0.02
	ENG.POSS.PRO + ENG.N w/ NEC.INFL	2	0.01
	PSR + ENG.N w/ NEC.INFL	1	< 0.01
	NEC.PSR + ENG.N w/ ENG.INFL	1	< 0.01
	ENG.POSS.PRO + ENG.N w/ NEC & ENG.INFL	1	< 0.01
	NEC.PSR + ENG.N w/ NEC.INFL	1	< 0.01
Total		290	1.00

Notes. Individual nominals co-occurring in a possessive construction are separated by a plus sign <+>. The symbol <w/> means “with”, and <w/o> means “without”. DEM = demonstrative. ENG = English. INFL = inflection. N = noun. NEC = Northern East Cree. POSS = possessive. POSS.PRO = possessive pronoun. PSR = possessor.

5.3.6. All possessee nouns involving NEC inflection in Daisy’s speech

Exploring this noun production further, Table 5.43 counts the types and tokens of nouns as possesseees, alongside her overall noun types and tokens. Daisy uses 63 different noun types (246 tokens) as possesseees, where NEC takes up a large majority of types (46/63, 70.02 percent) as well as tokens (220/246, 89.43 percent)—proportions similar to child-directed speech but quite different from Ani’s production.

For a quick look across her development, Table 5.44 records Daisy’s types and tokens for NEC and mixed-language nouns per session. The type totals in Table 5.44 differ from those in Table 5.43, and this provides some important insight. Daisy repeats 23 NEC noun types across multiple recording sessions, but she only uses one type (*phone*) in a mixed-language noun within more than one session. In other words, her usage of a given English noun type with NEC possessive inflection generally happens at just one point in time. By comparison, she tends to use a given NEC noun as a possessee at multiple points in time. Her usage of NEC nouns to express possession is more robust and stable.

Table 5.43: Daisy's nouns as possessives involving NEC inflection

<i>Nominal category</i>	<i>Nouns as possessives</i>		<i>All nouns</i>	
	<i>Types</i>	<i>Tokens</i>	<i>Types</i>	<i>Tokens</i>
NEC noun	46	220	114	531
Mixed-language noun	17	26	44	66
Total	63	246	158	597

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of a noun stem.

Table 5.44: Daisy's nouns as possessives involving NEC inflection, per session

<i>Session</i>	<i>Child age</i>	<i>Utterances</i>	<i>NEC nouns</i>		<i>Mixed-language nouns</i>	
			<i>Types</i>	<i>Tokens</i>	<i>Types</i>	<i>Tokens</i>
B1.01	3;08.10	348	10	10	0	0
B1.02	3;09.01	140	2	3	0	0
B1.03	3;09.22	584	14	33	1	1
B1.04	3;11.11	697	18	41	6	10
B1.05	4;00.00	536	7	16	0	0
B1.08	4;02.06	473	11	24	0	0
B1.11	4;04.04	385	14	16	0	0
B1.14	4;06.02	388	5	15	2	3
B1.17	4;07.28	429	5	10	0	0
B1.20	4;10.03	441	9	17	2	2
B1.24	5;00.20	358	6	14	3	4
B1.27	5;04.12	283	2	2	0	0
B1.30	5;07.03	362	5	14	3	5
B1.31	5;10.02	318	4	5	1	1
Total			112	220	16	26

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*.

As one final assessment of Daisy's noun as possessives, Table 5.45 lists her most common noun types occurring with NEC possessive inflection. This table includes her top 16 NEC types and all of her mixed-language types. Types that also occur in Table 5.14 are marked with an asterisk in the "Tokens" column, for easy comparison with child-directed speech.

Table 5.45: Most frequent nouns as possessives w/ NEC inflection, in Daisy’s production

NEC nouns			Mixed-language nouns	
Type	Gloss	Tokens	Type	Tokens
kâwî	mother	45 *	friend	3 *
îch	home	37 *	name	3
pîpî	baby	22 *	phone	3
uhtâwî	father	13 *	clock	2
tihchî	hand	10 *	room	2
wîchâwâkin	friend	9 *	zipper	2
uhkum	grandmother	8 *	brush	1
nipâwin	bed	5	bus	1
shchîshikw	eye	5 *	cake	1
shtikwân	head	5 *	homework	1
skât	leg	5	Honda	1
ichishî	intestines/stomach	4	nose	1
awâshish	child	3	pencil	1
ichikum	phlegm/mucus	3	present	1
mischisin	shoe	3 *	sock	1
shîm	younger.sibling	3 *	sweater	1
var. (10)	n/a	2	uncle	1
var. (20)	n/a	1		

Notes. w/ = with. NEC = Northern East Cree. Var. = Multiple noun types occur with the same number of tokens, with the number of types is indicated in parentheses. * = also occurs in the top 25 NEC most frequent possessives in adult speech, from Table 5.14.

Once again, there appears to be a connection between Daisy’s NEC usage and the frequency of types in child-directed speech. 11/16 (68.75 percent) of Daisy’s most frequent NEC noun types as possessives also occur in the most frequent adult possessives—this includes the top seven most frequent of Daisy’s types. In other words, like Ani, Daisy uses many NEC possessives that she encounters more often in child-directed speech.

The (in)alienability of possession may play a role here. Another 11/16 of Daisy’s most frequent NEC types in Table 5.45 are inalienably possessed, which means they must always occur with possessive inflection. Just five alienable types—*nipâwin* ‘bed’, *mischisin* ‘shoe’, *pîpî* ‘baby’, *wîchâwâkin* ‘friend’, and *awâshish* ‘child’—can occur with or without possessive marking. Daisy’s usage of these types may provide a particular window into her productive usage of NEC inflection.

Daisy’s usage of English stems in mixed-language possessives may also prove particularly revealing. She has only one type here that occurs in the adult’s most frequent possessives (*friend*),

and even then the adult only uses that type twice throughout the entire corpus. In other words, Daisy's mixed-language possessives do not share a clear connection to frequency in adult speech, and therefore may provide direct insight into her productive knowledge of NEC possessive inflection.

As a final point of consideration, Daisy's production of the two types for 'grandmother' may also provide special insight. The child uses the lexicalized form *kâhkum* 13 times, she uses the analyzed stem *uhkum* eight times as a possessee. Tracing her analysis of the stem from the lexicalized form and her application of various person prefixes to that stem could provide a particularly useful glimpse into her inflectional development.

5.3.7. Summary

Over the course of her 14 recording sessions, Daisy produces 5,742 utterance with 2,962 total nominal tokens. Daisy's production bears several similarities to adult input. The child uses nominal tokens at about the same rate as in input, her tokens are overwhelmingly NEC, and nouns represent a minority of her overall tokens. However, Daisy uses a higher proportion of English noun types and tokens than the adult. Daisy's possessive constructions also appear similar to patterns in child-directed speech. She produces such constructions at about the same rate as the adult, and NEC nouns dominate her expressions of possession. Frequency of forms in child-directed speech may have a bearing on Daisy's production of both NEC nouns and possessives with NEC inflection, but not on her production of English nouns and English nouns with NEC possessive inflection.

5.4. Overview: Billy's production

This section provides an overview of nominal production from the third and final child whose data is sampled for the present study: Billy, from age 4;05.04 to 5;10.20. Billy's sample is the shortest among the three children, and his recordings begin much later in the acquisitional process than the data for the other two children. However, Billy's age range across his sampled data overlaps entirely with data sampled from Daisy (Table 4.4 in). This section surveys major aspects of Billy's nominal production, following the format from §5.1–§5.3.

5.4.1. All nominals in Billy’s speech

Table 5.46 calculates the number of nominal tokens and nominals per utterance across Billy’s dataset. He produces 3,173 total utterances with 1,272 total nominal tokens. Billy averages under one nominal for every two utterances, which is less than the adult and Daisy but higher than Ani.

Table 5.46: Billy’s nominal token production

Session	Child age	Session length	Utterances	Nominals	Nominals per utterance
B3.02	4;05.04	40:24	452	87	0.19
B3.04	4;06.08	42:25	282	140	0.50
B3.06	4;07.27	43:53	226	120	0.53
B3.07	4;08.21	33:55	163	65	0.40
B3.09	4;10.08	36:28	242	98	0.40
B3.11	5;00.13	33:05	399	175	0.44
B3.13	5;02.12	24:24	246	92	0.37
B3.14	5;03.22	28:44	150	74	0.49
B3.15	5;05.00	41:09	323	135	0.42
B3.17	5;06.27	36:15	299	115	0.38
B3.18	5;10.06	44:42	391	171	0.44
Totals			3,173	1,272	0.40

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.47 places Billy’s nominal tokens into each of the eight major categories. Outside of proper nouns and names, NEC occupies the majority of Billy’s nominal tokens (765/1,061, 72.10 percent). As with the adult and the other children, nouns constitute a minority of Billy’s nominals, with just 448/1,272 tokens (35.22 percent). Billy averages 0.14 nouns per utterance (Table 5.48), which is very similar to the adult and Daisy. The next section provides a closer look at Billy’s nouns.

Table 5.47: Billy's production of nominal categories

Nominal category	Tokens	Proportion of tokens
NEC demonstrative	312	0.25
NEC pronoun	284	0.22
English common noun	235	0.18
Proper noun or name	211	0.17
NEC common noun	169	0.13
Mixed-language noun	44	0.03
English pronoun	16	0.01
English demonstrative	1	< 0.01
Total	1,272	1.00

Notes. NEC = Northern East Cree.

Table 5.48: Billy's noun token production

Session	Child age	Utterances	Nouns	Nouns per utterance	Nominals	Nominals per utterance
B3.02	4;05.04	452	21	0.05	87	0.19
B3.04	4;06.08	282	52	0.18	140	0.50
B3.06	4;07.27	226	34	0.15	120	0.53
B3.07	4;08.21	163	31	0.19	65	0.40
B3.09	4;10.08	242	28	0.12	98	0.40
B3.11	5;00.13	399	63	0.16	175	0.44
B3.13	5;02.12	246	42	0.17	92	0.37
B3.14	5;03.22	150	26	0.17	74	0.49
B3.15	5;05.00	323	58	0.18	135	0.42
B3.17	5;06.27	299	29	0.1	115	0.38
B3.18	5;10.06	391	64	0.16	171	0.44
Totals		3,173	448	0.14	1,272	0.40

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

5.4.2. All nouns in Billy's speech

Table 5.49 lists Billy's tokens per each category of noun. Like the other speakers, Billy uses only English stems in mixed-language nouns, and so English takes up the majority of his noun tokens (279/448, 62.28 percent). This proportion patterns very closely with Ani's noun production.

Table 5.50 calculates Billy's noun types, tokens, and type-token ratio for each noun category. Billy uses 216 noun types, where English again constitutes a majority of his production (152/216, 70.37 percent). However, as in Daisy's speech, part of this predominance can be attributed to overlap between English and mixed-language nouns: Billy uses 19 types in both

kinds of nouns. Billy's type-token ratios for these two categories are also higher than the ratio for the NEC-only category, suggesting that he uses individual NEC types more frequently.

Table 5.49: Billy's production of common noun tokens

Nominal category	Tokens	Proportion of tokens
NEC noun	169	0.38
English noun	235	0.52
Mixed-language noun	44	0.10
Total	448	1.00

Notes. NEC = Northern East Cree.

Table 5.50: Billy's production of common nouns types

Nominal category	Types	Proportion of types	Tokens	Proportion of tokens	TTR
NEC noun	64	0.30	169	0.38	0.38
English noun	122	0.56	235	0.52	0.52
Mixed-language noun	30	0.14	44	0.10	0.68
Total	216	1.00	448	1.00	0.48

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of that stem, whether uninflected or inflected. TTR = type-token ratio.

For a closer look at frequency, Table 5.51 lays out Billy's most frequent noun types per noun category, in terms of tokens. Once again, for comparison with patterns in child-directed speech, an asterisk marks noun types that also occur in the adult's most frequent noun types (Table 5.6). Billy's hapax legomena per noun category are calculated in Table 5.52.

Unlike Daisy and the adult, Billy does not use NEC types and English types at considerably different rates. However, much like the other two children, Billy's production of frequent NEC types seems connected to frequency in child-directed speech: Nine of his top 22 types also occur in the adult's most common NEC noun types, which includes Billy's six types with the highest frequencies. Billy's most frequent English noun types may also share a relationship to frequency in adult usage. As with Daisy, large proportions of Billy's noun types across all three categories consist of hapax legomena, which could provide a window into his productive use of nominal inflection.

Table 5.51: The most frequent common noun types in Billy's production

NEC			English		Mixed-language	
Type	Gloss	Tokens	Type	Tokens	Type	Tokens
îch	home	13 *	daycare	11 *	window	4
kâwî	mother	8 *	skidoo	7 *	skidoo	3 *
kûhkum	grandmother	8 *	toy	7 *	bicycle	2 *
pwâchikî	boogeyman	8 *	grade one	6	brother	2
shîm	younger sibling	8 *	pirate	6	bus	2
awâshish	child	7 *	animal	5	chimney	2
uhtâwî	father	7	candy	5	friend	2 *
minitûsh	insect	6	helicopter	5	goalie	2
chimushum	grandfather	5	plane	5	stick	2
nipî	water	4	bicycle	4	key	2
pâshchishikin	(small) gun	4	devil	4	mom(my)	2
pîpî	baby	4 *	goalie	4 *	sock	2
pûshî	cat	4 *	reindeer	4		
tûhwân	ball	4	school	4 *		
ânishkiwishiu	great-grandparent	3	yogurt	4		
ishkwâshish	girl	3	bus	3 *		
iskwâu	woman	3	butterfly	3		
mâtiwâkin	toy/game	3 *	candy	3		
nâpâu	man	3	cane	3		
pîsim	sun	3	door	3		
piyâshîsh	bird	3	macaroni	3		
uhkum	grandmother	3	mom(my)	3		
var. (13)	n/a	2	puppy	3 *		
			summer	3		
			var. (31)	2		

Notes. NEC = Northern East Cree. Var. = Multiple noun types occur with the same number of tokens, with the number of types is indicated in parentheses. * = also occurs among the top 25 common nouns within the same category in adult input from Table 5.6.

Table 5.52: Billy's production of hapax legomena

Nominal category	Total noun types	Hapax	Proportion of hapax
NEC noun	64	29	0.45
English noun	122	68	0.56
Mixed-language noun	30	19	0.63
Total	216	116	0.54

Notes. NEC = Northern East Cree. Hapax = hapax legomenon, a noun type that occurs with just one token in the dataset.

5.4.3. The animacy of nouns in Billy’s speech

Again, because much of noun inflection hinges upon grammatical animacy, Table 5.53 provides a quick look at Billy’s noun types and tokens per animacy category. Here Billy diverges from the other speakers in the dataset, as a majority of his production consists of animate noun types. He does not share the nearly even split between animate and inanimate nouns evident in the speech of the adult, Ani, and Daisy. Like the other children, though, Billy’s tokens are mostly animate, because common topics of his conversations include people and animals.

Table 5.53: Billy’s production of common nouns types, per animacy category

NEC noun animacy	Types	Proportion of types	Tokens	Proportion of tokens	TTR
Animate	39	0.61	115	0.68	0.34
Inanimate	25	0.39	54	0.32	0.46
Total	64	1.00	169	1.00	0.38

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of that stem, whether uninflected or inflected. TTR = type-token ratio.

5.4.4. All inflected vs. uninflected nouns in Billy’s speech

For a first global look at Billy’s usage of NEC nominal inflection, Table 5.54 breaks down Billy’s NEC noun production into inflected and uninflected types and tokens. This table excludes tokens with errors in inflection. Overall Billy produces 61 types and 161 tokens with adult-like inflection. Like the adult and Daisy, Billy inflects more than half of his noun tokens (100/161, 62.11 percent).

Table 5.54: Billy’s production of inflected vs. uninflected NEC nouns

Inflected		Uninflected	
Types	Tokens	Types	Tokens
40	100	32	61

Notes. NEC = Northern East Cree.

Table 5.55 puts Billy’s on-target noun production into the three possible inflectional contexts. In a departure from the other speakers in the dataset, Billy produces a plurality of his types and tokens in only inflected forms (29/61 types, 47.54 percent; 73/161 tokens, 45.34 percent). He produces 11 types (45 tokens) in either context, and along with his 30 types (44 tokens) of mixed-language nouns, which will all play role in furnishing insight into Billy’s

acquisition of NEC nominal inflection. The next section explores Billy’s expressions of possession, the richest context for nominal inflection in NEC.

Table 5.55: Billy’s production of NEC nouns across inflectional contexts

Occur inflected only		Occur uninflected only		Occur in either context	
Types	Tokens	Types	Tokens	Types	Tokens
29	73	21	43	11	45

Notes. NEC = Northern East Cree.

5.4.5. All possessive constructions in Billy’s speech

Throughout his dataset, Billy produces 188 total utterances containing at least one possessive construction (Table 5.56). His proportion of utterances with a possessive construction (0.04) closely resembles production by the adult and Daisy.

Like the other speakers, Billy produces a variety of possessive construction types (Table 5.57), and a majority of utterances with possessives have constructions containing only NEC elements (87/123, 70.73 percent). A predominance of constructions have a noun as the possessee (108/123, 87.80 percent), and all but 12 involve NEC possessive inflection.

Table 5.56: Billy’s noun token production

Session	Child age	Utterances	Utterances containing a POSS construction	Proportion of utterances w/ a POSS construction
B3.02	4;05.04	452	5	0.01
B3.04	4;06.08	282	17	0.06
B3.06	4;07.27	226	6	0.03
B3.07	4;08.21	163	9	0.06
B3.09	4;10.08	242	7	0.03
B3.11	5;00.13	399	21	0.05
B3.13	5;02.12	246	6	0.02
B3.14	5;03.22	150	15	0.1
B3.15	5;05.00	323	11	0.03
B3.17	5;06.27	299	8	0.03
B3.18	5;10.06	391	13	0.03
Totals		3,173	118	0.04

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*.

Table 5.57: Billy’s utterances containing possessive constructions

Language	Type of POSS construction	Utterances	Proportion
NEC	N only	54	0.44
	PSR + DEM	12	0.10
	DEM + N	9	0.07
	PSR + N	7	0.06
	PSR only	3	0.02
	PSR + DEM + N	2	0.02
ENG	POSS.PRO + N/name	11	0.09
Mixed-language	ENG.N w/ NEC.INFL	13	0.11
	NEC.PSR + NEC.DEM + ENG.N w/ NEC.INFL	4	0.03
	NEC.PSR + ENG.N w/ NEC.INFL	2	0.02
	PSR + ENG.N w/ NEC.INFL	1	< 0.01
	NEC.PSR + ENG.N w/ ENG.INFL	1	< 0.01
	ENG.POSS.PRO + ENG.N w/ NEC.INFL	1	< 0.01
	NEC.DEM + ENG.N w/ NEC.INFL +	1	< 0.01
	NEC.N w/ NEC.INFL	1	< 0.01
	ENG.POSS.PRO + ENG.N w/ NEC & ENG.INFL	1	< 0.01
	NEC.DEM + ENG.N w/ NEC.INFL	1	< 0.01
Total		123	1.00

Notes. Individual nominals co-occurring in a possessive construction are separated by a plus sign <+>. The symbol <w/> means “with”, and <w/o> means “without”. DEM = demonstrative. ENG = English. INFL = inflection. N = noun. NEC = Northern East Cree. POSS = possessive. POSS.PRO = possessive pronoun. PSR = possessor.

5.4.6. All possessee nouns involving NEC inflection in Billy’s speech

Table 5.58 lists Billy’s types and tokens of nouns as possesseees taking NEC inflection, including for comparison his overall noun types and tokens. Billy’s possesseees involve 45 different types with 95 total tokens. NEC nouns take up a majority of types (28/45, 62.22 percent) and an even larger proportion of tokens (71/95, 74.74 percent).

For a longitudinal tracking of Billy’s production, Table 5.59 lists his possesseees with NEC inflection per recording session. The totals for Billy’s nouns as possessee types in Table 5.59 differ from those in Table 5.58, which indicates a pattern: Billy repeats 12 individual NEC noun types as possesseees across recording sessions, but he only uses one English type (*mommy*) in a mixed-language possesseees in more than one session. As with Daisy, Billy tends to use a given English noun type with NEC possessive inflection at just one point in time, whereas his usage of NEC nouns as possesseees is more robust and stable.

Table 5.58: Billy's nouns as possessives involving NEC inflection

<i>Nominal category</i>	<i>Nouns as possessives</i>		<i>All nouns</i>	
	<i>Types</i>	<i>Tokens</i>	<i>Types</i>	<i>Tokens</i>
NEC noun	28	71	64	169
Mixed-language noun	17	24	30	44
Total	45	95	94	213

Notes. NEC = Northern East Cree. Type = a distinct noun stem, whether NEC or English. Token = any occurrence of a noun stem.

Table 5.59: Billy's nouns as possessives involving NEC inflection, per session

<i>Session</i>	<i>Child age</i>	<i>Utterances</i>	<i>NEC nouns</i>		<i>Mixed-language nouns</i>	
			<i>Types</i>	<i>Tokens</i>	<i>Types</i>	<i>Tokens</i>
B3.02	4;05.04	452	2	2	1	1
B3.04	4;06.08	282	9	11	2	2
B3.06	4;07.27	226	4	4	0	0
B3.07	4;08.21	163	8	8	1	1
B3.09	4;10.08	242	2	4	1	2
B3.11	5;00.13	399	7	12	4	6
B3.13	5;02.12	246	3	3	1	1
B3.14	5;03.22	150	7	8	4	6
B3.15	5;05.00	323	7	7	1	1
B3.17	5;06.27	299	2	4	1	1
B3.18	5;10.06	391	5	8	2	3
Total		3,173	56	71	18	24

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*.

Lastly, Table 5.60 counts Billy's most frequent types as possessives bearing NEC inflection, in terms of tokens. This table includes his 14 most frequent NEC types and all of his mixed-language types. For easy comparison with adult speech, types that also occur in Table 5.14 are again marked with an asterisk in the "Tokens" column.

Billy's most frequent NEC possessives seem connected to frequency in child-directed speech: 9/14 (64.29 percent) of his NEC types in Table 5.60 also occur in the top possessives for the adult, which includes Billy's top five. Like the two other children, Billy's appears to use NEC possessives that occur more often in input. His use of English stems with NEC inflection does not share such an ostensible connection to frequency in adult speech, as only 5/17 (29.41 percent) of his types also appear in the adult's mixed-inflection possessives.

As with Daisy, (in)alienability may also play some role in Billy's production, because 11/14 (78.57 percent) of his most frequent NEC types are inalienably possessed nouns that must occur

with possessive inflection. The other three types—*pîpî* ‘baby’, *utâpânâskw* ‘car, vehicle’, and *ashtutin* ‘hat’—can occur in speech without such marking.

In another similarity to Daisy, both types for ‘grandmother’ appear among Billy’s most frequent productions. He uses lexicalized *kûhkum* eight times and analyzed stem *uhkum* three times. Looking at these tokens may prove especially revealing for tracing his nominal inflection.

Table 5.60: Most frequent nouns as possessives w/ NEC inflection, in Billy’s production

NEC nouns			Mixed-language nouns	
Type	Gloss	Tokens	Type	Tokens
îch	home	13 *	brother	2
kâwî	mother	8 *	friend	2 *
shîm	younger sibling	8 *	key	2
uhtâwî	father	7 *	mom(my)	2 *
uhkum	grandmother	3 *	skidoo	2 *
ashtutin	hat	2	sock	2
htiwikî	ear	2 *	window	2
pîpî	baby	2 *	bicycle	1 *
shtikwânipîwî	hair	2 *	car	1 *
skut	nose	2	chimney	1
stâs	older brother	2	chip	1
tihchî	hand	2 *	classroom	1
tun	mouth	2	dad(dy)	1
utâpânâskw	car, vehicle	2	goalie stick	1
<i>var.</i> (14)	n/a	1	room	1
			sled	1
			tree	1

Notes. w/ = with. NEC = Northern East Cree. *Var.* = Multiple noun types occur with the same number of tokens, with the number of types is indicated in parentheses. * = also occurs in the top 25 NEC most frequent possessives in adult speech, from Table 5.14.

5.4.7. Summary

Billy produces 1,272 total nominal tokens within 3,173 total utterances across his 11 recording sessions. As with Daisy, Billy’s usage shares several patterns with child-directed speech. He produces nominal tokens and noun tokens at rates similar to those in input. NEC predominates his nominals, where nouns constitute a minority of tokens. However, English takes up a larger proportion of Billy’s noun production than in child-directed speech. Nonetheless, Billy’s expressions of possession also bear similarities to adult input (and Daisy’s speech). Most of his possessive constructions use only NEC elements, and the vast majority of his possessive

expressions use nouns as possessives with NEC inflection. as with Daisy, the frequency of nouns in child-directed speech may play a role in Billy's usage of NEC nouns inside and outside of possessive constructions, but likely not with his English nouns.

5.5. Conclusion

This chapter has surveyed nominal production—with a particular focus on nouns, possessive constructions, and possessive inflection—for all four speakers represented in the dataset. With more than 200 different NEC noun types across nearly 2,000 tokens, child-directed speech provides fertile ground for children to encounter and abstract patterns of NEC nominal inflection. Frequency in input may play a particular role in helping children crack the code of inflection, as many of the adult's most frequent nouns and possessives also occur within the most frequent forms in child speech.

The children each follow and diverge from patterns in adult input in their own particular ways. Each child largely expresses possession through constructions using only NEC elements. Compared to child-directed speech, though, each child uses much more English in their noun production. Particularly in this context of possession, this predominance of English within child speech actually provides a special opportunity to trace the acquisition of NEC nominal inflection, because the children all mark English noun stems with NEC morphology. Because this pattern is relatively infrequent in child-directed speech, these constructions may prove to be testaments to productive child usage of NEC inflection.

Chapter 6: Person marking for a possessor

In this chapter I investigate the acquisition of person marking for a possessor, which occurs in the prefix slot within the affixal template for NEC nouns. The person of a possessor is marked by a prefix on the noun signifying a possessee. Only one prefix can occur on a given noun, and the prefix marks either a first-, second-, third-, or unspecified/indefinite-person possessor. For further details and examples, refer to the grammatical description in Chapter 2.

This chapter begins with a look at person marking for a possessor in child-directed speech (§6.1), and then describes the acquisition of such marking by Ani (§6.2), Daisy (§6.3), and Billy (§6.4). Each section provides a quantitative and qualitative examination of prefix production. As in the previous chapter, the descriptions for each child largely share the same structure, to facilitate more convenient comparison.

6.1. Person marking in adult input

This section describes the usage of person marking for a possessor in child-directed speech. Specifically, it lays out the distribution of prefix tokens and points out patterns in adult input that may help guide children in acquiring person marking. §6.1.1 overviews person prefix tokens throughout child-directed speech in the dataset. §6.1.2 examines production of prefix tokens across noun types. §6.1.3 looks at prefix tokens between alienably and inalienably possessed nouns. §6.1.4 discusses possessee in adult input that do not appear with a person prefix. §6.1.5 summarizes the preceding findings.

6.1.1. All person marking

For a first look at the adult's production of person prefixes, Table 6.1 tabulates all of the tokens for each of the four morphemes (first-, second-, third-person and unspecified/indefinite) throughout the entire dataset. For comparison, Table 6.2 breaks down adult production of tokens per each child's subcorpus.

Altogether the adult produces 693 total prefix tokens but with large disparities in distribution between the morphemes. The bulk of adult input uses second-person prefixes (425/693 tokens, 61.33 percent). This predominance reflects the characteristics of child-directed speech, which is replete with speech acts where the adult addresses the child. Third-person tokens come in second

place (208/693 tokens, (30.01 percent), which means the adult often talks about things belonging to other people who are not present. The adult talks about herself as a possessor infrequently (50/693 tokens, 7.22 percent), and mentions of unspecified/indefinite possessors are relatively rare (10/693 tokens, 1.44 percent).

Table 6.1: Adult person prefix token production

Person prefix	Tokens	Proportion of tokens
P2	425	0.61
P3	208	0.30
P1	50	0.07
PU	10	0.01
Total	693	0.99

Notes. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite. The column “Proportion of tokens” adds up to less than 1.00 because of complications rounding to two, and even to three, decimal places.

Table 6.2: Adult person prefix token production, per subcorpus

Subcorpus	Person prefix tokens				Total per subcorpus
	P2	P3	P1	PU	
Ani	150	72	17	4	243
Daisy	112	64	19	4	199
Billy	163	72	14	2	251
Total per prefix	425	208	50	10	

Notes. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite.

Each child is exposed to hundreds of prefix tokens, and the proportions of each morpheme are relatively consistent across the subcorpora. In other words, each child encounters similar rates of exposure to person prefixes in child-directed speech.

6.1.2. Person marking per noun type

The adult produces nearly seven hundred prefix tokens, but a crucial point is determining the distribution of prefixes across noun types. Individual noun types that take the widest variety of prefixes may provide children with a good opportunity to contrast forms, recognize a pattern, and abstract the prefix slot and the morphemes that can occupy it.

The previous chapter demonstrates that the adult produces 84 NEC noun types (683 tokens) and just seven mixed-language noun types (10 tokens) as possessors bearing NEC inflection

(§6.1.6.). Table 6.3 breaks down the top 25 NEC noun types by total tokens of occurrence with a person prefix. This table includes the category of noun stem, to provide additional insight about inalienable and alienable NEC noun stems. Inalienable stems must always occur with some form of the person prefix. Table 6.4 breaks down all seven noun types from mixed-language possessives. Several important patterns emerge from these two tables.

The first major pattern is that the bulk of person prefix tokens appear on just a minority of noun types. The top 25 NEC noun types account for 531/693 (76.62 percent) total prefix tokens. This represents a Zipfian distribution, as the top 25 types constitute just 27.47 percent of all 91 noun types that occur as possessives. Within the top 25, two stems carry a particularly heavy load: *kâwî* ‘mother’ and *îch* ‘home’ together account for 117 prefix tokens, which represents a large proportion of all prefix tokens (117/693, 16.88 percent). Altogether this token density within the top 25 leaves the other 59 NEC types and seven mixed-language types to carry less than one-fourth of prefix tokens. Mixed-language types are especially few and far between in child-directed speech, and no single type appears with more than two prefix tokens. In brief, a relatively small number of NEC noun types do the vast majority of the work demonstrating to children: 1) where the prefix slot is within the inflectional template for NEC nouns; 2) what information this position encodes; and 3) which morphemes can be used in that position.

Another handful of noun types within the top 25 may play a particular role in this demonstration too: 13 types appear with at least one token each of the first-, second-, and third-person prefixes: *akuhp* ‘coat’, *îpit* ‘tooth’, *kâwî* ‘mother’, *mischisin* ‘shoe’, *pichiwiyan* ‘shirt’, *pîpî* ‘baby’, *piyichîs* ‘pants’, *shchîshikw* ‘eye’, *shtikwân* ‘head’, *tâih* ‘heart’, *tihchî* ‘hand’, *îch* ‘home’, and *wîchâwâkin* ‘friend’. Only one noun type, *tâih* ‘heart’, appears with all four person prefixes. Noun types that appear with more than one type of person prefix may give children additional clues to the position, function, and morphological members of the inflectional template slot.

Table 6.3: Most frequent NEC noun types w/ a person prefix, in adult production

Type	Gloss	Category	Tokens with person prefix				Total
			P2	P3	P1	PU	
kâwî	mother	nad	47	19	1	0	67
îch	home	nid	30	15	5	0	50
wîchâwâkin	friend	na	32	3	2	0	37
shîm	younger sibling	nad	27	7	0	0	34
akuhp	coat	ni	18	11	2	0	31
pîpî	baby	na	17	6	1	0	24
piyichîs	pants	na	13	7	2	0	22
tâhtipiwin	chair	ni	18	4	0	0	22
shchîshikw	eye	nid	10	7	4	0	21
mischisin	shoe	ni	12	7	1	0	20
pichiwiyan	shirt	ni	11	7	1	0	19
tihchî	hand	nid	13	4	1	0	18
îpit	tooth	nid	14	1	2	0	17
shtikwân	head	nid	8	5	3	0	16
chiskutimâchâsiu	teacher	na	14	1	0	0	15
mushum	grandfather	nad	14	0	1	0	15
uhkum	grandmother	nad	9	6	0	0	15
shtikwânipîwî	hair	nid	10	1	0	3	14
mâtiwâkin	toy, game	ni	9	4	0	0	13
htiwikî	ear	nid	8	2	0	1	11
misinihîkin	book	ni	8	3	0	0	11
uhtâwî	father	nad	5	6	0	0	11
mis	older sister	nad	2	8	0	0	10
mîchim	food	ni	5	4	0	0	9
tâih	heart	nid	3	2	2	2	9
Total			357	140	28	6	531

Notes. w/ = with. NEC = Northern East Cree. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. P = possessor. 1 = first person. 2 = second person. 3 = third person. U = unspecified/indefinite.

Third, there is a relatively close split between inalienable and alienable nouns in the top 25. 14 types (308 tokens) are inalienably possessed stems that must always take a prefix, and 11 (223 tokens) are alienably possessed. The frequency of tokens within each category in the top 25 may provide children with important evidence for abstracting semantic and morphosyntactic principles. This next section explores this possibility further.

Table 6.4: All mixed-language noun types w/ a person prefix, in adult production

Type	Tokens with person prefix				Total
	P2	P3	P1	PU	
car	2	0	0	0	2
friend	0	2	0	0	2
skidoo	0	2	0	0	2
aunt	0	1	0	0	1
bicycle	0	1	0	0	1
mommy	0	1	0	0	1
sister	0	1	0	0	1
Total	2	8	0	0	10

Notes. w/ = with. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite.

Finally, English noun stems across mixed-language and English-only nouns may also provide children with some evidence for abstracting patterns regarding the person prefix position. Table 6.5 lists all of the English stems that have at least one token with and one token without a person prefix. Only five types match this criteria, but even in these limited numbers they provide some contrasting examples for children to extrapolate the NEC prefix position, its function, and morphological members.

Table 6.5: English noun types occurring w/ and w/o a prefix, in adult production

Type	Tokens w/ person prefix	Tokens w/o person prefix	Total
skidoo	2	16	18
friend	2	2	4
car	2	1	3
aunt	1	1	2
bicycle	1	1	2
Total	8	21	29

Notes. w/ = “with”. w/o = “without”.

6.1.3. Person marking with inalienable and alienable possession

Almost all of the inalienable noun types within the top 25 (Table 6.3) signify either a kinship relation or body part. This could help children abstract a generalization that such terms belong to the same semantic class and must always take a possessor prefix. The only exception is *îch* ‘home’. However, as the number two stem in Table 6.3, *îch* occurs with a high frequency that may allow children to learn easily that *îch* falls into the same category as kinship terms and words for body parts.

The remaining 11 noun types within the top 25 may provide children with crucial evidence to help them abstract the alienable category of nouns: those that can occur with or without a person prefix, depending upon the context of possession. To shed light on this possibility, Table 6.6 lists these 11 alienable types and their tokens with and without person prefixes.

Table 6.6: Most frequent NEC alienable noun types, in adult production

Type	Gloss	Tokens w/ person prefix	Tokens w/o person prefix	Total
<i>pîpî</i>	baby	24	42	66
<i>misinihîkin</i>	book	11	38	49
<i>tâhtipiwin</i>	chair	22	25	47
<i>mâtiwâkin</i>	toy, game	13	29	42
<i>wîchâwâkin</i>	friend	37	0	37
<i>akuhp</i>	coat	31	1	32
<i>piyichîs</i>	pants	22	2	24
<i>mischisin</i>	shoe	20	1	21
<i>pichiwiwân</i>	shirt	19	1	20
<i>chiskutimâchâsiu</i>	teacher	15	3	18
<i>mîchim</i>	food	9	4	13
Total		223	146	369

Notes. w/ = “with”. w/o = “without”.

Table 6.6 suggests that four noun types may be especially useful for illustrating inflectional patterns to children. The noun stems *pîpî* ‘baby’, *tâhtipiwin* ‘chair’, *mâtiwâkin* ‘toy, game’, and *misinihîkin* ‘book’ each occur in more than ten tokens with and without a person prefix. Perhaps these noun types furnish crucial evidence for children to extrapolate the prefix position, its function, and morphological members.

For some final consideration in this vein, Table 6.7 presents all alienable noun types that have at least: two tokens with a person prefix *and* two tokens without a person prefix. Only 14 types (260 total tokens) fit these criteria. Table 6.25 in the Appendix extends the view to all

alienable noun types that have at least one token fitting each criterion (39 types, 640 tokens). The noun types in Tables 6.7 and 6.25 may serve a critical role in input, because they can illustrate to children the distinction between inalienable and alienable nouns: These contrasting forms show that there exists a class of nouns which only sometimes take a person prefix, and this person prefix only occurs in the context of possession.

In sum, child-directed speech within the dataset for this dissertation provides children with hundreds of opportunities to contrast forms of individual noun types and discern the position and function of person marking for a possessor. However, only a small subset of individual noun types provides more than a handful of opportunities to contrast such forms.

Table 6.7: NEC alienable types: two tokens w/ and w/o a prefix, in adult production

Type	Gloss	Tokens w/ person prefix	Tokens w/o person prefix	Total
pîpî	baby	24	42	66
tâhtipiwin	chair	22	25	47
utâpânâskw	car, vehicle	8	25	33
piyichîs	pants	22	2	24
mîchim	food	9	4	13
ashtutin	hat	8	4	12
mâmâpisun	swing	4	8	12
pîywâshikin	sock	5	5	10
âihkunâu	cake	2	7	9
atim	dog	3	6	9
chîmân	boat	4	5	9
wîhkwâyâ	sock	3	5	8
chûchû	bottle	2	2	4
ût	canoe	2	2	4
Total		118	142	260

Notes. w/ = “with”. w/o = “without”.

6.1.4. Possesseees with no person marking in adult input

Within the dataset, child-directed speech contains no errors in person marking for a possessor. All NEC and mixed-language nouns as possesseees carry a prefix, with no errors of omission or commission of a prefix morpheme. However, mixed-language possesseees present a challenge: One cannot stipulate that NEC possessive inflection is *always* obligatory with mixed-language possesseees, and some possesseees of this type occur without such marking.

Three utterances deserve attention here. In (1–3), the adult produces mixed-language possessee noun phrases but without any NEC inflection. According to the present study’s criteria

for productivity (§4.2.5.), these cannot be classified as errors. Nonetheless, these are the *only* mixed-language possessives in child-directed speech that do not occur with NEC inflection. Some other patterns or principle may be in play.

Example (1) is difficult to account for, because it is the only example in adult input of a possessee consisting of an NEC demonstrative modifying an English noun. No conclusions can be drawn confidently here.

- (1) <◁◁i^a ĩ^b ▷i^h" crackers_x
 Awân mâk uyâh crackers.
 awân mâk u-yâh cracker-s
 who EMPH DEM-NI.OBV.PL cracker-ENG.PL
 ‘Whose crackers are these?’ (Adult, 4;04.04, B1.11, 28:46)

However, perhaps (2–3) represent some kind of principle where possessives occurring with an English possessive pronoun do not take NEC possessive marking. This could be some sort of principle against double-marking possession: If a pronoun expresses possession, then there is no need to mark it on the noun. That could explain why the possessives in (2–3) do not carry any NEC possessive inflection.

- (2) <◁◁i^a ř^h your auntie_x
 Awân chîyi your auntie.
 awân chîyi your aunt-ie
 who 2 2.POSS aunt-DIM
 ‘Who is your auntie?’ (Adult, 5;10.06, B3.18, 19:02)

- (3) Ć^a <Ĵăđ^h ř^h your hockey stick_x
 Tân âshinâkuhch chîyi your hockey stick
 tân âshinâkuhch chîyi your hockey.stick
 where it.appears 2 2.POSS hockey.stick
 ‘What does your hockey stick look like?’ (Adult, 5;10.06, B3.18, 27:03)

There is not much evidence in input attesting to principle, because the adult produces only 12 utterances in the entire dataset that use English possessive pronouns. 10 of these contain English-only noun phrases as the possessee, such as (4–5).

- (4) <◀◀[◌] your friend_x
 Awân your friend.
 awân your friend
 who 2.POSS friend
 ‘Who is your friend?’ (Adult, 4;00.13, A1.35, 08:44)

- (5) Ćσ"Δ your toys_x
 Tânihî your toys.
 tâni-hî your toy-s
 where-NI.PL 2.POSS toy-ENG.PL
 ‘Where are your toys?’ (Adult, 3;00.02, A1.21, 20:18)

That leaves only the two mixed-language noun phrases in (2–3) as examples attesting to the possible existence of a principle against marking possessives co-occurring with an English possessive pronoun. Despite this dearth of evidence in child-directed speech, §§6.2–6.4 demonstrate that children nonetheless may have abstracted and applied this principle.

6.1.5. Summary

This section describes patterns in person marking for a possessor within child-directed speech throughout the dataset. Children acquiring NEC face the challenges of discovering the presence, position, function, and morphological members of the prefix position within the affixal template for NEC nouns.

Adult input contains nearly 700 tokens of person prefixes, but most of the tokens children encounter mark either second- or third-person possessors. The vast majority of person prefixes tokens appear on just 25 out of 91 noun types. These 25 types may also provide children with evidence to extrapolate the semantic and morphological patterns delineating two major noun classes in NEC: inalienably and alienably possessed nouns. The former require a prefix marking

person of a possessor, while the latter require a prefix only in contexts of possession. Adult input provides children with hundreds of opportunities to contrast alienable noun types with and without person prefixes, although the bulk of this work is done by a small number of noun types.

6.2. Person marking in Ani's speech

This section describes the acquisition of person marking for a possessor by Ani, the youngest child represented in the dataset. §6.2.1 presents all of Ani's prefix tokens. §6.2.2 considers the extent to which Ani acquires productive usage of the prefixes marking first-person, second-person, and third-person possessors. §6.2.3 discusses Ani's possesseees that do not bear a person prefix and yet do not appear to be errors. §6.2.4 summarizes findings.

6.2.1. All person marking

Throughout her sample, Ani produces 36 total tokens of NEC and mixed-language nouns as possesseees. This total is much smaller than what occurs in the sample for child-directed speech and the two other children.

Table 6.8 counts all tokens of Ani's NEC possesseees where person marking of a possessor is obligatory. Nine of Ani's prefix tokens are used in an adult-like manner, and she has seven errors of omission but no errors of commission.

Table 6.9 counts Ani's person prefix tokens across her mixed-language possesseees in obligatory contexts. Ani produces seven possesseee tokens with adult-like application of a person prefix and another six tokens with prefix errors.

Table 6.8: Ani's person prefixes w/ NEC possesseees, in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Prop. of errors
P1	3	1	0	4	0.25
P2	5	0	0	5	0.00
P3	1	6	0	7	0.86
PU	0	0	0	0	0.00
Total	9	7	0	16	0.44

Notes. P = possessor. 1 = first person. 2 = second person. 3 = third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Table 6.9: Ani's person prefixes w/ mixed-language possessives, in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Prop. of errors
P1	1	1	1	3	0.67
P2	0	1	0	1	1.00
P3	6	3	0	9	0.33
PU	0	0	0	0	0.00
Total	7	5	1	13	0.46

Notes. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

To summarize so far, Ani produces a total of 29 possessee tokens where the usage of a person prefix is obligatory (Table 6.10). 16 of these are NEC-only tokens and 13 are mixed-language tokens.

Table 6.10: Ani's person prefixes in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Proportion of errors
P1	4	2	1	7	0.42
P2	5	1	0	6	0.17
P3	7	9	0	16	0.56
PU	0	0	0	0	0.00
Total	16	12	1	29	0.45

Notes. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission.

In total, the child uses prefixes in an adult-like manner 16 times and produces 13 possessee tokens with errors. These are overall totals from across Ani's 15 recording sessions, and they constitute low numbers compared to the speech of the adult and other two children. Therefore, the following section shines more light onto the unfolding of the acquisitional process over time and the emergence of productive person marking for a possessor.

6.2.2. Productivity of person marking

This section considers the extent to which Ani demonstrates productivity with the four prefixes marking the person of a possessor. She produces no tokens of the unspecified/indefinite possessor prefix *mi-*, which is also rare in child-directed speech, and so the dataset presents no evidence regarding Ani's productivity with that morpheme.

Table 6.11 breaks down her production of the other three prefixes across the eight recording sessions containing obligatory contexts for a prefix. The ensuing sections provide a quantitative and qualitative look at Ani’s production of these morphemes in obligatory contexts: The first-person prefix is explored in §6.2.2.1, the second-person prefix in §6.2.2.2, and the third-person prefix in §6.2.2.3.

Table 6.11: Ani’s person prefixes in obligatory contexts, per recording session

Session	Child age	P1 tokens		P2 tokens		P3 tokens	
		Adult-like	Errors	Adult-like	Errors	Adult-like	Errors
A1.06	2;03.24	0	0	0	0	1	0
A1.12	2;07.06	0	1	0	0	0	3
A1.15	2;08.23	0	0	0	0	0	1
A1.24	3;02.05	0	0	0	0	0	1
A1.26	3;04.09	0	0	0	0	0	1
A1.30	3;06.23	3	0	0	0	0	0
A1.35	4;00.13	0	1	3	1	2	3
A1.37	4;03.07	1	1	2	0	4	0
Total		4	3	5	1	7	9

Notes. P = possessor. 1 = first person. 2 = second person. 3 = third person. U = unspecified/indefinite.

6.2.2.1. *First-person possessor marking*

Ani uses no nouns as possessees in her first recording session at age 2;01.12, and her first obligatory context for a first-person prefix occurs at age 2;07.06, in (6). She produces a bare noun *chûchû* ‘bottle’ as the possesser, but that noun should have a person prefix and possessive suffix (Margaret, REH1-031, 9:39). This is an error of omission for the prefix.

- (6) $\acute{\sigma}\text{-}\text{r} \triangleright \text{JJ}^{\text{u}}_{\text{x}}$
 Nîyi û chûchûsh.
 Target: nîyi û ni-chûchû-m-sh
 Actual: nîyi û *Ø-chûchû-*Ø-sh
 1 DEM 1-bottle-POSS-DIM
 ‘This is my bottle’ (Ani, 2;07.06, A1.12, 28:54)

Ani’s next usage of the first-person prefix does not come until age 3;06.23, as in (7). At this point she correctly applies the prefix *ni-* to three different noun types. Two of these possessers

are NEC (*nimisichisin* ‘my shoe’ and *nipichiwiyân* ‘my shirt’), and one is mixed-language (*nishoes* ‘my shoes’).

- (7) ᑕᑦ ᓂᑦ ᓂᑦ ᑎᑦ ᑎᑦ ᑎᑦ
 Tân nîyi nimischisin.
 tân nîyi ni-mischisin
 where 1 1-shoe
 ‘Where is my shoe?’ (Ani, 3;06.23, A1.30, 06:17)

Ani does not use the prefix in an adult-like manner in the following session. It only appears in an error of commission: In (8), Ani applies the first-person prefix when the third-person morpheme is required (Margaret, REH1-015, 4:55).

- (8) <ᑦ ᑎᑦ ᑎᑦ ᑎᑦ ᑎᑦ ᑎᑦ
 Barbie uchairimh.
 Target: Barbie u-chair-im-h
 Actual: Barbie *ni-chair-im-h
 name 3-chair-POSS-Q
 ‘Barbie’s chair?’ (Ani, 4;00.13, A1.35, 14:49)

Ani’s final usage of first-person marking comes at age 4;03.07. Here she has one adult-like token (9) (Margaret, REH1-026, 1:04:46) and one error of omission (10) (Margaret, REH1-026, 1:00:15).

- (9) ᑎᑦ ᑎᑦ ᑎᑦ ᑎᑦ ᑎᑦ
 Îhî nitikuhpiyiu.
 îhî nit-ikuhp-iyiu
 yes 2-coat-NI.OBV
 ‘Yes, my coat’ (Ani, 4;03.07, A1.37, 49:13)

- (10) $\sigma\text{-}\nabla\text{-}\nabla\text{-}\nabla$
 nîyi nibedim
 Target: nîyi ni-bed-im
 Actual: nîyi * \emptyset -bed-im
 ‘my bed’ (Ani, 4;03.07, A1.37, 43:54)

According to the criteria for productivity adopted by the present study (§4.2.5.), Ani does not demonstrate productive usage of the first-person prefix in her data sample. She does not use the prefix correctly in two consecutive sessions, nor does she produce it in an adult-like manner in enough obligatory contexts.

6.2.2.2. *Second-person possessor marking*

Ani does not use the second-person prefix until age 4;00.13. At this age, she applies it correctly to three tokens of *îpit* ‘tooth’ (11) (Margaret, REH1-015, 49:08), and she has one error of omission with *chair* (12) (Margaret, REH1-015, 42:30).

- (11) $\sigma\text{-}\nabla\text{-}\hat{\nabla}\text{-}\wedge^c\text{-}x$
 Nimui chîpit.
 nimui ch-îpit
 NEG 2-tooth
 ‘Not your tooth.’ (Ani, 4;00.13, A1.35, 19:59)

- (12) $\hat{\nabla}\text{-}\triangleright\text{-}\triangleleft\text{-}\nabla\text{-}\nabla\text{-}\nabla\text{-}x$
 Chîyi û âi chichairim.
 Target: chîyi û âi chi-chair-im
 Actual: chîyi û âi * \emptyset -chair-im
 2 DEM HES 2-chair-POSS
 ‘This is uh, your chair.’ (Ani, 4;00.13, A1.35, 19:59)

Ani’s following and final usage of the prefix occurs in the very next recording session. At age 4;03.07 she produces two adult-like tokens of another type (*ich* ‘home’), each with the prefix: *chîchinâhch* ‘at our house’.

Ani uses the second-person prefix correctly in two successive sessions, she uses it on two different noun types, and she uses it correctly in more than 80 percent of obligatory contexts by age 4;03.07 (5/6 contexts, 83.33 percent). However, the sample still does not offer enough evidence that she has acquired the morpheme productively, because she does not meet the last criterion from §4.2.5.: She does not use either noun type in a word form without the prefix. In fact, her only uses of *îpit* ‘tooth’ and *ich* ‘home’ are tokens that occur with the second-person prefix.

6.2.2.3. *Third-person possessor marking*

Ani’s first obligatory context for a third-person prefix appears at age 2;03.24, which is represented in (13). Ani’s possessee is adult-like, even though her demonstrative is missing the required *-h* (Margaret, REH1-010, 45:17). Interpreting her production of his particular possessee is tricky, because the third-person possessor prefix *u-* is absorbed by a stem like *uhtâwî* ‘father’, which begins with /*ʊ*/ (Collette, 2014, p. 255). The present study gives children the benefit of the doubt, and so it is assumed that Ani produces the correct allomorph of the prefix *u-* in this instance.

- (13) ĩσ·î" ▷"Ĉ:Ä"x
 Mâniyâh uhtâwîh.
 Target: mâni-yâ-h Ø-uhtâwî-h
 Actual: mâni-yâ-*Ø Ø-uhtâwî-h
 DEM-OBV-NA 3-father-NA.OBV
 ‘That is his father.’ (Ani, A1.06, 2;03.24, 06:59)

After this age point, Ani has six tokens with errors of omission of the prefix, across four different recording sessions, between ages 2;07.06 and 3;04.09.

At age 4;00.13, Ani has five obligatory contexts for the third-person prefix. She produces the prefix in an adult-like manner in two contexts, as in (14) (Margaret, REH1-015, 27:34).

However, she also has three contexts with errors of omission, as in (15) (Margaret, REH1-015, 16:40/18:57).

(14) ▷Vŋ^l (name)_x
 ubedim (name)
 u-bed-im (name)
 3-bed-POSS (name)
 ‘her bed, (name)’s’ (Ani, 4;00.13, A1.35, 02:54)

(15) ·◁Λ^l Ì Ì▷▷ ▷Vŋ^l σÌ_x
 Wâpim mâ mâuyâ ubedim nimâ
 Target: wâpim mâ mâu-yâ u-bed-im nimâ
 Actual: wâpim mâ mâu-*Ø *Ø-bedim nimâ
 look.at.it.IMP EMPH DEM-NI.OBV.SG 3-bed-POSS NEG
 ‘Look, this one here, it’s her bed, right?’ (Ani, 4;00.13, A1.35, 2:58)

For Ani’s final recording session at age 4;03.07, though, she has no errors and applies the prefix in an adult-like fashion in all four obligatory contexts: *upencilimh* ‘her/his pencil’, *uscissorimh* ‘her/his scissors’, and *ufriendimh* ‘her/his friend’ (two tokens). By this point she has also used four of these noun types in contrasting word forms without the first-person prefix:

- bare noun *friend* (one token)
- bare noun *pencil* (five tokens)
- bare noun *purse* (one token)
- the word form *scissors* (two tokens)

In the end, Ani demonstrates productive usage of the third-person prefix at age 4;03.07, because she meets all four criteria for productivity (§4.2.5.). She has used the prefix in two consecutive sessions; she has applied it correctly to at least two different noun types; she has used at least two of those types in word forms without the prefix; and she has produced the prefix correctly in 100 percent of obligatory contexts.

6.3.3. Possible connections to patterns in adult input

This section evaluates Ani’s production in light of particular aspects of child-directed speech: the frequency of noun types with person marking (see §6.1.2) and the contrast between inalienable and alienable nouns (see §6.1.3).

6.3.3.1. Person marking per noun type

Table 6.12 tabulates all of Ani’s 18 noun types as possessees in obligatory contexts requiring a person prefix. Types that also appear in the adult’s most frequent noun types with a person prefix (Tables 6.3–6.4) are indicated with an asterisk.

Table 6.12: Ani’s noun types w/ a person prefix

Type	Gloss	Category	Tokens with person prefix						Total
			P1		P2		P3		
			A-L	Err.	A-L	Err.	A-L	Err.	
chûchû	bottle	ni	0	1	0	0	0	3	4
bed	bed	eng	0	1	0	0	1	1	3
chair	chair	eng	0	1	0	1	0	1	3
îpit *	tooth	nid	0	0	3	0	0	0	3
friend *	friend	eng	0	0	0	0	2	0	2
îch *	home	nid	0	0	2	0	0	0	2
akuhp *	coat	ni	1	0	0	0	0	0	1
Barbie	Barbie	eng	0	0	0	0	0	1	1
mischisin *	shoe	ni	1	0	0	0	0	0	1
pencil	pencil	eng	0	0	0	0	1	0	1
pichiwiyan *	shirt	ni	1	0	0	0	0	0	1
piyichîs *	pants	na	0	0	0	0	0	1	1
purse	purse	eng	0	0	0	0	1	0	1
pûshî	cat	na	0	0	0	0	0	1	1
scissors	scissors	eng	0	0	0	0	1	0	1
shoe	shoe	eng	1	0	0	0	0	0	1
uhtâwî *	father	nad	0	0	0	0	1	0	1
wâpuyân	blanket	ni	0	0	0	0	0	1	1
Total			4	3	5	1	7	9	29

Notes. w/ = with. NEC = Northern East Cree. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. P = possessor. 1 = first person. 2 = second person. 3 = third person. A-L = adult-like. Err. = errors. * = type also appears in Tables 6.3–6.4.

There may be a connection between Ani’s adult-like production of NEC possessives and their frequency with a person prefix in child-directed speech. Most of Ani’s NEC possessives also occur among the most frequent possessives in adult input. The exceptions are *chûchû* ‘bottle’, *pûshî* ‘cat’, and *wâpuyân* ‘blanket’—none of which Ani uses in an adult-like form with a prefix. Crucially, Ani’s only noun types that occur as on-target NEC possessives (*akuhp* ‘coat’, *îpit* ‘tooth’, *mischisin* ‘shoe’, *uhtâwî* ‘father’, and *îch* ‘home’) are those that are also among the most frequent types with a prefix in adult input.

However, Ani’s production of English possessives does not bear this same relationship to frequency in adult input. She does use one type that also occurs in adult speech with a person prefix: Ani produces two tokens of *ufriendimh* ‘her/his friend’, which is the same word form the adult uses in her two tokens of *friend* as a mixed-language possessive. But the rest of Ani’s English types as mixed-language possessives are not found in child-directed speech. English possessives are much rarer in child-directed speech, and so Ani’s production in this area must be a demonstration of her own abstraction and application of the rules of person prefix usage.

6.3.3.1. *Person marking with inalienable and alienable possession*

Ani produces only three NEC types that are inalienably possessed (*îpit* ‘tooth’, *uhtâwî* ‘father’, and *îch* ‘home’). All of her six tokens here are adult-like, and again, these types are among the most frequent in input.

Alienable NEC noun types can have word forms with or without a prefix, depending upon the context of possession. Of Ani’s seven alienable types, she produces just one type with tokens that contrast word forms with and without a person prefix: *mischisin* ‘shoe’. At age 3;06.23, Ani has seven total tokens of the type. One bears a first-person prefix (see example (7) above), while the other six tokens are bare noun stems, as in (16).

- (16) ʔʔʔʔ <ʔʔ_x
 Mischisin an.
 mischisin an
 shoe DEM.DIST
 ‘That is a shoe.’ (Ani, 3;06.23, A1.30, 21:28)

This usage of contrasting forms indicates her knowledge of the person prefix position in the NEC noun template by this age point. In fact, this age point also marks Ani's first production of adult-like usage of such person marking since age 2;03.24. From age 3;06.23 onward, Ani's possessee tokens are primarily adult-like with their person prefixes (15/21 tokens, 71.43 percent). Thus, 3;06.23 appears to be a milestone in Ani's development: This is when she reveals her understanding of the position, function, and morphological members of the inflectional template slot marking person of a possessor.

6.2.4. Possessee with no person marking

Like the adult (§6.1.4), Ani produces some mixed-language possessee noun phrases where no person prefix is used, and yet these do not clearly constitute errors in obligatory contexts. None of these noun tokens occur with any NEC possessive inflection, so they are not considered to have errors in person marking. Altogether Ani has seven such tokens in the sample.

Five of these tokens occur without an English possessive pronoun, but they all do occur with an NEC personal pronoun signifying a possessor, as in (17). In §6.1.4, I postulate that perhaps children could extrapolate a principle from adult input that prohibits NEC possessive inflection when a possessive pronoun is used. These five tokens do not directly support this possibility, because NEC pronouns such as *nîyi* 'I, me, myself, my, mine' do not necessarily convey possession in the same manner as an English possessive pronoun such as *my*. Furthermore, Ani does not generalize a principle where an NEC pronoun prohibits possessive inflection on the noun, because she has utterances like (10), where an NEC pronoun co-occurs with a possessive suffix on *bedim*.

- (17) ǎǎǎǎ car_x
 Nîyi û car.
 nîyi û car
 1 DEM.PXL car
 'This car is mine.' (Ani, 3;02.05, A1.24, 18:30)

However, the two remaining tokens do occur with an English possessive pronoun, as in (18). These support the postulation from §6.1.4 but they do not necessarily explain what is going on the five examples like (17).

- (18) ḲḲ ḌḌḌḌ ḍḍ my pencil_x
Tâpâ ihtikun nîyi my pencil.
tâpâ ihtikun nîyi my pencil
NEG it.is 1 1SG.POSS pencil
'It's not there, my pencil!' (Ani, 4;03.07, A1.37, 37:42)

6.2.4. Summary

Ani produces far fewer nouns that require marking the person of a possessor than what occurs in child-directed speech. Within this limited selection of data, some circumscribed conclusions can be drawn about Ani's acquisition of person marking.

Age 3;06.23 seems to be a crucial milestone, where Ani demonstrates her knowledge of the person prefix position within the affixal template for NEC nouns. By the end of her dataset at age 4;03.07, though, she has evinced productive knowledge of only the prefix marking a third-person possessor. Her usage of the second-person prefix comes close to satisfying the criteria for productivity, but her application of the first-person prefix does not. She does not use the unspecified/indefinite possessor prefix in the sample.

Patterns in adult input may be connected to particular aspects of Ani's production: Her only adult-like applications of a person prefix on NEC nouns comes with types that most frequently occur with prefixes in child-directed speech. Ani's mixed-language possessives seem more independent from input, and these indeed provide a crucial window into her productive acquisition of person marking for a possessor.

6.3. Person marking in Daisy's speech

This section lays out Daisy's usage of person marking for a possessor, from age 3;08.10 to 5;10.02. Her data begins much later than Ani's sample, although the two children overlap in age for approximately seven months, and Daisy's sample also covers an additional 19 months of development. Daisy produces much more data pertaining to the person prefix. This may be a

function of inter-child variability, as Daisy seems to be the most linguistically engaged and precocious child represented in the corpus.

6.3.1. All person marking

Table 6.13 tabulates Daisy’s person prefixes in obligatory contexts with NEC-only possessee nouns, and Table 6.14 breaks down her tokens in obligatory contexts with mixed-language possessee. Again, for the present study, a mixed-language possessee is considered to represent an obligatory context for a prefix only if it carries some other NEC possessive inflection.

Table 6.13: Daisy’s person prefixes w/ NEC possessee, in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Prop. of errors
P1	89	0	0	89	0.00
P2	21	0	1	22	0.05
P3	102	1	0	103	0.01
PU	5	0	1	6	0.17
Total	217	1	2	220	0.01

Notes. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Table 6.14: Daisy’s person prefixes w/ mixed-language possessee, in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Prop. of errors
P1	5	0	0	5	0.00
P2	2	0	0	2	0.00
P3	16	0	0	16	0.00
PU	0	0	0	0	0.00
Total	23	0	0	23	0.00

Notes. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Altogether Daisy produces 240 adult-like person prefix tokens, which exceeds the 199 tokens in child-directed speech in her subcorpus (Table 6.2). With her NEC possessee, Daisy produces 217 adult-like prefix tokens and only three errors. One of these errors is especially interesting and is addressed in (§6.3.2.2). Daisy produces 23 prefixes on mixed-language nouns, with no errors.

Like the adult, Daisy’s tokens are imbalanced between the four prefixes, and unspecified/indefinite possessor marking is relatively uncommon. Unlike the adult, though,

Daisy uses mostly third- and first-person prefixes, while second-person marking occurs in just 23/240 prefix tokens (9.58 percent). This difference between Daisy and the adult reflects the characteristics of child-adult interactions within the CCLAS corpus. To spur conversation, the adult typically addresses Daisy and asks the child about herself, her interests, and the lives of Daisy and her family. Daisy primarily tells stories about people and animals, talks about her interests, and relays things that have happened to herself, her friends, and family members.

Table 6.15 summarizes Daisy’s production in all obligatory contexts. Adult speech in the dataset contains no errors with marking person of the possessor, and Daisy’s overall error rate here is very low. The next section explores Daisy’s productive usage of each prefix.

Table 6.15: Daisy’s person prefixes in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Prop. of errors
P1	94	0	0	94	0.00
P2	23	0	1	24	0.04
P3	118	1	0	119	0.01
PU	5	0	1	6	0.17
Total	240	1	2	243	0.01

Notes. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

6.3.2. Productivity of person marking

This section explores how Daisy demonstrates productivity with each morpheme marking person of a possessor. To provide a picture of her usage over time, Table 6.16 lists Daisy’s prefix tokens per recording session. As in §6.2.2, the next sections provide a quantitative and qualitative examination of each prefix morpheme in obligatory contexts.

- stem *kâwî* ‘mother’ with the second-person prefix in *chikâwî* ‘your mother’ (one token)
- bare stem *minihkwâkin* ‘cup’ (three tokens)
- stem *îch* ‘home’ in the inflected form *wîchîwâhch* ‘at their house’ (two tokens).

At this age point, Daisy’s production of the first-person prefix is also free of errors, surpassing the 80-percent threshold for accuracy. Therefore, Daisy has demonstrated productive usage of marking for a first-person possessor at age 3;09.22.

6.3.2.2. *Second-person possessor marking*

Daisy uses second-person possessor marking far less, and she begins with an error of commission at age 3;08.10. In (20) she means to say ‘my teeth’ but produces two person prefixes on the stem. This error of commission demonstrates that Daisy is aware of the person prefix position within the affixal template for nouns.

- (20) ʔΛ^e
 nîpith
 Target: n-îpit-h
 Actual: ni-ch-îpit-h
 1-*2-tooth-NI.PL
 ‘my teeth’ (Daisy, 3;08.10, B1.01, 19:36)

This error also indicates a particular facet of the acquisition of person marking: It is very likely that the children all begin by acquiring the stem for ‘tooth’ with an unanalyzed second-person prefix. Billy makes the same double-marking error at age 4;06.08 (§6.4.2.2.), and he produces no other form of ‘tooth’ aside from that one token. Ani produces three tokens of *chîpit* ‘your tooth’ and no other word form using *îpit* ‘tooth’. This production probably has a direct connection to frequency in child-directed speech: The stem *îpit* ‘tooth’ is one of the 25 most common types to appear with a person prefix in adult input, and 14/17 of these tokens are *chîpit* ‘your tooth’ (Table 6.3). Daisy does indeed analyze the stem by age 4;02.06, where she produces one adult-like token of *wîpith* ‘her/his teeth’.

Daisy's first correct application of the second-person prefix comes at age 3;09.01, with one token of *chikâwî* 'your mother'. In the following recording session at 3;09.22, she produces another four noun types with the person prefix: NEC types *âmihkwân* 'spoon', *ichishî* 'intestines' (she means 'stomach'), and *pîpî* 'baby' (21), along with the English type *phone* (22).

(21) ▷↳ ◁î ðŋσΓ·◁° ƀĂĂΓ^w_x
 Uyâ â kûtinimiwâu chipîmish.
 u-yâ â kûtinimiwâu chi-pîpî-m-ish
 DEM.PXL-NI.OBV Q you.buy.it.for.her/him 2-baby-POSS-DIM
 'Are you buying this for your baby?' (Daisy, 3;09.22, B1.03, 13:20)

(22) ▷ŋ" ƀƀ·◁ ƀ<"▷ƀΔΓ° ◁î_x
 Utih kiyipwâ chiphoneimiu â.
 u-tih kiyipwâ chi-phone-im-iu â
 DEM.PXL-LOC of.course 2-phone-POSS-1PL.INCL.PSR Q
 'This is where our phone is, OK?' (Daisy, 3;09.22, B1.03, 29:21)

By this age point, Daisy has also used all five of these noun types in contrasting word forms without the second-person prefix:

- bare stem *âmihkwân* 'spoon' (two tokens)
- stem *ichishî* with the third-person prefix in *utichishî* 'her/his intestines' (two tokens)
- stem *kâwî* with the first-person prefix in *nikâwî* 'my mother' (seven tokens)
- stem *pîpî* with no person prefix (four tokens) and with the third-person prefix in *upîpîmish-h* 'her/his little baby' (two tokens)
- bare stem *phone* (four tokens)

Daisy's production of forms with the second-person prefix are all error free at this age as well. Therefore, at age 3;09.22 the child has demonstrated productive usage of marking for a second-person possessor.

6.3.2.3. *Third-person possessor marking*

During her first recording session at 3;08.10, Daisy correctly uses four different noun types with a third-person prefix: *umischisinishh* ‘her/his little shoes’, *upîpîmishh* ‘her/his little baby’, *uskât* ‘her/his leg’, and *utistâs* ‘her/his older brother’. This distribution is another piece of evidence attesting to Daisy’s identification of the prefix position within the noun template.

In her next session, she omits the required prefix in the only obligatory context (23) (Margaret, REH1-025, 2:47). This is her only error in applying the third-person prefix within the dataset. During this utterance, though, she is playing around and using a silly voice, and so this may have some effect on her production of morphology.

- (23) ▷^∧∩"▷↳ρ^a"
 upitihuyâkinh
 Target: u-pitihuyâkin-h
 Actual: *∅-pitihuyâkin-h
 3-fishing.catch-NA.OBV
 ‘his catch’ (Daisy, 3;08.10, B1.01, 6:32)

Over the course of the next two recording sessions, Daisy uses 31 tokens of the prefix across 23 different noun types (20 NEC types and three English types), as in (24) and (25).

- (24) ǎ^uĈ·<∩ Γ·↳Jρ^o" ▷↳.bσΓ^u"x
 Nâstâpwâh miywâshiyuh uchâkwânimish-h.
 nâstâpwâh miywâshi-yiuh u-châkwân-im-ish-h
 very.much it.is.pretty-NI.OBV.PL 3-something-POSS-DIM-NI.PL
 ‘Her little things (clothes) are very nice.’ (Daisy, 3;11.11, B1.04, 10:32)

She produces one last token of *mîwit* ‘someone’s bag, a bag’ in her next session at 4;04.04. At this point she has used the unspecified/indefinite person prefix in two consecutive sessions on two different noun types. However, by this age she uses only one type (*tihchî* ‘hand’) in contrasting word forms: *nitihchîhch* ‘on my hand’ (three tokens) and *utihchîh* ‘her/his hand’ (two tokens). Therefore, the sample does not provide enough evidence to determine that Daisy has acquired productive usage of the unspecified/indefinite person possessor prefix.

6.3.3. Possible connections to adult input

This section compares Daisy’s production to two major patterns in child-directed speech: the frequency of noun types with person marking (see §6.1.2) and the contrast between inalienable and alienable nouns in frequent types (see §6.1.3).

6.3.3.1. Person marking per noun type

Throughout the dataset, Daisy produces 60 total noun types in obligatory contexts requiring a person prefix: 46 types in NEC-only possessives and 14 English types in mixed-language possessives. Table 6.17 presents Daisy’s most common noun types in these contexts, by total number of prefix tokens. She has 13 types that appear with two prefix tokens, and 28 types with just one token, and so these are not included in Table 6.17. Types that also appear in the adult’s most frequent noun types with a person prefix (Tables 6.3–6.4) are marked with an asterisk. Daisy’s usage of person prefixes bears several similarities to patterns in child-directed speech.

First, most of Daisy’s prefix production comes on noun types that she encounters frequently in adult input. A majority of the child’s most frequent types with a person prefix sit among the adult’s most frequent types: 12/19 types (63.16 percent) for Daisy also appear in Tables 6.3–6.4. In fact, all seven of Daisy’s noun types with the highest frequencies of prefix tokens are also among the adult’s most frequent.

Second, as in adult input, the bulk of Daisy’s person prefix tokens appear on a minority of noun types. Daisy’s entire sample has 243 contexts requiring a prefix token, and the 19 types in Table 6.17 account for 189/243 (77.78 percent) of these contexts. This means that just 19/60 types (31.67 percent) carry more than 75 percent of Daisy’s prefix tokens. Just as with the adult,

the two types *kâwî* ‘mother’ and *îch* ‘home’ carry the heaviest prefix token load in Daisy’s speech too.

Table 6.17: Daisy’s most common noun types with a person prefix

Type	Gloss	Cat.	Tokens with person prefix								Total
			P1		P2		P3		PU		
			Ad.	Err.	Ad.	Err.	Ad.	Err.	Ad.	Err.	
<i>kâwî</i> *	mother	nad	32	0	2	0	11	0	0	0	45
<i>îch</i> *	home	nid	17	0	1	0	19	0	0	0	37
<i>pîpî</i> *	baby	na	9	0	11	0	2	0	0	0	22
<i>uhtâwî</i> *	father	nad	7	0	1	0	5	0	0	0	13
<i>tihchî</i> *	hand	nid	5	0	0	0	3	0	2	0	10
<i>wîchâwâkin</i> *	friend	na	5	0	1	0	3	0	0	0	9
<i>uhkum</i> *	grandmother	nad	4	0	0	0	4	0	0	0	8
<i>nipâwin</i>	bed	ni	2	0	0	0	3	0	0	0	5
<i>shchîshikw</i> *	eye	nid	0	0	0	0	5	0	0	0	5
<i>shtikwân</i> *	head	nid	0	0	0	0	4	0	0	1	5
<i>skât</i>	leg	nid	0	0	0	0	5	0	0	0	5
<i>ichishî</i>	intestines	nad	0	0	1	0	3	0	0	0	4
<i>friend</i> *	friend	eng	0	0	0	0	3	0	0	0	3
<i>name</i>	name	eng	0	0	0	0	3	0	0	0	3
<i>phone</i>	phone	eng	1	0	2	0	0	0	0	0	3
<i>awâshish</i>	child	na	0	0	0	0	3	0	0	0	3
<i>ichikum</i>	phlegm, mucus	nad	2	0	0	0	1	0	0	0	3
<i>shîm</i> *	younger sibling	nad	0	0	1	0	2	0	0	0	3
<i>mischisin</i> *	shoe	ni	0	0	0	0	3	0	0	0	3
Total			84	0	20	0	82	0	2	1	189

Notes. NEC = Northern East Cree. Cat. = category. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. P = possessor. 1 = first person. 2 = second person. 3 = third person. U = unspecified/indefinite. Ad. = adult-like. Err. = errors. * = type also appears in Tables 6.3–6.4.

Daisy has only five noun types that each appear with at least one token of the first-, second-, and third-person prefixes: *kâwî* ‘mother’, *pîpî* ‘baby’, *uhtâwî* ‘father’, *îch* ‘home’, and *wîchâwâkin* ‘friend’. All of these types except for *uhtâwî* also carry each of the three prefixes in adult speech.

Finally, as with Ani, Daisy’s production of English noun types with person prefixes seems to be more independent from adult input than her production of NEC types. Daisy only has one English type that also appears with a prefix in child-directed speech: She produces three tokens of *ufriendimh* ‘her/his friend’. Again, this is the only word form that the adult and Ani each use

in their mixed-language possessives with *friend*. The rest of Daisy's English stems with NEC person prefixes directly reflect her own productive usage of person marking for a possessor.

6.3.3.2. *Person marking with inalienable and alienable possession*

Again, inalienable and alienable noun types primarily differ from each other in that the former must always appear with a person prefix. Of Daisy's 46 types in NEC-only possessives, 22 are inalienably possessed. All but two of these types signify a kinship relation or body part (or bodily secretion): *îwit* 'bag' and *îch* 'home'.

The type *îch* is among the adult's very most frequent types (Table 6.3), but *îwit* is not among the top 25 types with a prefix in adult input, because this list ends with types that have nine total tokens with a prefix. However, *îwit* is still among elite company in terms of frequency: With eight total tokens, it is right outside the top 25 in adult input. This frequency for both types in input may have helped Daisy learn that they are exceptions that fall into the same inflectional category as kinship term and words for body parts.

Daisy's production of alienably possessed nouns shines additional light onto her acquisition of NEC nominal inflection. Throughout her dataset, Daisy produces 92 total alienable NEC noun types, but only 24 in obligatory contexts requiring a person prefix. Daisy's usage of alienable noun types inside and outside of these obligatory contexts provides the opportunity to demonstrate her knowledge that this category of nouns should only take a person prefix as possessives. Table 6.18 lists the 14 alienable types that Daisy uses in both contexts. Types that also occur among the alienable nouns that the adult uses with and without a prefix (Table 6.6) are marked with an asterisk.

In §6.6.3, I postulated that four noun types (*pîpî* 'baby', *tâhtipiwin* 'chair', *mâtiwâkin* 'toy, game', and *misinihîkin* 'book') may be especially useful for illustrating inflectional patterns to children. Daisy only produces two of these types (*pîpî* and *mâtiwâkin*) inside and outside contexts requiring a person prefix. However, her relatively high frequencies of *pîpî* 'baby' across both contexts in particular may illustrate that this noun type does indeed serve as a pathbreaker for a child to identify and extrapolate patterns of person marking for a possessor.

Table 6.18: Daisy's NEC alienable noun types w/ and w/o a person prefix

Type	Gloss	Tokens w/ person prefix	Tokens w/o person prefix	Total
pîpî *	baby	22	20	42
awâshish	child	3	21	24
mâtiwâkin	toy, game	2	7	9
nipâwin	bed	5	4	9
atim *	dog	1	5	6
mischisin	shoe	3	3	6
utâpânâskw *	car, vehicle	2	4	6
chîshtihîkin	fork, needle	1	4	5
ishkwâshish	girl	2	3	5
minihkwâkin	cup	1	3	4
nituhkuyin	medicine	2	2	4
âmihkwân	spoon	1	2	3
mîchim *	food	1	2	3
ashtutin *	hat	1	1	2
Total		47	81	128

Notes. w/ = "with". w/o = "without". * = type also appears in Table 6.6.

6.3.4. Possesseees with no person marking

For a final look at Daisy's acquisition of the person prefix position within the noun template, this section examines her possesseees that do not use a prefix and yet do not seem to be errors. Daisy produces a total of four tokens in mixed-language possesseees where person marking is not used.

Just one of these tokens is without an English possessive pronoun, but it does have an NEC pronoun (28). The remaining three tokens all occur with an English possessive pronoun and bear no possessive inflection, as in (29).

- (28) σ-Δ">°ŕ'ḃ° σ-ḃ boots_x
 Niwîhpushchiskân nîyi boots.
 niwîhpushchiskân nîyi boot-s
 I.want.to.put.it.on 1 boot-ENG.PL
 'I want to put on my boots.' (Daisy, 4;02.06, B1.08, 22:01)

- (29) ᠰᠢᠬᠢᠠᠮᠤᠮᠤᠰᠤᠨᠢᠶᠢᠭᠤᠨᠠᠨᠢ my ᠰᠤᠯᠤᠰᠤᠨᠢᠶᠢᠭᠤᠨᠠᠨᠢ
 Chîhâpiham wâsh my presentiyiu Ani.
 chîhâpiham wâsh my present-iyiu Ani
 s/he.opened.it EMPH 1.SG.POSS present-NI.SG.OBV name
 ‘Ani opened my present.’ (Daisy, 5;07.03, B1.030, 24:13)

Although the possessee in (29) does indeed bear an inanimate singular obviative suffix, this is not marking tied to possession. Instead, the possessee takes this suffix because of the discourse context. Prior to (29) Daisy is complaining to the adult that Ani had opened one of Daisy’s Christmas presents. Ani is the proximate third-person participant, which makes *present* obviative. Daisy’s other two possesseees without possessive inflection illustrate the same pattern from (29): *your brushiyiu* and *my sweateriyiu*.

This is not much evidence, but Daisy’s three tokens like (29) may demonstrate that children can extract a principle from child-directed speech that mixed-language possesseees co-occurring with an English possessive pronoun do not take NEC possessive inflection.

6.3.5. Summary

Overall Daisy’s sample contains more than 200 obligatory contexts where a possessee noun requires a person prefix token. She produces 236 adult-like prefix tokens with errors in only seven other tokens. Her distribution of person across the prefixes differs from adult usage, but these differences are largely due to the pragmatic dynamics of adult-child interactions.

From her first recording session at age 3;08.10, Daisy evinces knowledge of the position marking person of a possessor within the affixal template for NEC nouns. She demonstrates productive usage of the first- and second-person prefixes at age 3;09.22 and of the third-person prefix at age 3;11.11. The dataset does not show definitively that Daisy acquires productive usage of the prefix marking an unspecified/indefinite possessor, which is a form relatively rare in child-directed speech.

Aspects of Daisy’s acquisition and application of the person prefix position may be connected to patterns in adult input. Her NEC noun types occurring with a prefix tend to be among the most frequent such types in child-directed speech, and like the adult, Daisy largely uses the majority of her prefix tokens on a relative handful of noun types. Frequent types in adult

input may also have helped Daisy extrapolate principles distinguishing and governing prefix application with inalienable and alienable possession. As with Ani, Daisy’s usage of English nouns in mixed-language possessives seems particularly indicative of her productive knowledge of NEC inflection.

6.4. Person marking in Billy’s speech

This section explores Billy’s production of person prefixes. His production represents a middle ground between the relative scarcity of Ani’s tokens and the preponderance of Daisy’s prefixes. This may reflect his age, typical inter-child variability, and Billy’s personality. He is often shy and reticent throughout recording sessions, especially when his attention is drawn toward the camera.

6.4.1. All person marking

Billy produces 71 NEC-only possessives (Table 6.19) and 22 mixed-language possessives (Table 6.20) in obligatory contexts requiring a person prefix. Altogether Billy employs 89 adult-like tokens of a person prefix. This constitutes many more tokens than Ani, but far fewer than Daisy or the adult.

Table 6.19: Billy’s person prefixes w/ NEC possessives, in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Prop. of errors
P1	41	1	1	43	0.02
P2	1	0	2	3	0.67
P3	24	0	0	24	0.00
PU	1	0	0	1	0.00
Total	67	1	3	71	0.06

Notes. w/ = with. P = possessor. 1 = first person. 2 = second person. 3 = third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Like Daisy, Billy primarily employs first- and third-person prefixes. He uses only one token of the second-person prefix in the entire dataset. These imbalances in distribution directly reflect the characteristics of his particular interactions with the adult. Billy talks mostly about his interests and things that have happened to himself, his friends, and family members. He generally does not refer to or ask the adult about herself and aspects of her life. Billy uses only one unspecified/indefinite possessor prefix, a form that is also rare in child-directed speech.

Table 6.20: Billy's person prefixes w/ mixed-language possessives, in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Prop. of errors
P1	5	0	0	5	0.00
P2	0	0	0	0	0.00
P3	17	0	0	17	0.00
PU	0	0	0	0	0.00
Total	22	0	0	22	0.00

Notes. w/ = with. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

For easy reference, Table 6.21 compiles of Billy's person prefix tokens across all 93 obligatory contexts within the sample. Billy has an overall error rate of about four percent, which is a bit higher than Daisy's, but that is largely because of his performance with just a few second-person prefix tokens.

Table 6.21: Billy's person prefixes in obligatory contexts

Person prefix	Correct use of prefix	Om.	Comm.	Total	Prop. of errors
P1	46	1	1	48	0.04
P2	1	0	2	3	0.67
P3	41	0	0	41	0.00
PU	1	0	0	1	0.00
Total	89	1	3	93	0.04

Notes. P = possessor. 1 = first person. 2 = second person. 3= third person. U = unspecified/indefinite. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

6.4.2. Productivity of person marking

This section explores Billy's productive usage of each prefix marking of a possessor. For a brief overview of his production over time, Table 6.22 tabulates his prefix tokens per each of his 11 sampled session, and the ensuing sections provide a quantitative and qualitative assessment of his performance with each prefix in obligatory contexts.

Table 6.22: Billy's person prefixes in obligatory contexts, per recording session

Session	Child age	P1 tokens		P2 tokens		P3 tokens		PU tokens	
		A-L	Err.	A-L	Err.	A-L	Err.	A-L	Err.
B3.02	4;05.04	2	0	0	0	1	0	0	0
B3.04	4;06.08	8	0	0	1	3	0	1	0
B3.06	4;07.27	1	1	0	0	2	0	0	0
B3.07	4;08.21	1	0	0	1	7	0	0	0
B3.09	4;10.08	3	0	0	0	3	0	0	0
B3.11	5;00.13	13	0	0	0	4	0	0	0
B3.13	5;02.12	2	0	1	0	1	0	0	0
B3.14	5;03.22	5	0	0	0	8	0	0	0
B3.15	5;05.00	5	1	0	0	2	0	0	0
B3.17	5;06.27	4	0	0	0	1	0	0	0
B3.18	5;10.06	2	0	0	0	9	0	0	0
Total		46	2	1	2	41	0	1	0

Notes. P = possessor. 1 = first person. 2 = second person. 3 = third person. U = unspecified/indefinite. Ad. = adult-like production of a token. Err. = errors.

6.4.2.1. First-person possessor marking

Billy's sample begins at age 4;05.04, which is much later than the samples for Ani or Daisy. In this session, Billy produces two tokens of the first-person prefix (30–31). This application, particularly on the English stem *dad*, demonstrates his awareness of the prefix position.

(30) $\sigma C \acute{h}^t$
 nidadîm
 ni-dad-îm
 1-father-POSS
 'my dad' (Billy, 4;05.04, B3.02, 08:34)

(31) $\triangleleft \Delta \acute{L}^b \sigma \acute{J} \Gamma^{\sigma} x$
 âi mâk nishîmish.
 âi mâk ni-shîm-ish.
 HES and 1-younger.sibling-DIM
 '... and my little sibling.' (Billy, 4;05.04, B3.02, 08:35)

In the very next session at age 4;06.08, Billy applies a first-person prefix to another seven noun types (eight total tokens): *nihtiwikîh* ‘my ears’, *nishtikwânipîwîh* ‘my hair’, *niskut* ‘my nose’, *nitihchîh* ‘my hands’, *nitun* ‘my mouth’, *nûhkum* ‘my grandmother’, and *nûhtâwî* ‘my father’. However, by this age point he uses only one type (*shtikwânipîwî* ‘hair’) in a contrasting word form without the first-person prefix: One token of *mishtikwânipîwîh* ‘someone’s hair, some hair’. At age 4;08.21, Billy provides word forms to contrast with more noun types: *uhtiwikîh* ‘her/his ears’, *uskut* ‘her/his nose’, and *utun* ‘her/his mouth’. Here he is also past the 80-percent threshold of accuracy for using the prefix.

Therefore, in the sample for the present study, Billy demonstrates at age 4;08.21 that he has acquired productive usage of the prefix marking a first-person possessor.

6.4.2.2. *Second-person possessor marking*

Billy’s usage of the second-person prefix is quite different from child-directed speech and Daisy’s speech: Throughout his dataset, Billy has only three obligatory contexts requiring the morpheme. His first context occurs at 4;06.08, where he produces (32) when he means to say *nîpith* ‘my teeth’. This example illustrates that Billy has likely acquired the unanalyzed word form *chîpit*, which is literally ‘your tooth’, as the stem of ‘tooth’. Daisy commits the same error (see §6.3.2.2).

- (32) $\sigma \wedge^e$
 nîpith
 Target: n-îpit-h
 Actual: ni-ch-îpit-h
 1-*2-tooth-NI.PL
 ‘my teeth’ (Billy, 4;06.08, B3.04, 28:32)

Billy’s next production of the second-person prefix comes as an error of commission in (33). Given the context in the video, Billy is attempting to say *nisis* ‘my uncle’. This is likely another example of Billy using an unanalyzed word form with the second-person prefix as the stem for a noun: The stem *sis* ‘uncle’ occurs in only four tokens in child-directed speech within the sample, but each token is the same word form bearing the prefix *chi*:-: *chisis* ‘your uncle’. The other two

children have no tokens using *sis*, and so there is no evidence in the dataset to show whether this analysis is specific to Billy alone.

- (33) σɾʰ
 nisis
 Target: ni-sis
 Actual: *chi-sis
 *2-uncle
 ‘my uncle’ (Billy, 4;08.21, B3.07, 12:19)

Billy’s third and final context requiring the prefix *chi-* comes at age 5;02.12, in (34). Here he produces the adult-like inflectional form of stem *îch* ‘home’ in *chîchîwâhch* ‘at your (PL) house’. In this context, he is asking the adult if she only films sessions with him when the weather is hot.

- (34) ᑖᑕᑦᑖᑦ ᑖᑕᑦᑖᑦ ᑕᑕᑦᑕᑦ ᑕᑕᑦᑕᑦ ᑕᑕᑦᑕᑦ ᑕᑕᑦᑕᑦ ᑕᑕᑦᑕᑦ ᑕᑕᑦᑕᑦ ᑕᑕᑦᑕᑦ
 Âhchishitâchâ wâsh mikw chimisinâpiskhwin chîchîwâhch nimâ
 âhchishitâchâ wâsh mikw chimisinâpiskhwin
 when.it.is.hot EMPH only you.take.a.picture.of.me

 ch-îch-îwâ-hch nimâ.
 2-home-2/3PL.PSR-LOC NEG
 ‘When it’s hot, that’s the only time you take pictures of me at your house, right?’
 (Billy, 5;02.12, B3.13, 19:00)

Billy’s adult-like production of the possessee token in (34) may have a particular connection to frequency in child-directed speech: The stem *îch* ‘home’ is the second-most frequent NEC type in adult input occurring with a person prefix (Table 6.3), and 22 of these 50 tokens consist of *chîchîwâhch* ‘at your (PL) house’.

Because Billy uses only one adult-like token of the second-person prefix within the sample, the present study cannot conclude that he has acquired productive usage of the prefix by age

5;10.06. Given cross-linguistic evidence that children generally acquire inflection by age 5;0 (e.g., Deen, 2012) as well as Daisy’s performance with second-person prefixes, it is highly unlikely that Billy has truly not acquired productive usage of second-person possessor marking by 5;10.06. Instead, the lack of evidence for his productivity is most likely attributable to the limitations of the sample for the present study. Naturalistic data can provide an unreliable foundation for estimating productivity (e.g., Ambridge & Lieven, 2011, p. 7), although this disadvantage is probably magnified by the small sample size in the present study.

6.4.2.3. Third-person possessor marking

Billy’s employs much more robust usage of third-person prefixes. At 3;08.10, he has one token of *îch* ‘home’ in *wîchîwâhch* ‘at their house’. In the next recording session at 4;06.08, Billy has another token of *îch* ‘home’ in *wîchîwâu* ‘their house’, and he also applies the third-person prefix to two other noun types, in (35–36). Both examples have especially interesting aspects.

In (35), Billy’s use of an inanimate intransitive verb as well as his lack of animate obviative suffix *-h* on the possessee indicate that he classifies English *chimney* as inanimate. The NEC word *akuhtishkwâyâpî* ‘chimney’ is animate, and so English *chimney* should also be animate (Margaret, REH1-032, 04:17). Perhaps Billy makes a non-adult-like animacy classification because both *chimney* and *akuhtishkwâyâpî* are uncommon words in day-to-day NEC. Neither type, for example, occurs in utterances from the adult, Ani, or Daisy.

- (35) <Λ<∫∫° Δ∫ >∫^L-∫∫^Lx
 Apishâshiyiu wîyi uchimneyim.
 apishâshiyiu wîyi u-chimney-im
 it.is.little 3 3-chimney-POSS
 ‘His chimney is small.’ (Billy, 4;06.08, B3.04, 37:43)

In (36), Billy asks the adult if the Berenstain Bears live in a treehouse. He productively creates a compound NEC word and inflects each component of the compound with possessive inflection. Billy may have a mismatch in animacy between NEC and English: *mishtikw* ‘tree’ is animate in NEC, and yet Billy omits the animate obviative suffix *-h* from *utreeimiwâuh*. However, this may reflect the possibility that he is classifying ‘treehouse’ with the animacy of

the head of the compound: *îch* ‘home’ is inanimate. This may also explain why Billy uses an inanimate demonstrative *uyâ* ‘this (NI.OBV.SG)’ to refer to the treehouse as well.

- (36) $\triangleright\dot{\imath}\triangleleft\triangleright^c\cup\nabla\Delta\Gamma\triangleleft^{\circ}\dot{\Delta}\Gamma\triangleleft^{\circ}_x$
 Uyâ â utreeimiwâu wîchiwâu.
 u-yâ â u-tree-im-iwâu w-îch-iwâu
 DEM.PXL-NI.OBV.SG Q 3-tree-POSS-2/3PL.PSR 3-home-2/3PL.PSR
 ‘Is this their treehouse?’ (Billy, 4;06.08, B3.04, 25:51)

In his next session at age 4;07.27, Billy inflects two more types with one token each: *kâwî* ‘mother’ in *ukâwîh* ‘her/his mother’ and *astis* ‘sinew’ in *ustisich-h* ‘her/his mittens’. At 4;08.21 he produces yet another eight types with one token each: *uchûchûyiu* ‘her/his (OBV) bottle’, *uhtiwikîh* ‘her/his ears’, *umommymh* ‘her/his mommy’, *upîpîmish-h* ‘her/his little baby’, *ushchîshikwh* ‘her/his eyes’, *uskut* ‘her/his nose’, and *utun* ‘her/his mouth’. At this point, Billy has inflected 11 different noun types with an allomorph of the third-person prefix.

Here Billy also satisfies the other criteria for productivity in using the third-person prefix. He has produced no errors in obligatory contexts for the prefix, and he has used five of these 11 types in contrasting forms without the prefix:

- bare stem *chimney* (two tokens) as well as *chimney* with the locative suffix *chimneyhch* (when he describes Santa coming ‘down the chimney’) (one token)
- stem *pîpî* inflected as *pîpîshich* ‘little babies’ (two tokens)
- stem *htiwikî* in *nihtiwikîh* ‘my ears’ (one token)
- stem *skut* in *niskut* ‘my nose’ (one token)
- stem *tun* in *nitun* ‘my mouth’ (one token)

According to the criteria for productivity in the present study, Billy demonstrates productive usage of the third-person prefix at age 4;08.21. Given his robust application of the prefix across many noun types, it is likely that Billy has mastered the prefix before this age point, but the sample may not capture enough of his usage.

6.4.2.4. *Unspecified/indefinite possessor marking*

Billy has only one token of the unspecified/indefinite possessor prefix *mi-* in the sample, and so no conclusions can be drawn about his acquisition of the morpheme. However, this single token comes at age 4;06.08 and is adult-like (37).

- (37) Γ[◌]ŋbσΛΔ[◌]"
 mishtikwânipîwîh
 mi-shtikwânipîwî-h
 INDF-hair-NI.PL
 ‘someone’s hair / some hair’ (Billy, 4;06.08, B3.04, 27:57)

6.4.3. *Possible connections to adult input*

This section examines Billy’s production in light of major patterns in adult speech within the CCLAS corpus: the frequency of noun types with person marking (§6.1.2) and the contrast between inalienable and alienable nouns (§6.1.3).

6.4.3.1. *Person marking per noun type*

Billy’s sample contains 44 noun types in obligatory contexts for a person prefix: 28 NEC types and 16 English types requiring NEC possessive inflection. Table 6.23 lays out Billy’s 20 most common noun types in such contexts, by total number of prefix tokens. Types that appear among the adult’s most frequent noun types with a person prefix (Tables 6.3–6.4) are indicated with an asterisk. Billy has 24 types (14 NEC, 10 English) that appear with only one prefix token, and so those are not included. Billy’s production shares some important similarities with patterns in the speech of the adult and Daisy.

Like Daisy, Billy applies most of his person prefixes to noun types that most frequently occur with prefixes in child-directed speech: 11/20 types (55.00 percent) in Table 6.23 also appear in Tables 6.3–6.4. Billy has only five noun types that occur with more than two prefix tokens, and all of these are among the adult’s most frequent types with a prefix.

Table 6.23: Billy's most common noun types with a person prefix

Type	Gloss	Cat.	Tokens with person prefix								Total
			P1		P2		P3		PU		
			Ad.	Err.	Ad.	Err.	Ad.	Err.	Ad.	Err.	
<i>îch</i> *	home	nid	6	1	1	0	5	0	0	0	13
<i>kâwî</i> *	mother	nad	7	0	0	0	1	0	0	0	8
<i>shîm</i> *	younger sibling	nad	6	0	0	0	2	0	0	0	8
<i>uhtâwî</i> *	father	nad	7	0	0	0	0	0	0	0	7
<i>uhkum</i> *	grandmother	nad	3	0	0	0	0	0	0	0	3
brother	brother	eng	0	0	0	0	2	0	0	0	2
friend *	friend	eng	0	0	0	0	2	0	0	0	2
mom(my)	mother	eng	0	0	0	0	2	0	0	0	2
<i>skidoo</i> *	snowmobile	eng	0	0	0	0	2	0	0	0	2
sock	sock	eng	0	0	0	0	2	0	0	0	2
window	window	eng	2	0	0	0	0	0	0	0	2
<i>pîpî</i> *	baby	na	0	0	0	0	2	0	0	0	2
<i>utâpânâskw</i>	car, vehicle	na	1	1	0	0	0	0	0	0	2
<i>stâs</i>	older brother	nad	1	0	0	0	1	0	0	0	2
<i>ashtutin</i>	hat	ni	0	0	0	0	2	0	0	0	2
<i>htiwikî</i> *	ear	nid	1	0	0	0	1	0	0	0	2
<i>shtikwânipîwî</i> *	hair	nid	1	0	0	0	0	0	1	0	2
<i>skut</i>	nose	nid	1	0	0	0	1	0	0	0	2
<i>tihchî</i> *	hand	nid	2	0	0	0	0	0	0	0	2
<i>tun</i>	mouth	nid	1	0	0	0	1	0	0	0	2
Total			39	2	1	0	26	0	1	0	69

Notes. NEC = Northern East Cree. Cat. = category. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. P = possessor. 1 = first person. 2 = second person. 3 = third person. U = unspecified/indefinite. Ad. = adult-like. Err. = errors. * = type also appears in Tables 6.3–6.4.

In another similarity to the adult and Daisy, the bulk of Billy's prefix tokens appear on a minority of noun types. Billy produces 93 obligatory contexts for a person prefix, and the 20 noun types in Table 6.23 account for 69/93 (74.19 percent) of those contexts. Billy's top three noun types that occur with the most prefix tokens include *kâwî* ‘mother’ and *îch* ‘home’, which are the top two for the adult and Daisy. However, these two types do not carry an outsized load of prefix tokens for Billy in the same way they do for the adult and Daisy.

Billy has only one noun type that appears with at least one token each of the first-, second-, and third-person prefix: *îch* ‘home’. This is also one of the few types to appear with all three prefixes for the adult and Daisy.

Finally, as with the other two children, Billy’s application of person prefixes to English types seems to be a more direct reflection of his productivity independent from adult input. Just two of Billy’s six English stems in Table 6.23 (*friend* and *skidoo*) also appear as mixed-inflection possessives in child-directed speech. Furthermore, of Billy’s 16 total English types in mixed-language possessives, just four also occur in adult speech: *bicycle*, *car*, *friend*, and *skidoo*.

6.4.3.2. Person marking with inalienable and alienable possession

Billy uses 28 total NEC noun types as possessives requiring a person prefix. 16 of these types are inalienably possessed and always require a prefix. All but one of these 16 types signifies a kinship relation or a body part. The sole exception is *îch* ‘home’, which occurs with such a high frequency in adult speech that children might easily learn *îch* as an exception that belongs with words for kinship relations and body parts.

Turning now to alienable noun types, which require a prefix only in contexts of possession, Billy produces 12 alienable types in such contexts. Of these 12 types, Billy produces just three types in tokens with and without person prefixes (Table 6.24). One of these types (*pîpî* ‘baby’) is one of the pathbreakers I postulated in §6.1.3, which may play a special role in demonstrating to children through contrasting forms the presence, position, and function of the person prefix slot in the inflectional template for nouns.

Table 6.24: Billy’s NEC alienable noun types w/ and w/o a person prefix

Type	Gloss	Tokens w/ person prefix	Tokens w/o person prefix	Total
pîpî *	baby	2	2	4
pâshchishikin	small/toy gun	1	3	4
ânishkiwishiu	great-grandparent	1	2	3
Total		4	7	11

Notes. w/ = “with”. w/o = “without”. * = type also appears in Table 6.6.

6.4.4. Possesseees with no person marking

Finally, Billy produces three tokens of nouns as mixed-language possesseees that do not use a prefix and yet do not seem to be errors. As in Daisy’s speech, one such possessee occurs with an NEC pronoun as possessor and not an English possessive pronoun (38), while the remaining two tokens occur with an English possessive pronoun and bear no possessive inflection (39–40). As with Daisy’s utterance (29), the possessee in (40) takes an inanimate singular obviative suffix that does not indicate possession and instead marks discourse-conditioned obviation.

- (38) <σC" σD" >ã.d'° ·<ñ σ> skidoo pants_x
 Anitâh nitûhunâkusiu wâsh nîyi skidoo pants.
 ani-tâh nitûhu-nâkusi-u wâsh nîyi skidoo.pant-s
 DEM-LOC hunt-appear-3SG EMPH 1 skidoo.pants-ENG.PL
 ‘My skidoo pants are camouflage.’ (Billy, 4;06.08, B3.04, 16:02)
 (Lit. ‘My skidoo pants look like something you would wear when you go hunting.’)

- (39) σJΔ Δ my ðΓ"°_x
 nimui wî my roomihch.
 nimui wî my room-ihch
 NEG EMPH 1SG.POSS room-LOC
 ‘... not in my room.’ (Billy, 5;00.13, B3.11, 19:12)

- (40) C° my 9'ʔʔ°_x
 Tân my keysiyiu.
 tân my key-s-iyiu
 where 1SG.POSS key-ENG.PL-NI.SG.OBV
 ‘Where are my keys?’ (Billy, 5;03.22, B3.14, 11:22)

Again, although the evidence is scant, utterances with as (39–40) may testify to a principle children could extrapolate from child-directed speech: If a mixed-language noun occurs with an English possessive pronoun, then the noun takes no NEC possessive inflection.

6.4.5. Summary

Throughout his sampled data, Billy produces 93 obligatory contexts requiring an NEC person prefix for a possessee. He has 89 adult-like applications of a prefix, with just four errors. Like Daisy, Billy uses primarily first- and third-person prefixes because of the dynamics of adult-child interactions. His lack of second-person marking may be specific to his communication style.

Billy's sample is smaller than the other two children's datasets and starts at a later age. He exhibits productive usage of both the first- and third-person prefixes at 4;08.21. His robust application of such prefixes with a variety of noun types at this age indicates that his productivity with each morpheme likely started before the sampled data begins. Billy provides no evidence that he has productively acquired marking for a second-person possessor. He produces only one unspecified/indefinite possessor prefix, which is also rare in child-directed speech.

As with Daisy, aspects of Billy's acquisition of person marking for a possessor may be tied to patterns in adult input. He tends to apply prefixes to NEC nouns that occur most frequently with prefixes in child-directed speech. Frequency of noun types in adult input may have helped Billy identify and construct the category of inalienable possession. He only produces a few alienable noun types inside and outside of possessive contexts, but one of these types may be a particular pathbreaker extrapolated from input. Lastly, Billy's English stems in mixed-language possessee testify more directly to his productive knowledge of person marking for possessors

6.5. Conclusions

This chapter has examined the acquisition of person marking for a possessor within the NEC affixal template for nouns. It has outlined the distribution of person prefixes in child-directed speech and explored patterns in adult input that may help children discover the position, function, and morphological members of the prefix position. Child-directed speech contains nearly 700 person prefix tokens, and the vast majority of tokens occur with a relatively small number of noun types. The frequency of these types with person prefixes may help children identify individual prefix morphemes and abstract categories of (in)alienable possession.

Each of the children demonstrate different levels of productivity with each person prefix, but at least some of this difference must be attributed to two unavoidable factors in the naturalistic data for this dissertation: The three samples each vary in their overall length (in terms of recording time), and each sample covers a different age range. Furthermore, inter-child

variability is a well-established facet of L1 acquisition research. In studies of Indigenous languages, where samples tend to be small, inter-child variability in acquisition may seem particularly salient. For example, in her study of two children acquiring Tzeltal, Brown (1998, p. 719) shows that one child uses “multi-morpheme combinations” by age 2;0, while the other stays at the one-word stage past that age. In his study of five children acquiring Murrinhpatha, Forshaw (2016, p. 481) notes that the children’s productivity “varied greatly”.

Nonetheless, even in the face of such variation, each of the three children share some patterns in their production. In particular, the frequency of person prefixes within a subset of nouns types in child-directed speech may be connected to child speech: Daisy and Billy tend to apply prefixes to NEC noun types that most frequently occur with a prefix in input, and Ani’s only adult-like applications of prefixes to NEC nouns occurs with nouns from this highly frequent subset of types in input. However, all three children use higher proportions of mixed-language possessives than they encounter in child-directed speech, where they each demonstrate their productive knowledge of NEC inflection in a way that cannot be tied so directly to input.

Chapter 7: The possessive suffix *-im*

This chapter traces patterns in the acquisition of the possessive suffix *-im*, which occurs immediately after the noun stem in the affixal template for NEC nouns. As with other inflectional morphemes in the template, children must discover the position and function of the possessive suffix *-im*. However, *-im* presents particular challenges to children: A given noun type either requires or disallows *-im*. Only some NEC noun types require *-im* while all others disallow it, and so children must decipher where to apply *-im* in the obligatory context of possession.

As the grammatical description in Chapter 2 illustrates, determining the distribution of *-im* in the adult-level grammar of NEC is no straightforward affair. Collette (2014) provides the most in-depth treatment of this distribution, which occupies about 40 pages in his dissertation. As a brief review, existing literature offers an array of principles accounting for *-im*, but this chapter will consider only the following:

- Grammatically inanimate nouns generally do not require *-im*, but animate nouns may require the suffix (Junker et al., 2012, pp. 25–26).
- Inalienably possessed noun types, in general, disallow the suffix (Collette, 2014, pp. 282, 284–288).
- Alienable possessed noun stems ending in /n, m, kw/ usually disallow *-im*, but there are exceptions. (Collette, 2014, p. 291).
- **Borrowing:** All English loanwords generally take *-im*, regardless of the phonological form of the noun (Collette, 2014, p. 302).

This chapter shifts the lens and examines not the distribution of *-im* in a full adult grammar but instead analyzes the distribution of *-im* in child-directed speech. It considers where children see the suffix applied, where it is not applied, and what patterns may help guide children in their acquisition of the suffix (§7.1). The chapter then describes the distribution of *-im* and its productive usage in the speech of Ani (§7.2), Daisy (§7.3), and Billy (§7.4), which includes considering the extent to which each child seems to adhere to distributional principles that may be extrapolated from child-directed speech.

7.1. The possessive suffix *-im* in adult input

This section provides an overview of the occurrence of *-im* within child-directed speech and identifies some potential patterns that children could extrapolate to account for the distribution of the suffix. §7.1.1 describes the basic distribution of the suffix in the input. §7.1.2 considers whether speakers likely memorize which forms take *-im* or if they instead generalize and apply grammatical patterns productively. The remaining sections examine such potential patterns related to three factors: grammatical animacy (§7.1.3), (in)alienable possession (§7.1.4), and morphophonology (§7.1.5). §7.1.6 considers whether some features unite the class of noun types that do not permit *-im*. §7.1.7 lays out three straightforward patterns that explain more than 90 percent of the suffix's distribution, and §7.1.8 briefly addresses how children may learn the exceptions to these principles. §7.1.9 summarizes the findings.

7.1.1. The overall distribution of *-im*

This section lays out the landscape of *-im* in child-directed speech. §7.1.1.1 describes the distribution of the suffix across noun tokens, while §7.1.1.2 discusses the distribution of the suffix across noun types.

7.1.1.1. Distribution across noun tokens

This section describes the overall distribution of the possessive suffix *-im* in child-directed speech. Across the dataset for the present study, the adult produces a total of 696 tokens of nouns as possessees taking NEC inflection: 686 NEC nouns and 10 mixed-language nouns. The adult applies *-im* to all 10 mixed-language nouns in this context, and so these are set aside until §7.1.1.2.

The remainder of this section concerns how *-im* is applied to the 686 NEC possessee nouns in adult speech. Table 7.1 tabulates the occurrence of *-im* throughout this production.

Most importantly, the vast majority of noun tokens (594/686, 86.59 percent) do not occur with the suffix *-im*. This means, on average, that children encounter the possessive suffix on just over 10 percent of noun tokens in input.

Table 7.1: Distribution of *-im* across all NEC noun tokens, in adult input

\pm <i>-im</i>	Noun tokens	Proportion of tokens
+ <i>-im</i>	91	0.13
- <i>-im</i>	594	0.87
Errors of omission	0	0.00
Errors of commission	1	< 0.01
Total	686	1.00

Notes.

Second, errors with *-im* in adult input are very rare. The adult has only one error throughout the entire sample, in (1). Here she applies *-im* to a token of *pîsimuhkân* ‘clock’, which should not bear the suffix (Junker et al., 2012). Her usage of animate obviative forms with *pîsimuhkân* seems to be another error, because *pîsimuhkân* is an inanimate noun.

- (1) <σ^oρΔJ^o <σ^hρ^o >Δ^hJ^hb^ox
 Ânishkiwishiu aniyâyiu upîsimuhkân.
 Target: ânishkiwishiu ani-yâyiu upîsimuhkân
 great.grandparent DEM.DIST-0’ 3-clock
 Actual: ânishkiwishiu ani-*yâyiu u-pîsimuhkân-*im-*h
 great.grandparent DEM.DIST-*3’ 3-clock-*POSS-*3’
 ‘That’s your great-grandmother’s clock.’ (Adult, 3;09.22, B1.03, 24:21)

To give a more detailed picture of each child’s experience with *-im* in child-directed speech, Table 7.2 summarizes the distribution of the suffix with adult NEC noun tokens per each subcorpus. The single error is removed here, bringing the total to 685 tokens.

The adult’s usage is quite consistent with Ani and Daisy, and each child encounters *-im* on NEC nouns just under 40 times within their corpora. The adult uses an even smaller proportion of such tokens when talking to Billy, who hears the suffix just 18 times. Altogether, each child encounters *-im* relatively infrequently within the CCLAS corpus.

The discussion so far has addressed only tokens, which provides a picture of the frequency with which children encounter *-im* in child-directed speech. However, noun **types** represent the crux of *-im*: Children must figure out which types require the suffix when they occur as possessors and which types do not.

Table 7.2: Distribution of *-im* across all NEC noun tokens in adult input, per subcorpus

Subcorpus	Ani		Daisy		Billy	
\pm <i>-im</i>	Noun tokens	Prop.	Noun tokens	Prop.	Noun tokens	Prop.
+ <i>-im</i>	39	0.16	34	0.17	18	0.07
- <i>-im</i>	203	0.84	166	0.83	225	0.93
Total	242	1.00	200	1.00	243	1.00

Notes. Prop. = proportion of noun tokens

7.1.1.2. Distribution across noun types

Overall the adult produces 83 different NEC noun types as on-target possessives in their obligatory occurrence with or without *-im* (the single error with *pîsimuhkân* ‘clock’ is still excluded here). Table 7.3 breaks down these types and whether they require *-im*. As with noun tokens, the vast majority of noun types disallow *-im* when they occur as possessives: Less than one-fourth of the noun types in adult input require *-im* in expressing possession.

Table 7.3: Distribution of *-im* across all NEC noun tokens in adult input, per subcorpus

\pm <i>-im</i>	Noun types	Proportion of types
+ <i>-im</i>	18	0.22
- <i>-im</i>	65	0.78
Total	83	1.00

Notes. NEC = Northern East Cree

Table 7.4 presents the adult’s most frequent NEC noun types as possessives, in terms of tokens, and whether they require *-im*. Again, a given noun type either requires or disallows the suffix. Table 7.44 in Appendix A completes the picture by providing token numbers for the remaining 58 noun types.

Of course, types that require *-im* also constitute a small minority among the most frequent types: Only three of the adult’s most frequent noun types require *-im*: *pîpî* ‘baby’, *piyichîs* ‘pants’, and *chiskutimâchâsiu* ‘teacher’. Children do not encounter *-im* on most of the NEC possessives that they encounter most of the time.

Table 7.4: Distribution of *-im* w/ the most frequent NEC noun types, in adult production

Type	Gloss	Category	Total tokens per type	
			+ <i>-im</i>	- <i>-im</i>
kâwî	mother	nad	0	67
îch	home	nid	0	50
wîchâwâkin	friend	na	0	37
shîm	younger sibling	nad	0	36
akuhp	coat	ni	0	31
pîpî	baby	na	24	0
piyichîs	pants	na	22	0
tâhtipiwin	chair	ni	0	22
shchîshikw	eye	nid	0	21
mischisin	shoe	ni	0	20
pichiwiwân	shirt	ni	0	19
tihchî	hand	nid	0	18
îpit	tooth	nid	0	17
shtikwân	head	nid	0	16
chiskutimâchâsiu	teacher	na	15	0
mushum	grandfather	nad	0	15
uhkum	grandmother	nad	0	15
shtikwânipîwî	hair	nid	0	14
mâtiwâkin	toy, game	ni	0	13
htiwikî	ear	nid	0	11
misinihîkin	book	ni	0	11
uhtâwî	father	nad	0	11
mis	older sister	nad	0	10
Var. (3)	n/a	n/a	0	9

Notes. w/ = with. NEC = Northern East Cree. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. Var. = Multiple noun types occur with the same number of tokens, with the number of types is indicated in parentheses. n/a = not applicable.

Table 7.5 lists all seven of the adult’s mixed-language noun types that occur as possessives. The adult inflects all tokens with *-im*, regardless of whether the NEC analog takes *-im*. For example, she applies *-im* to *friend* but not to *wîchâwâkin* ‘friend’. The pattern here is very clear: When the adult uses an English stem with NEC inflection, she applies *-im* in a blanket fashion.

Table 7.5: All mixed-language nouns as possessives w/ NEC inflection, in adult production

Type	Total tokens per type	
	+ <i>-im</i>	– <i>-im</i>
car	2	0
friend	2	0
skidoo	2	0
aunt	1	0
bicycle	1	0
mommy	1	0
sister	1	0

Notes. NEC = Northern East Cree. w/ = “with”. w/o = “without”.

Aside from their frequency in the input, the occurrence of noun types in contrasting forms may also give clues to children about which types occur with *-im*. Noun types that children encounter both inside and outside of possessive constructions provide important evidence about where and when to use *-im*. By definition, inalienably possessed nouns cannot meet these criteria, because they only occur in possessive contexts. Therefore, Table 7.6 lists 37 alienably possessed noun types that occur within the dataset. There are two additional types that each have one possessed and one non-possessed token, which did not fit into the table: *âpihîkin* ‘key’ and *nituhkuyin* ‘medicine’. The noun *âpihîkin* takes *-im* and *nituhkuyin* does not.

In Table 7.6, there is a closer split than expected in the distribution of *-im*: 14 types require the suffix while 23 do not. 18/37 (48.65 percent) of the types in the table provide just one token in either a possessive or non-possessive. That means just over half of the types that occur in both contexts give children more than one chance to contrast possessive and non-possessive forms of a noun type in input.

Table 7.6: NEC noun types occurring inside and outside of possessive constructions

Type	Gloss	Category	± <i>-im</i>	POSS	Non- POSS	Total
pîpî	baby	na	yes	24	42	66
misinihîkin	book	ni	no	11	38	49
tâhtipiwin	chair	ni	no	22	25	47
mâtiwâkin	toy, game	ni	no	13	29	42
utâpânâskw	car, vehicle	na	no	8	25	33
akuhp	coat	ni	no	31	1	32
piyichîs	pants	na	yes	22	2	24
achimushish	puppy	na	no	1	21	22
nimâs	fish	na	yes	1	21	22
mischisin	shoe	ni	no	20	1	21
minihkwâkin	cup	ni	no	5	16	21
pichiwiyan	shirt	ni	no	19	1	20
chiskutimâchâsiu	teacher	na	yes	15	3	18
awâshishihkânish	doll	na	yes	5	13	18
wâskâhîkin	house	ni	yes	1	16	17
tûhwân	ball	na	no	1	14	15
mîchim	food	ni	no	9	4	13
ishkwâshish	girl	na	yes	1	12	13
ashtutin	hat	ni	no	8	4	12
mâmâpisun	swing	ni	no	4	8	12
îyiyihkânish	figurine	na	yes	1	10	11
pîywâshikin	sock	ni	no	5	5	10
âmihkwân	spoon	na	no	1	9	10
chîmân	boat	ni	no	4	5	9
atim	dog	na	no	3	6	9
âihkunâu	cake	na	yes	2	7	9
pîsimuhkân	clock	ni	no	1	8	9
wîhkwâyâ	sock	ni	yes	3	5	8
nipâwin	bed	ni	no	5	1	6
tî	tea	ni	yes	1	5	6
wâshâtanimâkin	light, candle	ni	no	1	5	6
misinâpiskihîkin	camera	ni	no	1	4	5
sisis	scissors	ni	yes	1	4	5
chûchû	bottle	ni	yes	2	2	4
ût	canoe	ni	no	2	2	4
kwâhpî	coffee	ni	yes	1	3	4
wâpinichâwin	garbage	ni	no	1	3	4

Notes. NEC = Northern East Cree. na = animate noun. ni = inanimate noun. POSS = tokens inside a possessive construction. Non-POSS = tokens outside possessive contexts. ± *-im* = whether a noun type should take the suffix *-im*.

7.1.2. Accounting for *-im*: Memorizing forms or applying principles?

At this point, the question is clear: Given the relatively infrequent occurrence of NEC noun types and tokens with *-im*, how might children decode the distribution of the possessive suffix?

There are two general possibilities to account for how children may acquire *-im*. The first possibility is memorization. Children may analyze the application of *-im* as an irregular inflectional pattern and simply memorize the noun types that require *-im*. The second possibility is that children extrapolate principles accounting for the distribution of *-im* in input, and then they apply those principles productively.

One way to test these two possibilities is to see if the children in the corpus produce novel inflected NEC possessives correctly carrying the possessive suffix, which are not found in input. However, because this is a naturalistic dataset, two problems mean I can never completely discount memorization of irregular inflectional forms: 1) A form with *-im* that seems to be novel in child production may actually be a form that the child has encountered in linguistic experience not represented in the corpus, and 2) A child might not produce such a novel form during a recording session, but may produce it elsewhere. Errors of overgeneralization (i.e., commission) also would provide another piece of evidence that children are abstracting *-im* rather than memorizing irregular forms. However, a naturalistic sample may not reveal many (or any) such errors. Experimental methods would provide more direct insight here, but that lies beyond the scope of the present study. However, some evidence from existing descriptions indicates that speakers of NEC do not simply memorize which noun types take *-im*.

First, Junker cites personal communication with a language consultant and reports that “there is a tendency amongst young speakers to add the morpheme *-(i)m* to all possessed independent nouns” (2003a, p. 11). Writing a decade later, Collette (2014, p. 291) claims that “young people tend to use the possessive everywhere, as a grammatical and formally stable mark of possession” (translated from the source French). He contrasts this usage with that of speakers who “are often old and more scrupulously respect certain rules for the distribution of the possessive (phonological, morphophonological, morphological and semantic)” (translated from the source French). These descriptions indicate that speakers identify the presence and function of *-im* and abstract patterns for its application—they do not just memorize the types that require *-im*. However, an important confound clouds the situation. At a minimum, Junker and Collette’s observations of new patterns in applying *-im* reflect language change, and they most likely

indicate language shift and loss. As we will see, the children represented in the CCLAS corpus do not apply *-im* on NEC nouns with a blanket rule.

As second type of evidence against memorization is that speakers of NEC tend to apply *-im* to all English loanwords. Collette (2014) has observed this phenomenon, and as Table 7.5 demonstrates, the adult within the dataset here does the same thing. If the children represented within the CCLAS corpus use *-im* with their English nouns as mixed-language possessee, then this would indicate that they are analyzing, abstracting, and applying *-im* as a morpheme marking possession in accordance with some set of grammatical principles.

The remaining sections will examine patterns in adult input that may provide children clues to the suffix’s distribution. It first considers the grammatical animacy of nouns types (§7.2.), and then two of the factors Collette (2014) proposes for the distribution of *-im* in the adult-level grammar of NEC: (in)alienability and morphophonology.

7.1.3. Grammatical animacy and *-im*

As discussed in the grammatical description in Chapter 2, some conventional wisdom holds that grammatical animacy is a key to the distribution of *-im*. As Junker et al. (2012, pp. 25–26) briefly explain for potential learners of NEC: For animate nouns the possessive suffix “may be required”, while in contrast, “in general the possessive *-im* suffix does not attach to possessed inanimate nouns.”

To test the hypothesis that animacy helps determine the distribution of *-im*, Table 7.7 takes the 83 NEC noun types that occur in on-target adult possesseees and categorizes them by animacy and whether they require *-im*.

Table 7.7: Distribution of -im w/ NEC noun types in adult input, by animacy

Animacy category	+ <i>-im</i>	– <i>-im</i>
Animate	8	25
Inanimate	10	40

Notes. w/ = with. + *-im* = the number of noun types that require *-im*. – *-im* = the number of noun types that disallow *-im*.

Nearly the same number of animate and inanimate noun types require *-im*. Table 7.7 constitutes a two-by-two contingency table of categorical data, where no cell contains a value

lower than five, and so I used a Pearson’s chi-square test to test the statistical association between grammatical animacy and *-im* (see Field et al., 2012, pp. 1114–1116).

This test shows that there is no significant association between grammatical animacy and whether *-im* is required ($\chi^2(1) = 0.034$, $p = 0.85$). In terms of effect size, there is a negligible association (Rea & Parker, 2014) between animacy and requiring *-im* ($\phi = 0.05$).

In other words, grammatical animacy does not serve as a good predictor of *-im* within child-directed speech. Children must look elsewhere for clues to the suffix’s distribution. The next two sections (§7.1.4 –§7.1.5) address conditions where *-im* is disallowed, and §7.1.6 asks whether some unifying conditions can instead account for where *-im* is required.

7.1.4. Inalienable possession and *-im*

Collette (2014, pp. 282, 284–288) claims that (in)alienable possession serves as very reliable predictor of *-im* in the adult-level grammar of NEC: Inalienably possessed noun types, in general, disallow the suffix.

To see how this observation may hold up in child-directed speech, Table 7.8 categorizes the adult’s 83 noun types by (in)alienable possession and whether they require *-im*. The pattern here is very clear: No inalienably possessed noun types occur with *-im* in child-directed speech.

Table 7.8: Distribution of -im w/ NEC noun types in adult input, by (in)alienability

(In)alienability category	+ <i>-im</i>	– <i>-im</i>
Alienable	18	32
Inalienable	0	33

Notes. w/ = with. + *-im* = the number of noun types that require *-im*. – *-im* = the number of noun types that disallow *-im*.

To confirm the eye test, because one of the cells in Table 7.8 contains a value lower than five, I used a Fisher’s exact test to test the statistical association between (in)alienable possession and whether *-im* must be applied (see Field et al., 2012, pp. 1116–1117). The difference between inalienable and alienable noun types in requiring *-im* is indeed statistically significant ($p < 0.01$, OR = infinity). Furthermore, there is a relatively strong association (Rea & Parker, 2014) between (in)alienability and requiring/disallowing *-im* ($\phi = 0.43$).

In other words, (in)alienable possession would be a good predictor of *-im* for children. Inalienable noun types do not require the possessive suffix, at least in child-directed speech. This one principle takes care of 33/83 total noun types (39.76 percent) in adult input.

This does, however, mean that children must still decipher the pattern behind the distribution of *-im* with alienably possessed noun types. In the adult-level lexicon, this may present quite a problem: Citing the 2004 edition of the Northern East Cree dictionary, Collette (2014, p. 289) observes that alienable nouns constitute 91 percent of the 2,472 total noun types in the dictionary. Of course, the challenge for children is analyzing the actual occurrence of alienable noun types in child-directed speech and finding patterns to crack the code of distributing *-im* there. The next section explores a second primary factor Collette proposes behind the distribution of the possessive suffix among alienable noun types: morphophonology.

7.1.5. Morphophonology and *-im*: Stem-final consonants

As the grammatical description in Chapter 2 details, Collette proposes a few morphophonological factors accounting for which alienable noun types require *-im*. This section considers just one such factor: Collette claims that *-im* is not used with most noun stems that end either in a nasal consonant /m, n/ or the labialized velar /kw/ (2014, p. 291).

Table 7.9 tallies the 11 different stem-final segments for all 50 alienable noun types in child-directed speech. A huge imbalance is evident, as more than half of the noun stems end in /n/ (28/50, 56.00 percent). Accordingly, nouns ending in /m, n, kw/ together account for 31/50 types (62.00 percent) alone.

To see if Collette's observation holds in child-directed speech, Table 7.10 takes these 50 alienable types and classifies them by stem-final segment and whether they occur with *-im*. At first glance, there does indeed seem to be a strong split between requiring *-im* and the stem-final segment: Nearly all of the types that end in /m, n, kw/ do not allow *-im*, while the vast majority of stems ending in any other segment do require the suffix.

Table 7.9: Stem-final segments for alienable NEC noun types, in adult input

Stem-final segment	Total types
/n/	28
/ʃ/	4
/ŋ/	4
/s/	4
/m/	2
/t/	2
/u/	2
/â/	1
/p/	1
/û/	1
/kw/	1
Total	50

Notes.

Table 7.10: Distribution of *-im* w/ alienable types in adult input, by stem-final segment

Stem-final segment	+ <i>-im</i>	– <i>-im</i>
/m, n, kw/	3	28
Any other segment	15	4

Notes. w/ = with. + *-im* = the number of noun types that require *-im*. – *-im* = the number of noun types that disallow *-im*.

A Fisher’s exact test reveals that the difference between the two classes of noun types and whether they require *-im* is indeed statistically significant ($p < 0.01$, OR = 0.032). Furthermore, there is a strong association (Rea & Parker, 2014) between the stem-final segment and whether a noun type requires/disallows *-im* ($\phi = -0.70$).

In other words, if children extrapolate from input that alienable stems ending in /m, n, kw/ disallow *-im* while every other stem requires the suffix, they will have accounted for 43/50 types (86 percent) in child-directed speech. None of the adult’s English stems in mixed-language possessives terminate in any of these three segments, so perhaps this morphophonological principle extends to loanwords as well. This principle does leave the following exceptions: *achimushish* ‘puppy’, *akuhp* ‘coat’, *châkwân* ‘thing’, *ischis* ‘mitten’, *nituhkuyin* ‘medicine’, *wâskâhîkin* ‘house’, and *ût* ‘canoe’. §7.1.8 addresses these exceptions.

7.1.5.1. Morphophonology before (in)alienability?

With so many noun stems ending in /n/, the question stands as to whether children could look toward the stem-final segment without first considering (in)alienability.

Table 7.11 counts all of the 83 noun types as possessives in adult input by stem-final segment, regardless of whether they are (in)alienably possessed.

Table 7.11: Distribution of -im w/ all NEC types in adult input, by stem-final segment

Stem-final segment	+ -im	- -im
/m, n, kw/	3	40
Any other segment	15	25

Notes. w/ = with. + -im = the number of noun types that require -im. - -im = the number of noun types that disallow -im.

With this data, I ran a Pearson's chi-square test, which shows that there is a statistically significant association between the stem-final segment and whether a noun type requires/disallows -im ($\chi^2(1) = 9.642$, $p < 0.01$). In terms of effect size, there is a moderate association (Rea & Parker, 2014) between the two variables ($\phi = -0.37$).

Therefore, if children adopt a principle that noun stems ending in /m, n, kw/ disallow -im, this accounts for 40 types but leaves three exceptions *châkwân* 'thing', *nituhkuyin* 'medicine', and *wâskâhîkin* 'house'. The task then becomes seeing if (in)alienability can explain the distribution of -im with the remaining 43 noun stems ending in segments other than /m, n, kw/.

Table 7.12 lays out the numbers for these 43 noun stems. A Fisher's exact test reveals that the association between the (in)alienability of these stems and whether they require -im is statistically significant ($p < 0.01$, OR = infinite). Again, there is a strong association (Rea & Parker, 2014) between the two variables ($\phi = 0.81$). If children abstract the principle that inalienable noun types disallow -im, just four exceptions remain: *achimushish* 'puppy', *akuhp* 'coat', *ischis* 'mitten', and *ût* 'canoe'

Table 7.12: Distribution of -im w/ nouns not ending in /m, n, kw/, by (in)alienability

(In)alienability category	+ -im	- -im
Alienable	15	4
Inalienable	0	21

Notes. + -im = the number of noun types that require -im. - -im = the number of noun types that disallow -im.

In other words, to successfully predict the distribution of -im, children could indeed look toward the stem-final segment of a noun type before considering (in)alienability, and they would end up explaining the same number of noun types while leaving the same seven exceptions:

achimushish ‘puppy’, *akuhp* ‘coat’, *châkwân* ‘thing’, *ischis* ‘mitten’, *nituhkuyin* ‘medicine’, *wâskâhîkin* ‘house’, and *ût* ‘canoe’.

7.1.6. Could child-directed speech really evince negative principles?

So far, the discussion has cast patterns in child-directed speech in terms of two negative principles: Do not apply *-im* to inalienable noun types, and do not apply *-im* to noun stems ending in /m, n, kw/. This section considers how to approach the distribution of the suffix from the other side: Are there patterns in child-directed speech illustrating where *-im* is required?

Only 18 noun types require *-im* (Table 7.3), which is just about 20 percent of all NEC noun types in input. If children could abstract principles that unify these 18 noun types as a class, then it could be a simple matter to reduce the distribution of *-im* to one positive principle: *Apply -im to this class of nouns and nowhere else.*

Table 7.13 lists these 18 noun types along with information pertaining to the factors discussed so far: (in)alienability and the stem-final segment. It also counts tokens inside and outside of possessive constructions, to provide a look at how children may encounter contrasting forms of each type.

Table 7.13: NEC noun types that require *-im*, in adult input

Type	Gloss	Category	Final segment	POSS	Non-POSS	Total
pîpî	baby	na	î	24	42	66
piyichîs	pants	na	s	22	2	24
nimâs	fish	na	s	1	21	22
awâshishihkânish	doll	na	ʃ	5	13	18
chiskutimâchâsiu	teacher	na	u	15	3	18
wâskâhîkin	house	ni	n	1	16	17
ishkwâshish	girl	na	ʃ	1	12	13
îyiyihkânish	figurine	na	ʃ	1	10	11
âihkunâu	cake	na	u	2	7	9
wîhkwâyâ	sock	ni	â	3	5	8
tî	tea	ni	î	1	5	6
châkwân	thing	ni	n	5	0*	5
sisis	scissors	ni	s	1	4	5
chûchû	bottle	ni	û	2	2	4
kânichî	sweater	ni	î	4	0	4
kwâhpî	coffee	ni	î	1	3	4
nîtukuyin	medicine	ni	n	1	1	2
pwâkit	pocket	ni	t	1	0	1

Notes. NEC = Northern East Cree. na = animate noun. ni = inanimate noun. POSS = tokens inside a possessive construction. Non-POSS = tokens outside possessive contexts. *The type *châkwân* is also an interrogative pronoun ‘what’ that occurs in 662 non-POSS tokens throughout the dataset, but these forms are not nouns eligible for possessive inflection.

This table reveals a dearth of unifying factors among these nouns. All of the types in Table 7.13 are alienably possessed, but so are 32 alienable noun types in the input that disallow *-im* (Table 7.8). Alienability cannot unite the 18 types under consideration. No other evident characteristics tie these 18 types together as one class that requires *-im*:

- The types do not share a trait related to grammatical animacy: Eight types are animate and ten are inanimate.
- There are eight different stem-final segments, and no evident natural class ties them together: vowels /â, î, u, û/ and consonants /t, s, n, h/.
- There is no clear semantic class either: Some nouns refer to human entities, other to biologically animate entities, and others to inanimate objects.

- Furthermore, four types have a semantic mismatch between their respective biological and grammatical animacy classifications: *âihkunâu* ‘cake’, *awâshishihkânish* ‘doll’, *îyiyihkânish* ‘figurine’, and *piyichîs* ‘pants’.

In sum, it appears unlikely that children could extrapolate a clear pattern from adult input to form a positive principle such as: *Apply -im to this class of nouns and nowhere else.*

7.1.7. The road so far: Principles extrapolated from input

Altogether, the picture in child-directed speech is as follows. The vast majority of NEC noun types and tokens that appear as possessives in the input do not require the possessive suffix *-im*. No shared characteristics seems to unify the NEC nouns that require *-im*, although generally all English nouns in mixed-language possessives take the suffix. This indicates that speakers identify, abstract, and apply *-im* as a marker of possession.

A combination of three principles represent the most parsimonious account explaining how children may extrapolate from adult input productive rules for the distribution of *-im*:

P-All: Apply *-im* to all nouns as possessives, except

P-Inalienable: Inalienably possessed NEC noun types; and

P-Final: NEC noun types with stem-final /m, n, kw/.

The present study is largely descriptive and atheoretical, but this relatively straightforward set of postulations accords with the Specificity Principle, an idea assumed by many generativist and usage-based accounts of L1 acquisition (Eisenbeiß et al., 2009, pp. 148–149). In brief, the Specificity Principle states that children can acquire general principles which can then be overridden by more specific principles.

If children assume the application of *-im* as the general (elsewhere) principle that the suffix marks possession, then perhaps all they need to do from there is identify the more specific principles that override that rule. If two such principles, (in)alienability and stem-final phonology, along with this general principle together account for more than 90 percent of the suffix’s distribution, then children might just need to learn a relative handful of exceptions that are found in the input.

7.1.8. What about the exceptions?

The question of how children acquire exceptions to rules is central to the acquisition of inflection (see, e.g., Yang, 2016, 2018). Children acquiring German, for example, must discover that the suffix *-s* is the default plural marker for nouns, even though it occurs with a very small minority of noun types (Clahsen, 1999; Clahsen et al., 1992). Yang's Tolerance Principle (e.g., 2016) represents a recent effort to explain how children learn exceptions by calculating and comparing frequencies of regularities and exceptions in the input. The Tolerance Principle may help explain how children acquire the exceptions for *-im*, but the limitations of the sample for the present study may severely circumscribe the application of these types of statistical models. Nonetheless, the input may hold some important clues for how children acquire the exceptions for *-im*.

Seven noun types occur in child-directed speech within the sample and represent the exceptions to the set of principles outlined in §7.1.7. These three types take *-im*, contrary to the principles: *châkwân* 'thing', *nituhkuyin* 'medicine', and *wâskâhîkin* 'house'. These four types disallow *-im*, contrary to the principles: *achimushish* 'puppy', *akuhp* 'coat', *ischis* 'mitten', *ût* 'canoe'.

Some aspects of adult input may help children acquire these noun types as exceptions, such as frequency of tokens and occurrences in contrasting forms. For example, six of these seven types all occur in contrasting forms inside and outside of possessive contexts: Five are listed in Table 7.6, while *châkwân* is also an interrogative pronoun that occurs hundreds of times in bare form through the dataset. These contrasting forms in the input would help children identify these six noun types as exceptions to the principles in §7.1.7.

The only possible outlier here is the type *ischis* 'mitten'. However, given some complications with coding, that noun type may also occur in contrasting forms within child-directed speech. The adult produces four possessive tokens of *ischis*, which is translated as 'mitten' within the CCLAS corpus but not listed in the NEC dictionary (Junker et al., 2012). She also has two non-possessive tokens of *astis*, which is translated as 'mitten' within the corpus but listed in the dictionary as 'sinew'. If *ischis* and *astis* are actually the same noun type, then 'mitten' indeed occurs in both possessive and non-possessive contexts within adult input in the corpus. This would mean that children encounter contrasting forms for every exception to the principles in §7.1.7. This may facilitate the acquisition of such exceptions.

7.1.9. Summary

This section describes patterns in the distribution of the possessive suffix *-im* within adult input. Children acquiring NEC face the challenge of discovering the position for *-im* within the inflectional template, deciphering its meaning, and figuring out which noun types require the suffix—and which types cannot take the suffix. Complicating the task is the fact that *-im* occurs with just a small minority of noun types and their tokens in child-directed speech.

In the adult-level grammar, the suffix has a complex distribution that has evaded parsimonious linguistic description. However, the present study asks which patterns in child-directed speech may give children clues as to where and when to use *-im*. Grammatical animacy likely gives no reliable information about where *-im* is required, but inalienable possession and morphophonology are excellent predictors of where *-im* does **not** occur. Despite the complexity with *-im* in the adult grammar, children may be able to extrapolate just three productive principles from adult input to account for more than 90 percent of the distribution of the suffix, leaving just a handful of exceptions to be learned.

7.2. The possessive suffix *-im* in Ani's speech

This section describes the acquisition of the possessive suffix by Ani. As the previous chapter demonstrates, Ani produces 36 total tokens of NEC and mixed-language nouns as possessives throughout her entire sample. Seven of these tokens do not bear any NEC inflection (see §7.2.4 in the previous chapter). Therefore, this section is concerned with describing Ani's usage of *-im* across her 29 possessee tokens that could or should take the *-im*.

§7.2.1 examines Ani's usage of *-im* across both NEC and English noun tokens (§7.2.1.1) and types (§7.2.1.2). §7.2.2 considers her production against the four criteria for productivity for this dissertation (§4.2.5.). §7.2.3 evaluates her usage of *-im* in light of the three principles from §7.1.7, and §7.2.4 summarizes findings.

7.2.1. All possessive suffix tokens

This section presents the basic landscape of Ani's usage of *-im* in obligatory contexts requiring the proper distribution of the suffix. I consider an obligatory context to be the occurrence of a noun token as a possessee taking NEC inflection, where the noun type for that token either

requires or disallows *-im*. In such contexts, a child must apply *-im* to noun types that require the suffix and not apply *-im* to noun types that disallow the suffix. §7.2.1.1 looks at her production across all noun tokens, and §7.2.1.2 breaks down her production across noun types.

7.2.1.1. Distribution across noun tokens

Table 7.14 presents Ani’s usage of *-im* with NEC noun tokens, and Table 7.15 shows her usage with English tokens as mixed-language possessives that bear NEC inflection. This section assumes that Ani should apply *-im* to all such English tokens, because that is what occurs in adult speech.

Table 7.14: Distribution of -im across all NEC noun tokens, in Ani’s speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Requires <i>-im</i>	0	5	n/a	1.00
Disallows <i>-im</i>	11	n/a	0	0.00
Total	16	5	0	0.31

Notes. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Table 7.15: Distribution of -im across all mixed-language noun tokens, in Ani’s speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Applies <i>-im</i>	12	1	n/a	0.08
Total	12	1	n/a	0.08

Notes. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Altogether Ani produces 11 on-target NEC tokens and five errors, while she has 12 adult-like applications of *-im* with English stems and just one error. She has no errors of commission with the suffix in the dataset.

7.2.1.2. Distribution across noun types

Turning now to noun types, Ani produces 10 total NEC noun types as possessives in obligatory contexts (Table 7.16). Eight of these types all have adult-like tokens (11 total), where *-im* is disallowed and Ani correctly does not apply *-im*. However, two types require *-im* and Ani omits the suffix.

Table 7.16: Distribution of *-im* across all NEC noun types, in Ani's speech

<i>-im</i> suffix	Types w/ correct tokens	Om.	Comm.	Prop. of errors
Requires <i>-im</i>	0	2	n/a	1.00
Disallows <i>-im</i>	8	n/a	0	0.00
Total	8	2	0	0.25

Notes. NEC = Northern East Cree. w/ = with. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

In her mixed-language possessives, Ani uses eight different noun types (Table 7.17). Seven types have adult-like tokens (12 total), where Ani applies the suffix *-im*. For one type, Ani omits the *-im* that would be used in adult speech.

Table 7.17: Distribution of *-im* across all mixed-language noun types, in Ani's speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Applies <i>-im</i>	7	1	n/a	0.14
Total	7	1	n/a	0.14

Notes. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Tables 7.18 and 7.19 bring together all of Ani's 18 noun types (29 tokens) as possessives in obligatory contexts for the proper application of *-im*. The tables include the total tokens for each type, including the number of errors.

Overall Ani produces relatively few tokens per type, and she has just six types with more than one token. The bulk of her production is adult-like: 15 types have only adult-like tokens (23 tokens), and her errors are concentrated in just three types (six tokens). Ani has no errors of commission with *-im*, which makes it difficult to determine when she first analyzes the suffix prior to her adult-like application. The next section traces her development over time toward this adult-like usage of *-im*.

Table 7.18: Distribution of *-im* w/ all nouns requiring *-im*, in Ani's speech

Type	Gloss	Category	Adult-like tokens	Errors	Total
			+ <i>-im</i>	Om.	
chûchû	bottle	ni	0	4	4
bed	bed	eng	3	0	3
chair	chair	eng	3	0	3
friend	friend	eng	2	0	2
Barbie	Barbie	eng	1	0	1
pencil	pencil	eng	1	0	1
piyichîs	pants	na	0	1	1
purse	purse	eng	1	0	1
scissors	scissors	eng	1	0	1
shoe	shoe	eng	0	1	1

Notes. w/ = with. na = animate noun. ni = inanimate noun. eng = English. + *-im* = tokens with adult-like application of the *-im* suffix. Om. = tokens with errors of omission of *-im*.

Table 7.19: Distribution of *-im* w/ all nouns disallowing *-im*, in Ani's speech

Type	Gloss	Category	Adult-like tokens	Errors	Total
			- <i>-im</i>	Comm.	
îpit	tooth	nid	3	0	3
îch	home	nid	2	0	2
akuhp	coat	ni	1	0	1
mischisin	shoe	ni	1	0	1
pichiwiyan	shirt	ni	1	0	1
pûshî	cat	na	1	0	1
uhtâwî	father	nad	1	0	1
wâpuyân	blanket	ni	1	0	1

Notes. w/ = with. na = animate noun. ni = inanimate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. - *-im* = tokens with adult-like non-application of the suffix. Comm. = tokens with errors of commission of *-im*.

7.2.2. Productivity of *-im*

This section explores Ani's usage of *-im* in light of the criteria for productivity outlined in §4.2.5. To give a picture of Ani's usage over time, Table 7.20 categorizes her possessee tokens and *-im* per recording session. She produces relevant possesseees across just eight of her 15 sessions.

Table 7.20: Ani's possessee tokens and usage of *-im*, per recording session

Session	Child age	Adult-like tokens		Errors		Total
		+ <i>-im</i>	– <i>-im</i>	Om.	Comm.	
A1.06	2;03.24	0	1	0	0	1
A1.12	2;07.06	0	0	4	0	4
A1.15	2;08.23	0	1	0	0	1
A1.24	3;02.05	0	0	1	0	1
A1.26	3;04.09	0	1	0	0	1
A1.30	3;06.23	0	2	1	0	3
A1.35	4;00.13	7	3	0	0	10
A1.37	4;03.07	5	3	0	0	8
Total		12	11	6	0	29

Notes. + *-im* = tokens with adult-like application of the *-im* suffix. – *-im* = tokens with adult-like non-application of the suffix. Om. = tokens with errors of omission of *-im*. Comm. = tokens with errors of commission of *-im*.

Ani's first obligatory context for the correct application of *-im* comes in her first recording session at age 2;03.24. Her usage of *-im* is adult-like with the only token (2): The noun type *uhtâwî* 'father' is inalienably possessed and so does not take the possessive suffix.

(2) ĩσ-ĩ" ▷"Ĉ-Ā"x

Mâniyâh uhtâwîh.

Target: mâni-yâh Ø-uhtâwî-h

DEM.DIST-3' 3-father-3'

Actual: mâni-*yâ Ø-uhtâwî-h

DEM.DIST-*0' 3-father-3'

'That is his father.' (Ani, A1.06, 2;03.24, 06:59)

The child's next relevant context for *-im* comes at age 2;07.06. Here she produces two different noun types that each require *-im*: *chûchû* 'bottle' (three tokens) and *piyichîs* 'pants'

(one token). She omits the required suffix for all four tokens, as in (3–4). Her omission of *-im* actually reflects a larger pattern: At this age point, she omits all possessive morphology.

(3) ⓁⓂ ⓂⓂⓂⓂⓂⓂ[Ⓜ]
 Dora upiyichîsimh
 Target: Dora u-piyichîs-im-h
 Actual: Dora *∅-piyichîs-*∅-*∅
 name 3-pants-POSS-3'
 ‘Dora’s pants’ (Ani, 2;07.06, A1.12, 00:13)

(4) ⓂⓂ Ⓜ ⓂⓂⓂⓂ[Ⓜ]
 Nîyi û uchûchûmish.
 Target: nîyi û ni-chûchû-m-ish
 Actual: nîyi û *∅-chûchû-*∅-sh
 1 DEM.PXL 1-bottle-POSS-DIM
 ‘This is my bottle.’ (Ani, 2;07.06, A1.12, 28:54)

Over her next three possessee tokens, Ani seems to go back and forth in her adult-like usage of the suffix *-im*. At 2;08.23, Ani has one apparently adult-like token of *wâpuyân* ‘blanket’ as a possessee where she does not apply *-im*. Her next relevant token is with *chûchû* ‘bottle’ as a possessee at 3;02.05, but she has an error of omission with *-im*. Then comes another apparently adult-like token of *pûshî* ‘cat’ as a possessee at 3;04.09, where Ani does not use *-im*. However, with all three of these possessee tokens Ani has committed errors of omission with the required person prefix. This likely indicates that Ani’s non-application of *-im* to *wâpuyân* and *pûshî* is actually a reflection of her global omission of all possessive morphology up through this age point.

As Chapter 6 demonstrates, Ani’s first adult-like usage of the person prefix with possessee begins at age 3;06.23. However, her three possessee at this age point provide equivocal evidence regarding her acquisition of the possessive suffix. She has two adult-like possessee where she correctly does not apply *-im*: *nimisichisin* ‘my shoe’ and *nipichiwiyân* ‘my shirt’.

However, she also produces a mixed-language possessee and omits *-im* in a non-adult-like manner: *nishoes* ‘my shoes’, which should be *nishoesim*.

It is very difficult to determine whether Ani has acquired productive usage of *-im* up to this age point. She has produced no tokens bearing the suffix, and her seemingly adult-like non-applications of *-im* may actually indicate that she has not yet identified the suffix at all. This situation changes two recording sessions later.

At age 4;00.13, Ani navigates the application of *-im* in an adult-like fashion with one NEC noun type and four English types. With NEC *îpit* ‘tooth’ she has adult-like non-application of *-im* with all three tokens, as in (5). For the four English types, she applies *-im* to all tokens in an adult-like manner: *Barbie* (one token), *bed* (two tokens), *chair* (three tokens), and *purse* (one token). This production represents her first actual applications of *-im* in the sample.

Importantly, with five of these mixed-language tokens, Ani uses *-im* correctly even though she has errors with the person prefix, as in (6). This indicates that Ani likely achieves adult-like awareness of the possessive suffix before the person prefix.

- (5) $\sigma _ \Delta \hat{r} \wedge \text{c}_x$
 Nimui chîpit.
 nimui ch-îpit
 NEG 2-tooth
 ‘Not your tooth.’ (Ani, 4;00.13, A1.35, 19:59)

- (6) $\dot{C} \sigma \dot{C}'' < \text{c} \wedge \nabla < \dot{\Delta} \triangleright \text{c} \Delta \text{c} \text{c}'' \text{c}_x$
 Tânitâh Barbie âi uchairimh.
 Target: tâni-tâh Barbie âi u-chair-im-h
 Actual: tâni-tâh Barbie âi *∅-chair-im-h
 where-LOC name HES 3-chair-POSS-Q
 ‘Where did you put Barbie’s, um, chair?’ (Ani, 4;00.13, A1.35, 14:58)

In her next recording session at 4;03.07, Ani produces six different noun types as possessives: NEC nouns *akuhp* ‘coat’ (one token) and *îch* ‘home’ (two tokens), along with English nouns *bed*

(one token), *friend* (two tokens), *pencil* (one token), and *scissors* (one token). Her usage of *-im* is adult-like for all eight tokens, as in (7–8).

(7) ṛḷσ° ṛṛḷḷ_x
 chÿâniu chÿchinâhch.
 chÿ-âniu ch-ÿch-inâ-hch
 2-PL.EXCL 2-home-2/3PL.PSR-LOC
 ‘... at our house.’ (Ani, 4;03.07, A1.37, 44:52)

(8) Ć° ▷ḷḷḷ°ḷḷ_x
 Tân ufriendimh.
 tân u-friend-im-h
 where 3-friend-POSS-3’
 ‘Where is her/his friend?’ (Ani, 4;03.07, A1.37, 49:17)

Altogether, at the age point of 4;03.07, Ani has demonstrated productive usage of the possessive suffix *-im*. She has used *-im* in two consecutive recording sessions, with no errors in her usage of the suffix. Furthermore, she has used the morpheme correctly with ten different noun types, and by this age point she has employed six of those types in contrasting word forms without *-im*:

- bare noun/name *Barbie* (11 tokens)
- bare noun *chair* (three tokens) and two tokens with the NEC locative suffix as *chairihch*
- bare noun *friend* (one token)
- bare noun *pencil* (five tokens)
- bare noun *purse* (one token)
- the word form *scissors* (two tokens)

7.2.3. Possible connections to adult input

§7.1.7 argues that children may extrapolate a few straightforward principles to account for the distribution of *-im*, and these principles may guide their acquisition and usage of the suffix. This

section considers whether Ani’s production seems to adhere to these principles. To review, the three principles are as follows. The ensuing sections begin with the two more specific principles.

P-All: Apply *-im* to all nouns as possessees, except

P-Inalienable: Inalienably possessed NEC noun types; and

P-Final: NEC noun types with stem-final /m, n, kw/.

The previous section (§7.2.2) demonstrates that Ani has no errors of commission with *-im* and seems simply to omit all possessive inflection prior to age 3;06.23. Therefore, this section only considers Ani’s possessees beginning at 3;06.23, the age point where she first seems to evince knowledge of possessive inflection by producing her first adult-like person prefix. These possessees are listed in Table 7.21. Types that are also among the most frequent NEC possessees in adult input (Table 7.4) or among the only mixed-language possessees in adult input (Table 7.5) are marked with an asterisk.

Table 7.21: Distribution of -im w/ all nouns as possessees, in Ani’s speech from 3;06.23

Type	Gloss	Category	Adult-like tokens		Errors		Total
			+ -im	- -im	Om.	Comm.	
bed	bed	eng	3	0	0	0	3
chair	chair	eng	3	0	0	0	3
îpit *	tooth	nid	0	3	0	0	3
friend *	friend	eng	2	0	0	0	2
îch *	home	nid	0	2	0	0	2
akuhp *	coat	ni	0	1	0	0	1
Barbie	Barbie	eng	1	0	0	0	1
mischisin *	shoe	ni	0	1	0	0	1
pencil	pencil	eng	1	0	0	0	1
pichiwiyan *	shirt	ni	0	1	0	0	1
purse	purse	eng	1	0	0	0	1
scissors	scissors	eng	1	0	0	0	1
shoe	shoe	eng	0	0	1	0	1

Notes. w/ = with. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. + -im = tokens with adult-like application of the *-im* suffix. - -im = tokens with adult-like non-application of the suffix. Om. = tokens with errors of omission of *-im*. Comm. = tokens with errors of commission of *-im*. * = type also appears in Tables 7.4–7.5.

7.2.3.1. *P-Inalienable*

Ani has two inalienably possessed NEC noun types: *îpit* ‘tooth’ (three tokens) and *îch* ‘home’ (two tokens). She also correctly does not apply *-im* to these tokens. Once again, both types are among the most frequent possessives in child-directed speech—and *îch* ‘home’ is particularly salient in its frequency—so this may facilitate extrapolation of this principle.

7.2.3.2. *P-Final*

Ani uses two alienable NEC noun types with stem-final /m, n, kw/: *mischisin* ‘shoe’ (one token) and *pichiwiyan* ‘shirt’ (one token). She correctly does not apply *-im* to these tokens. Both of these types are among the most common possessives in adult input (Table 7.4), and both occur in contrasting possessive/non-possessive forms (Table 7.6), which may facilitate the extrapolation of this principle. None of Ani’s mixed-language possessives have stems ending in /m, n, kw/, so the dataset affords no opportunity to see how she may handle *-im* with such types.

7.2.3.3. *P-All*

P-Inalienable and P-Final account for four of Ani’s five NEC noun types as possessives but none of her English types. P-All accounts for seven of these eight types (12 total tokens), as Ani applies *-im* to the following: *bed*, *chair*, *friend*, *Barbie*, *pencil*, and *purse*. So far the three principles together have accounted for the bulk of Ani’s usage of *-im* beginning at age 3;06.23: 11/13 types, 19/21 tokens.

7.2.3.3.1. *An alternative account: “English only”?*

I must also address another possibility before moving forward: By the time her sample ends at age 4;03.07, Ani may have acquired a rule stipulating that English nouns alone take *-im* as a marker of possession.

At this point, she has applied *-im* correctly to various English noun types, but the data have no instances of the child producing *-im* with an NEC noun type. Instead, all of Ani’s adult-like NEC types disallow *-im*. Ani has also clearly acquired the categorical distinction between English and NEC noun types, as evidenced by her blanket application of *-im* to English types only. Altogether the data offer no counterevidence to discount the possibility that Ani is omitting *-im* from any and all NEC noun types as a productive rule. The limitations of the data sample

leave this an open question, and without direct evidence, I cannot completely discount the possibility that Ani has generalized an “English only” rule for her usage of *-im*. However, I think two factors indicate that Ani probably has not acquired such a rule.

First, as §7.3. and §7.4 demonstrate, the input evinces no “English only” principle for *-im*, and neither of the other two children represented in the CCLAS corpus acquire such a principle. Second, Ani has already shown the ability to master at least one aspect of *-im* from limited examples in the input. Child-directed speech contains only seven English types (10 total tokens) with the possessive suffix and yet Ani and the other two children each generalize the principle that all English noun types take *-im* as possessives. Child-directed speech contains much more evidence that some NEC noun types also need *-im*: 18 different alienable NEC noun types (91 total tokens) occur with *-im* in the input. Given her on-target generalization from a small amount of English evidence, it seems unlikely that Ani would misanalyze an even greater amount of evidence in the input to come up with an erroneous generalization for NEC types.

7.2.3.4. *Exceptions to the principles*

Two of Ani’s possessives do not adhere to the three principles: NEC *akuhp* ‘coat’ (one token) and English *shoe* (one token). The type *akuhp* is one of the top five most frequent possessives in adult input (Table 7.4) and also occurs in contrasting possessive/non-possessive forms (Table 7.6), and so these features of input may have helped Ani learn that *akuhp* is one of the exceptions to the principles. However, it is harder to account for the fact that Ani does not apply *-im* in (9).

- (9) $\sigma \sim \nabla \rho^L$
 nishoesim
 Target: ni-shoe-s-im
 Actual: ni-shoe-s-* \emptyset
 1-shoe-ENG.PL-POSS
 ‘my shoes’ (Ani, 3;06.23, A1.30, 21:45)

Perhaps Ani does not apply *-im* in (9) because of the presence of the English plural suffix. However, Billy applies *-im* after the English plural (10) so that plural marking does not necessarily preclude the NEC possessive suffix. Regardless, it is clear that the vast majority of

Ani's production does indeed adhere to the principles from adult input, and one of her two exceptions may likely be accounted for by its frequency and presence in contrasting forms within child-directed speech.

- (10) <◁◁í◁ ◁◁◁í◁◁ ▷◁◁í◁◁◁_x
 Awân aniyâh ukeysimh.
 awân ani-yâh u-key-s-im-h
 who DEM.DIST-0'p 3-key-ENG.PL-Q
 'Whose keys are these?' (Billy, 5;03.22, B3.14, 12:22)

7.2.4. Summary

Ani's sample contains 18 noun types (29 tokens) of possessives where she must navigate usage of the possessive suffix *-im*. The child does not put *-im* on any NEC nouns, and so it is difficult to determine when she transitions from omitting the suffix to productive non-application. Indeed, Ani seems to go through a no-inflection stage for possessive marking until age 3;06.23. Ani's English nouns in mixed-language possessives, though, provide crucial evidence that she has identified the suffix, abstracted principles for its distribution, and begun to apply it productively. She first seems to use the suffix in an adult-like fashion at age 4;00.13, and she meets the criteria for productive usage by age 4;03.07. Furthermore, Ani largely seems to adhere to the three principles which may be extrapolated from child-directed speech to account for where to use *-im*.

7.3. The possessive suffix *-im* in Daisy's speech

This section explores Daisy's acquisition of the possessive suffix. It begins with a survey of her usage of *-im* across both NEC and English noun tokens (§7.3.1.1) and noun types (§7.3.1.2). §7.3.2 examines her production in light of the criteria for productivity adopted by the present study, which includes consideration of the patterns her errors may reveal (§7.3.2.1). §7.3.3 evaluates Daisy's usage of the possessive suffix with respect to the three principles that children may extrapolate from adult input: P-Inalienable (§7.3.3.1), P-Final (§7.3.3.2), and P-All (§7.3.3.3)—with a brief examination of how Daisy may acquire the few exceptions to these rules. §7.3.4 summarizes findings.

7.3.1. All possessive suffix tokens

This section reviews Daisy’s usage of *-im* across her noun tokens (§7.3.1.1) and noun types §7.3.1.2).

7.3.1.1. Distribution across noun tokens

Altogether Daisy produces 220 NEC noun tokens as possessives where she must employ the proper application of *-im* (Table 7.22). This number far exceeds Ani’s tokens and even surpasses the adult’s 220 tokens in Daisy’s subcorpus. The distribution of *-im* in Daisy’s speech resembles that in the input, as the vast majority of the child’s tokens disallow *-im*. Daisy has more mixed-language possessives than the adult, and she uses *-im* on all but two tokens (Table 7.23).

Table 7.22: Distribution of *-im* w/ all NEC noun tokens as possessives, in Daisy’s speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Requires <i>-im</i>	35	0	n/a	0.00
Disallows <i>-im</i>	181	n/a	4	0.02
Total	216	0	4	0.02

Notes. w/ = with. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Table 7.23: Distribution of *-im* w/ all mixed-language noun tokens, in Daisy’s speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Applies <i>-im</i>	21	2	n/a	0.09
Total	21	2	n/a	0.09

Notes. w/ = with. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

7.3.1.2. Distribution across noun types

Moving on to noun types, Daisy’s speech contains 46 different NEC noun types requiring proper application of *-im* (Table 7.24). She distributes *-im* in an adult-like manner with 43 types, with errors of commission occurring on only three types: *chîshtihîkin* ‘fork, needle’; *utâpânâskw* ‘car, vehicle’; and *wâpuyân* ‘blanket’. Each type is an alienable noun that adheres to P-Final (§7.1.7.) and so disallows *-im*.

Daisy has 14 different English types in mixed-language possessives (Table 7.25). She applies *-im* to 13 of these types but not with one type: *room*. This is coded here as an error of omission, but this may reflect an error in my interpretation (§7.3.2.1).

Table 7.24: Distribution of *-im* w/ all NEC noun types, in Daisy's speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Requires <i>-im</i>	10	0	n/a	0.00
Disallows <i>-im</i>	33	n/a	3	0.08
Total	43	0	3	0.07

Notes. w/ = with. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Table 7.25: Distribution of *-im* w/ all mixed-language noun types, in Daisy's speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Applies <i>-im</i>	13	1	n/a	0.07
Total	13	1	n/a	0.07

Notes. w/ = with. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

To bring her production together, Tables 7.26 and 7.27 present Daisy's NEC and mixed-language types that occur with three or more tokens. For comparison with the input, types that also occur among the adult's most frequent NEC types (Table 7.4) and only mixed-language types as possesses (Table 7.5) are marked with an asterisk. This overlap suggests a connection with frequency in input: Daisy's very most frequent types, which constitute the bulk of her tokens, are also among the most frequent in child-directed speech.

Table 7.26: Distribution of *-im* w/ all nouns requiring *-im*, in Daisy's speech

Type	Gloss	Category	Adult-like tokens	Errors	Total
			+ <i>-im</i>	Om.	
pîpî *	baby	na	22	0	22
friend *	friend	eng	3	0	3
name	name	eng	3	0	3
phone	phone	eng	3	0	3
awâshish	child	na	3	0	3

Notes. w/ = with. na = animate noun. eng = English. + *-im* = tokens with adult-like application of the *-im* suffix. Om. = tokens with errors of omission of *-im*. * = type also appears in Tables 7.4–7.5.

Table 7.27: Distribution of *-im* w/ all nouns disallowing *-im*, in Daisy’s speech

Type	Gloss	Category	Adult-like tokens	Errors	Total
			– <i>-im</i>	Comm.	
kâwî *	mother	nad	45	0	45
îch *	home	nid	37	0	37
uhtâwî *	father	nad	13	0	13
tihchî *	hand	nid	10	0	10
wîchâwâkin *	friend	na	9	0	9
uhkum *	grandmother	nad	8	0	8
nipâwin	bed	ni	5	0	5
shchîshikw *	eye	nid	5	0	5
shtikwân *	head	nid	5	0	5
skât	leg	nid	5	0	5
ichishî	intestines, stomach	nad	4	0	4
ichikum	phlegm, mucus	nad	3	0	3
shîm *	younger sibling	nad	3	0	3
mischisin *	shoe	ni	3	0	3

Notes. w/ = with. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. – *-im* = tokens with adult-like non-application of the suffix. Comm. = tokens with errors of commission of *-im*. * = type also appears in Tables 7.4–7.5.

7.3.2. Productivity of *-im*

This section evaluates Daisy’s usage of *-im* against the criteria for productivity adopted by the present study (§4.2.5.). Table 7.28 breaks down her relevant noun tokens across her sessions.

Daisy’s first recording session at age 3;08.10 contains multiple possessives requiring judicious navigation of *-im*. She correctly puts *-im* on one token of *pîpî* ‘baby’ in (11), where she uses all obligatory possessive morphology (Margaret, REH1-012, 01:07:09). Daisy also has adult-like non-application of *-im* with nine other noun types: *ichikum* ‘phlegm, mucus’; *îpit* ‘tooth’; *kâwî* ‘mother’; *mis* ‘older sister’; *mischisin* ‘shoe’; *shihkun* ‘toe’; *skât* ‘leg’; *stâs* ‘older brother’; *tihchî* ‘hand’. In (12), for example, Daisy is telling a story about a medical procedure, and she correctly does not apply *-im* to *skât* ‘leg’

Table 7.28: Daisy's possessee tokens and usage of *-im*, per recording session

Session	Child age	Adult-like tokens		Errors		Total
		+ <i>-im</i>	- <i>-im</i>	Om.	Comm.	
B1.01	3;08.10	1	9	0	0	10
B1.02	3;09.01	0	3	0	0	3
B1.03	3;09.22	12	22	0	0	34
B1.04	3;11.11	21	25	2	3	51
B1.05	4;00.00	0	15	0	1	16
B1.08	4;02.06	0	24	0	0	24
B1.11	4;04.04	3	13	0	0	16
B1.14	4;06.02	3	14	0	0	17
B1.17	4;07.28	0	10	0	0	10
B1.20	4;10.03	4	14	0	0	18
B1.24	5;00.20	5	13	0	0	18
B1.27	5;04.12	1	1	0	0	2
B1.30	5;07.03	5	13	0	0	18
B1.31	5;10.02	1	5	0	0	6
Total		56	181	2	4	243

Notes. + *-im* = tokens with adult-like application of the *-im* suffix. - *-im* = tokens with adult-like non-application of the suffix. Om. = tokens with errors of omission of *-im*. Comm. = tokens with errors of commission of *-im*.

- (11) ▷ĂĂΓ^u||
 upîpîmish-h
 u-pîpî-m-ish-h
 3-baby-POSS-DIM-3'
 'her little baby' (Daisy, 3;08.10, B1.01, 23:29)

- (12) Ṛ^uΔ^uΓσ^uσ^uΔ^uσ^u▷^uḃ^u_x
 Chîhwîhminishikiniwiyiu uskât.
 chîhwîhminishikiniwiyiu u-skât
 it.was.wanted.removed 3-leg
 'They wanted his leg cut off.' (Daisy, 3;08.10, B1.01, 13:54)

In her next recording session at 3;09.01, Daisy has another two tokens of *kâwî* 'mother' along with one token of *pîtihuyâkin* 'fishing catch'. Neither type requires *-im* and she does not apply the suffix.

Despite the fact that Daisy has adult-like usage of *-im* in two consecutive sessions, she has not yet met the requirements for demonstrating productivity. She has used only two alienably possessed noun types (*mischisin* ‘shoe’ and *pîpî* ‘baby’) so far. These are the only such types that can occur outside of possessive contexts and thus most directly demonstrate Daisy’s knowledge of *-im*. She has used *pîpî* in two such contrasting word forms to this point: *pîpîsh* ‘**little** baby’ (three tokens) and *pîpîshich* ‘little babies’ (one token), but she has not yet produced contrasting forms for another word type.

Just a few weeks later at age 3;09.22, Daisy’s speech contains an explosion of 34 possessee tokens that are all adult-like in their occurrence with or without *-im*. This covers 15 NEC noun types: *âmihkwân* ‘spoon’; *htiwikî* ‘ear’; *îch* ‘home’; *ichikum* ‘phlegm, mucus’; *ichishî* ‘intestines, stomach’; *kâwî* ‘mother’; *minihkwâkin* ‘cup’; *mis* ‘older sister’; *mushum* ‘grandfather’; *pîpî* ‘baby’; *shchîshikw* ‘eye’; *shtikwân* ‘head’; *skut* ‘nose’; and *uhkum* ‘grandmother’. Again, *pîpî* ‘baby’ is the only alienable NEC type in this group that can occur with *-im*, but Daisy does apply *-im* to one English type: *phone* (one token), in (13).

- (13) ▷∩" PṘ< Ṙ<"▷ṘΔΓ° <ḷx
 Utih kiyipwâ chiphoneimiu â.
 u-tih kiyipwâ chi-phone-im-iu â
 DEM.PXL-LOC of.course 2-phone-POSS-1PL.INCL.PSR Q
 ‘This is where our phone is, OK?’ (Daisy, 3;09.22, B1.03, 29:21)

By age 3;09.22, Daisy satisfies the criteria for demonstrating productive usage of *-im*. She has adult-like usage of the suffix in two consecutive recording sessions, with no errors in her usage. She uses the suffix across more than two noun types, and in addition to her production of contrasting forms for *pîpî* ‘baby’, she produces contrasting word forms for three types:

- bare stem *âmihkwân* ‘spoon’ (two tokens) as well as inflected form *âmihkwânishich* ‘**little** spoons’ (one token)
- bare stem *minihkwâkin* ‘cup’ (one token) as well as inflected form *minihkwâkinh* ‘cups’ (one token)
- bare stem *phone* (four tokens)

7.3.2.1. Errors with *-im*

Daisy has only two possible errors of omission, which both occur at 3;11.11: She produces the English stem *room* in two tokens of mixed-language possessee *niroominâhch* ‘in our (EXCL) room’, as in (14). I was unable to check these utterances with a speaker, and so I am assuming that a speaker would indeed apply the suffix to this English loanword. However, I could be mistaken, and Daisy’s production could indeed be adult-like.

- (14) σṛṛṁṁ^{ll}
 niroominâhch
Target: ni-room-?im-inâ-hch
Actual: ni-room-?*∅-inâ-hch
 1-room-1PL.EXCL.PSR-LOC
 ‘... in our room’ (Daisy, 3;11.11, B1.04, 36:20)

Regardless of whether Daisy’s two errors of omission are indeed errors, she does have four clear errors of commission with *-im* in her sample.

At age 3;11.11, Daisy incorrectly applies *-im* to two tokens of *utâpânâskw* ‘car, vehicle’ (15) and to one token of *wâpuyân* ‘blanket’ (16). In accordance with P-Final of the principles extrapolated from input (§7.1.7.), each noun type disallows *-im* because *utâpânâskw* ends in /kw/ and *wâpuyân* ends in /n/).

- (15) ṁṁṁṁṁṁ^{ll}
 utâpânâskwh
Target: u-utâpânâskw-h
Actual: u-utâpânâsk-*um-h
 3-vehicle-*POSS-3’
 ‘her/his vehicle’ (Daisy, 3;11.11, B1.04, 24:12)

- (16) ▷◁>↳[◌]
 uwâpuyân
 Target: u-wâpuyân
 Actual: u-wâpuyân-*im
 3-blanket-*POSS
 ‘her/his blanket’ (Daisy, 3;11.11, B1.04, 51:57)

She has one last error of commission at age 4;00.00, when she talks about the stinger of a bee in (17). Here the noun type *chîshthîkin* ‘fork, needle’ should not take *-im*, but Daisy applies it.

- (17) ▷↳[◌]◁◁[◌]▷[◌] ρ↳[◌]
 Uchîshthîkin kiyâh
 Target: u-chîshthîkin kiyâh
 Actual: u-chîshthîkin-*im kiyâh
 3-needle-*POSS also
 ‘... its stinger, too’ (Daisy, 4;00.00, B1.05, 11:27)

From this point, Daisy’s application of *-im* is completely adult-like after the age of 4;00.00. This marks a noticeable similarity between Ani and Daisy: Both children have error-free usage of the possessive suffix beginning around the age point of 4;00.

The next section examines Daisy’s productive usage of *-im* and how her mastery of the suffix may pattern with the three principles evident in child-directed speech (§7.1.7).

7.3.3. Possible connections to adult input

This section evaluates Daisy’s usage of the possessive suffix *-im* in light of the three principles which children may extract from adult speech. For convenience, the principles are restated here:

P-All: Apply *-im* to all nouns as possessees, except

P-Inalienable: Inalienably possessed NEC noun types; and

P-Final: NEC noun types with stem-final /m, n, kw/.

Daisy's three noun types that occur with errors of commission or possible errors of omission are excluded from the discussion in this section, because she produces no clearly adult-like possessee tokens with *room*, *utâpânâskw* 'car, vehicle', or *wâpuyân* 'blanket'. This leaves 43 adult-like NEC noun types (220 total tokens) and 13 adult-like English noun types in mixed-language possesseees (21 total tokens) to evaluate against the three principles.

7.3.3.1. *P-Inalienable*

Table 7.29 categorizes Daisy's 43 NEC noun types by (in)alienable possession. Her production completely adheres to P-Inalienable: None of her 22 inalienably possessed noun types take *-im*.

Table 7.29: Distribution of -im w/ NEC noun types in Daisy's speech, by (in)alienability

(In)alienability category	+ <i>-im</i>	– <i>-im</i>
Alienable	10	11
Inalienable	0	22

Notes. w/ = with. + *-im* = the number of noun types that require *-im*. – *-im* = the number of noun types that disallow *-im*.

Aspects of adult input may facilitate Daisy's extrapolation of P-Inalienable. Table 7.30 lists her 22 adult-like inalienable noun types, with comparison to their tokens in child-directed speech. 20/22 (90.91 percent) of Daisy's inalienable types also occur in adult input, including many of the adult's most frequent possesseees (Table 7.4). In fact, Daisy has only two types which do not appear in input: *ichikum* 'phlegm, mucus' and *pîwî* 'fur, feather, hair'. These seemingly unique types may constitute evidence that Daisy has extrapolated and applied P-Inalienable productively to forms not encountered in input.

Table 7.30: All inalienable NEC noun types, in Daisy’s speech and adult input

Type	Gloss	Daisy tokens	Adult tokens
kâwî	mother	45	67
îch	home	37	50
uhtâwî	father	13	11
tihchî	hand	10	18
uhkum	grandmother	8	15
shchîshikw	eye	5	21
shtikwân	head	5	16
skât	leg	5	4
ichishî	intestines, stomach	4	2
ichikum	phlegm, mucus	3	0
shîm	younger sibling	3	36
îpit	tooth	2	17
îwit	bag	2	9
kuhtishkui	throat	2	2
mis	older sister	2	10
shihkun	toe	2	2
skut	nose	2	3
htiwikî	ear	1	11
mushum	grandfather	1	15
pîwî	fur, feather, hair	1	0
stâs	older brother	1	4
tun	mouth	1	6

Notes. NEC = Northern East Cree.

7.3.3.2. P-Final

With 21 alienable noun types remaining, Table 7.31 breaks down Daisy’s usage of *-im* with stems ending in /m, n, kw/ and with stems ending in any other segment. Her production largely adheres to P-Final. She has only three exceptions, which are discussed in §7.3.3.4: *chîhchîkw* ‘wart’, *châkwân* ‘thing’, and *nituhkuyin* ‘medicine’ each end in /m, n, kw/ but take *-im*, and Daisy correctly applies it to each one.

Table 7.31: Distribution of *-im* w/ NEC types in Daisy’s speech, by stem-final segment

Stem-final segment	+ <i>-im</i>	– <i>-im</i>
/m, n, kw/	3	11
Any other segment	7	0

Notes. w/ = with. + *-im* = the number of noun types that require *-im*. – *-im* = the number of noun types that disallow *-im*.

Aspects of adult input may also facilitate the extrapolation of P-Final. Table 7.32 lays out Daisy’s alienable possessives and compares her tokens to those in child-directed speech. 18/21 of her alienable possessives also appear in adult input, including several of the adult’s most frequent possessives (Table 7.4). Furthermore, 15/21 types appear in contrasting possessive/non-possessive forms within child-directed speech (§7.1.1.2), which directly illustrate where *-im* is required. In fact, Daisy uses only three possessives not found in input: *awâshish* ‘child’, *chîhchîkw* ‘wart’, and *chûchûsh* ‘nipple’.

Table 7.32: All alienable NEC types as possessives, in Daisy’s speech and adult input

Type	Gloss	Daisy tokens	Adult tokens
pîpî *	baby	22	24
wîchâwâkin	friend	9	37
nîpâwin *	bed	5	5
mîschîsin *	shoe	3	20
awâshish	child	3	0
mâtiwâkin *	toy, game	2	13
nîtukuyin *	medicine	2	1
îshkwâshish *	girl	2	1
kânichî	sweater	1	4
tî *	tea	1	1
chîhchîkw	wart	1	0
atîm *	dog	1	3
mîchim *	food	1	9
âmîhkwân *	spoon	1	1
ashtutî *	hat	1	8
châkwân *	thing	1	5
mînihkwâkin *	cup	1	5
pîtihuyâkin	fishing catch	1	1
pîywâshîkin *	sock	1	5
chûchûsh	nipple	1	0
chîskutîmâchâsiu *	teacher	1	15

Notes. * = this type also occurs with contrasting non-possessive tokens in adult input.

7.3.3.3. P-All

The final principle is the default condition that *-im* applies to all nouns as possessives that are not subject to P-Inalienable or P-Final.

Daisy has seven NEC types that are alienable and end in a segment other than /m, n, kw/, and she applies *-im* to all: *awâshish* ‘child’, *chîskutîmâchâsiu* ‘teacher’, *chûchûsh* ‘nipple’,

ishkwâshish ‘girl’, *kânichî* ‘sweater,’ *pîpî* baby, *tî* ‘tea’. Only *awâshish* and *chûchûsh* do not appear as possessives in adult speech and so may directly constitute evidence that Daisy has extrapolated and applied P-All productively to forms not present in input.

Additionally, Daisy uses 13 different English noun types in adult-like mixed-language possessives, and she applies *-im* to all (21 tokens): *bus*, *cake*, *clock*, *friend*, *homework*, *Honda*, *name*, *nose*, *pencil*, *phone*, *sock*, *uncle*, and *zipper*. In comparison to her NEC noun types, only one of these English types appears as a possessee in input: *friend*. Daisy’s production of potentially unique mixed-language possessives provides evidence that she has indeed extrapolated and applied *-im* productively. She has not simply memorized a handful of noun types that occur with the suffix.

Finally, Daisy’s extrapolation of P-All and application of *-im* to English nouns demonstrates another facet of her acquisition of the suffix: The two specific principles of distribution for *-im* do not apply to loanwords. P-Inalienable does not transfer to borrowings, as Daisy uses *-im* with the English word *nose*, even though she does not put the suffix on the NEC counterpart *skut* ‘nose’. The principle P-Final also applies only to NEC noun types, since *name* and *phone* both end in a nasal consonant and yet Daisy applies *-im* to both.

7.3.3.4. *Exceptions to the principles*

The preceding sections demonstrate that Daisy’s usage of *-im* almost entirely adheres to principles which could be extrapolated from child-directed speech and together account for the bulk of the suffix’s distribution in input. Of Daisy’s 43 NEC noun types (220 total tokens) and 13 English noun types (21 total tokens) that require NEC possessive inflection, she produces only three types as exceptions to the scope of P-All, P-Inalienable, and P-Final: *chîhchîkw* ‘wart’ (one token), *châkwân* ‘thing’ (one token), and *nituhkuyin* ‘medicine’ (two tokens). In these cases, Daisy must have learned each noun type as an exception to the principles.

The noun type *chîhchîkw* ‘wart’ does not occur in child-directed speech, and it only appears once in the entire dataset, and so I cannot offer an account of how Daisy might know that it is an exception. Perhaps she has encountered it outside of the input sampled for the present study, but that is just speculation. However, both *châkwân* ‘thing’ and *nituhkuyin* ‘medicine’ occur as possessives within the adult input in the sample: The adult applies *-im* to *châkwân* with five tokens and to *nituhkuyin* once. Each type also occurs in contrasting forms outside of possession,

as the adult has hundreds of bare tokens of *châkwân* and one bare token of *nituhkuyin*. This exposure may illustrate to Daisy that each type is an exception when it comes to *-im*.

7.3.4. Summary

Daisy's sample contains more than 200 contexts where she must demonstrate correct usage of the possessive suffix *-im*. As in child-directed speech, the vast majority of Daisy's NEC noun types and tokens disallow *-im*, while she applies the suffix to nearly all of her English nouns in mixed-language possessives. Daisy evinces awareness of the suffix from her first recording session at age 3;08.10, demonstrates productive usage by 3;09.22, and has error-free usage of the suffix after age 4;00. Outside of her few errors, Daisy's distribution of *-im* adheres tightly to three principles that could be extrapolated from child-directed speech. Furthermore, her application of *-im* to English noun types in particular indicates that she does not simply memorize which nouns require *-im*. She uses the suffix as a productive grammatical marker.

7.4. The possessive suffix *-im* in Billy's speech

This section discusses *-im* in the sample for Billy, the oldest child represented in the present study. It reviews his application of *-im* across NEC and English noun tokens (§7.4.1.1) and types (§7.4.1.2) before evaluating his productive usage of the possessive suffix (§7.4.2) and errors (§7.4.2.1). Billy's production is also evaluated in light of the three principles that account for most of the distribution of the suffix in adult input: P-Inalienable (§7.4.3.1), P-Final (§7.4.3.2), and P-All (§7.4.3.3). §7.3.5 summarizes findings.

7.4.1. All possessive suffix tokens

This section briefly discusses Billy's distribution of *-im* across noun tokens (§7.4.1.1) and types (§7.4.1.2).

7.4.1.1. Distribution across noun tokens

Throughout his sampled recordings, Billy produces a total of 93 noun tokens taking NEC possessive inflection. 71 of these tokens (76.34 percent) are NEC (Table 7.33), and as with the adult and Daisy, the vast majority of Billy's tokens do not require the possessive suffix *-im*. The

remaining 22/93 tokens (23.66 percent) are mixed language possessives with an English stem (Table 7.34), and Billy applies *-im* to all but one. This is coded as an error of omission.

Table 7.33: Distribution of -im w/ all NEC nouns as possessives, in Billy's speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Requires <i>-im</i>	5	1	n/a	0.17
Disallows <i>-im</i>	65	n/a	0	0.00
Total	70	1	0	0.01

Notes. w/ = with. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Table 7.34: Distribution of -im w/ all mixed-language nouns, in Billy's speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Applies <i>-im</i>	21	1	n/a	0.05
Total	21	1	n/a	0.05

Notes. w/ = with. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

7.4.1.2. *Distribution across noun types*

Billy produces 28 total NEC types as possessives (Table 7.35), but only four types require *-im*: *ânishkiwishiu* ‘great-grandparent’, *chiskutimâchâsiu* ‘teacher’, *pîpî* ‘baby’, and *piyichîs* ‘pants’. He has one error of omission with *chûchû* ‘bottle’, with no adult-like tokens of that type. He uses 16 different English types and applies *-im* to all types but *classroom*. This non-application is coded as an error of omission but closely resembles Daisy’s lack of *-im* with the type *room* (§7.3.2.1) and is discussed in §7.4.2.1.

Table 7.35: Distribution of -im w/ all NEC noun types, in Billy's speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Requires <i>-im</i>	4	1	n/a	0.20
Disallows <i>-im</i>	23	n/a	0	0.00
Total	27	1	0	0.04

Notes. w/ = with. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Table 7.36: Distribution of -im w/ all mixed-language noun types, in Billy's speech

<i>-im</i> suffix	Correct tokens	Om.	Comm.	Prop. of errors
Applies <i>-im</i>	15	1	n/a	0.06
Total	15	1	n/a	0.06

Notes. w/ = with. NEC = Northern East Cree. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Tables 7.37 and 7.38 present Billy's NEC and mixed-language noun types that occur as a possessee with more than one token. For easy comparison with child-directed speech, an asterisk marks types that occur among the adult's most frequent NEC (Table 7.4) and only mixed-languages types (Table 7.5). As with Daisy's speech, Billy's possessee overlap quite a bit with the most frequency in adult input, especially in his most frequent types. In addition to the types in Tables 7.37 and 7.38, Billy produces 14 NEC and 10 English types with just one token each.

Table 7.37: Distribution of -im across all nouns requiring -im, in Billy's speech

Type	Gloss	Category	Adult-like tokens	Errors	Total
			+ <i>-im</i>	Om.	
brother	brother	eng	2	0	2
friend *	friend	eng	2	0	2
mom/my	mother	eng	2	0	2
pîpî *	baby	na	2	0	2
skidoo *	snowmobile	eng	2	0	2
sock	sock	eng	2	0	2
window	window	eng	2	0	2

Notes. na = animate noun. eng = English. + *-im* = tokens with adult-like application of the *-im* suffix. Om. = tokens with errors of omission of *-im*. * = type also appears in Tables 7.4–7.5.

Table 7.38: Distribution of *-im* across all nouns disallowing *-im*, in Billy’s speech

Type	Gloss	Category	Adult-like tokens		Errors	Total
			– <i>-im</i>	Comm.		
îch *	home	nid	13	0		13
kâwî *	mother	nad	8	0		8
shîm *	younger sibling	nad	8	0		8
uhtâwî *	father	nad	7	0		7
uhkum *	grandmother	nad	3	0		3
ashtutin	hat	ni	2	0		2
htiwikî *	ear	nid	2	0		2
shtikwânipîwî *	hair	nid	2	0		2
skut	nose	nid	2	0		2
stâs	older brother	nad	2	0		2
tihchî *	hand	nid	2	0		2
tun	mouth	nid	2	0		2
utâpânâskw	car, vehicle	na	2	0		2

Notes. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. – *-im* = tokens with adult-like non-application of the suffix. Comm. = tokens with errors of commission of *-im*. * = type also appears in Tables 7.4–7.5.

7.4.2. Productivity of *-im*

This section considers Billy’s usage of *-im* against criteria for productivity (§4.2.5.). Table 7.39 tabulates his production of relevant possessee tokens per recording session.

Table 7.3910: Billy’s possessee tokens and usage of *-im*, per recording session

Session	Child age	Adult-like tokens		Errors		Total
		+ <i>-im</i>	– <i>-im</i>	Om.	Comm.	
B3.02	4;05.04	1	2	0	0	3
B3.04	4;06.08	2	11	0	0	13
B3.06	4;07.27	0	4	0	0	4
B3.07	4;08.21	2	6	1	0	9
B3.09	4;10.08	2	4	0	0	6
B3.11	5;00.13	6	11	0	0	17
B3.13	5;02.12	1	3	0	0	4
B3.14	5;03.22	5	7	1	0	13
B3.15	5;05.00	2	6	0	0	8
B3.17	5;06.27	1	4	0	0	5
B3.18	5;10.06	4	7	0	0	11
Total		26	65	2	0	93

Notes. + *-im* = tokens with adult-like application of the *-im* suffix. – *-im* = tokens with adult-like non-application of the suffix. Om. = tokens with errors of omission of *-im*. Comm. = tokens with errors of commission of *-im*.

In his first recording session at age 4;05.04, Billy correctly does not apply *-im* to two NEC types: *shim* ‘younger sibling’ in *nishîmish* ‘my little sibling’ and *îch* ‘home’ in *wîchihwâhch* ‘their’ house’. He applies *-im* to one English type in (18).

- (18) σCĤ^t
 nidadîm
 ni-dad-îm
 1-father-POSS
 ‘my dad’ (Billy, 4;05.04, B3.02, 08:34)

In the next session at 4;06.08, Billy uses 11 total types as possessees: eight NEC types (11 total tokens) and two English types (two tokens). None of his NEC types require *-im*, and he correctly does not apply the suffix. He does use *-im* with both English types: *chimney* and *tree*.

At this age point, Billy has used *-im* in two consecutive sessions across 13 unique noun types, with no errors in his production. However, he has used only one noun type (*chimney*) in word forms contrasting with the possessive: bare stem *chimney* (two tokens) and with the locative suffix in *chimneyhch* (one token). He has not yet met the criteria for productive usage of *-im*.

In the next session at 4;07.27, Billy uses four NEC types correctly without the possessive suffix: *astis* ‘mitten’, *îch* ‘home’, *kâwî* ‘mother’, and *uhkum* ‘grandmother’. However, he still has no word forms that contrast with his possessive tokens.

At the age of 4;08.21, Billy satisfies the criteria for demonstrating productive usage of *-im*. He produces eight different NEC noun types and one English type (*mommy*) in possessives. He has one error with *-im* (§7.4.2.1), and so he uses the suffix correctly in more than 80 percent of obligatory contexts (8/9 tokens, 88.89 percent). In addition to *chimney*, he also has used three other noun types in word forms that contrast with their appearance in possessives: *dad*, *mom/mommy*, and *pîpî* ‘baby’.

His contrasting word forms with *dad* offer special insight into Billy’s understanding of *-im*. In (18) above, he marks *dad* with NEC inflection in *nidadîm*, but (19) demonstrates Billy’s awareness that an English-only possessive NP such as *my dad* does not employ NEC possessive morphology.

Daisy's speech, where she does not apply *-im* to two tokens of *room* (§7.3.2.1). This may reflect a (morpho)phonological constraint against /m/ + *-im* sequences, but I need to check this possibility with speakers. For now, I code these in the present study as errors but acknowledge that this interpretation may be proven incorrect later.

- (21) Ċ< Δ"Ċ° <Δ"σ σcc ʰʰǾΓ"ᵂₓ
 Tâpâ ihtâu âihch ni-classroomihch.
 Target: tâpâ ihtâu âi-hch ni-classroom-?im -ihch
 Actual: tâpâ ihtâu âi-hch ni-classroom-?*∅--ihch
 NEG he.is HES-LOC 1-classroom-?POSS-LOC
 'He's not in my classroom.' (Billy, 5;03.22, B3.14, 03:24)

7.4.3. Possible connections to adult input

This section provides a final evaluation of Billy's usage of *-im* against the three principles for the distribution of the suffix that children may extrapolate from child-directed speech. Again, the principles are restated below:

P-All: Apply *-im* to all nouns as possessives, except

P-Inalienable: Inalienably possessed NEC noun types; and

P-Final: NEC noun types with stem-final /m, n, kw/.

This section excludes Billy one clear error of omission and his other possible error. That leaves 27 NEC types (70 total tokens) and 15 English types in mixed-language possessives (21 total tokens) to evaluate.

7.4.3.1. P-Inalienable

Table 7.40 presents Billy's 27 NEC types by their (in)alienability and whether they require *-im*. As with the other two children, Billy's production adheres completely to P-Inalienable.

Table 7.40: Distribution of *-im* w/ NEC types in Billy's speech, by (in)alienability

(In)alienability category	+ <i>-im</i>	– <i>-im</i>
Alienable	4	7
Inalienable	0	16

Notes. w/ = with. NEC = Northern East Cree. + *-im* = the number of noun types that require *-im*. – *-im* = the number of noun types that disallow *-im*.

As with Daisy, frequency within adult input may facilitate Billy's extrapolation of P-Inalienable. Every one of his inalienable types also appears in child-directed speech, which includes many of the adult's most frequent possessives (Table 7.41). Billy uses no inalienable noun types that he does not encounter in input. The next section addresses his alienable NEC types.

Table 7.41: All inalienable NEC noun types, in Billy's speech and adult input

Type	Gloss	Billy tokens	Adult tokens
îch	home	13	50
kâwî	mother	8	67
shîm	younger sibling	8	36
uhtâwî	father	7	11
uhkum	grandmother	3	15
htiwikî	ear	2	11
shtikwânipîwî	hair	2	14
skut	nose	2	3
stâs	older brother	2	4
tihchî	hand	2	18
tun	mouth	2	6
îpit	tooth	1	17
mis	older sister	1	10
shchîshikw	eye	1	21
shihkun	toe	1	2
sis	(type of) uncle	1	4

Notes.

7.4.3.2. P-Final

Table 7.42 breaks down Billy's remaining 11 alienable NEC noun types by their stem-final phonology and whether they require *-im*. His production almost entirely adheres to P-Final, which just one exception: *astis* 'mitten' is alienable and ends in a segment other than /m, n, kw/ and yet does not take *-im*.

Table 7.42: Distribution of *-im* w/ NEC types in Billy's speech, by stem-final segment

Stem-final segment	+ <i>-im</i>	– <i>-im</i>
/m, n, kw/	0	6
Any other segment	4	1

Notes. w/ = with. + *-im* = the number of noun types that require *-im*. – *-im* = the number of noun types that disallow *-im*.

Once again, frequency within adult input may have helped Billy extrapolate this principle. Table 7.43 compares alienable types as possessees in the speech of both Billy and the adult. 9/11 of Billy's types (81.82 percent) also occur as possessees in input, including some of the adult's most frequent possessive types (Table 7.4). Furthermore, 7/11 types appear in contrasting possessive/non-possessive forms within child-directed speech (§7.1.1.2), which directly illustrate where *-im* is required. Billy's production of *ânishkiwishiu* 'great-grandparent' may testify to his abstraction and application of P-Final to a unique possessive not found in input, but his on-target production of *astis* 'mitten' constitutes an exception to the principle not found in input within the sample. This is discussed in §7.4.3.4.

Table 7.43: All alienable NEC noun types, in Billy's speech and adult input

Type	Gloss	Billy tokens	Adult tokens
ashtutin *	hat	2	8
pîpî *	baby	2	24
utâpânâskw *	car, vehicle	2	8
ânishkiwishiu	great-grandparent	1	0
astis	mitten	1	0
atim *	dog	1	3
chiskutimâchâsiu *	teacher	1	15
nipâwin *	bed	1	5
pâshchishikin	small gun	1	1
piyichîs *	pants	1	22
wîchâwâkin	friend	1	37

Notes. * = this type also occurs with contrasting non-possessive tokens in adult input.

7.4.3.3. P-All

Lastly, P-All represents the default, elsewhere condition for applying the possessive suffix to every noun type not subject to P-Inalienable or P-Final.

Billy uses five such NEC types: *ânishkiwishiu* 'great-grandparent', *astis* 'mitten', *chiskutimâchâsiu* 'teacher', *pîpî* 'baby', and *piyichîs* 'pants'. He applies *-im* to all but *astis*

‘mitten’, which is his lone exception to the principles. Only *ânishkiwishiu* does not occur as a possessee in input within the sample and so may serve as evidence that Billy has productively applied the principle to an NEC type not found in child-directed speech.

However, Billy’s usage of *-im* in mixed-language possessives provides additional evidence of his extrapolation and application of P-All. He produces five types that the adult also uses (*bicycle, car, friend, mom/mommy, skidoo*), but he also applies *-im* to ten types that do not occur within input: *brother, chimney, chip, dad/daddy, goalie stick, key, sled, sock, tree, and window*. These ten types help demonstrate that Billy has likely acquired the possessive suffix through abstracting and applying principles, rather than memorizing forms he encounters in child-directed speech.

Like Daisy, Billy seems to apply P-Inalienable and P-Final to NEC noun types only. For example, he puts *-im* on English types *brother, dad/daddy, and mom/mommy* but not to inalienable NEC noun types *shîm* ‘younger sibling’, *kâwî* ‘mother’, or *uhtâwî* ‘father’.

7.4.3.4. *Exceptions to the principles*

Billy’s only exception to the combination of P-Inalienable, P-Final, and P-All is the NEC noun type *astis* ‘mitten’. In (22) he produces the adult-like form that properly occurs without a possessive suffix. This example has one error of commission, but not with the possessive suffix: Billy applies the animate proximate plural suffix *-ich* when he should use the animate obviative suffix *-h* (Margaret, REH1-032, 07:07).

- (22) ▷ʼŋ^h
 ustish-h
 Target: u-stis-h
 Actual: u-stis-*ich-h
 3-mitten-3’-Q
 ‘his mittens?’ (Billy, 4;07.27, B3.06, 39:15)

As §7.1.8 explains, ‘mitten’ may occur in both possessive and non-possessive contexts in input, and therefore illustrate to Billy that it is an exception.

However, if not, it is harder to directly for how and when Billy may have learned this as an exception to *-im*. I have one suspicion: Perhaps Billy has classified *astis* ‘mitten’ as an inalienable noun, which should not take *-im*, and therefore his non-application of *-im* is a fortunate coincidence.

Just one piece of evidence supports this possibility: Although *astis* appears and is translated as ‘mitten’ with just three tokens in the entire dataset (one for Billy, two for the adult), the NEC dictionary (Junker et al., 2012) actually lists *astis* as the word for ‘sinew’. Perhaps Billy has placed ‘mitten/sinew’ into the same category as body part terms subject to P-Inalienable. That would explain why he does not use *-im* with *astis*, but this is just speculation.

Regardless, though, *astis* is the only exception to the three principles in Billy’s speech. This means that the vast majority of his production can be accounted for through adherence to the principles: 41/42 types (97.62 percent) and 90/91 tokens (98.90 percent).

7.4.4. Summary

Billy produces nearly 100 tokens where he navigates the proper application of *-im*. Very few of his NEC noun types and tokens require *-im*, but he applies *-im* to all but one of his English stems in mixed-language possessives. He evinces adult-like application of the suffix across a variety of noun types and demonstrates productive usage of *-im* by age 4;08.21. As with Daisy, Billy’s distribution of *-im* adheres almost entirely to the three principles (P-Alienable, P-Final, and P-All), which may be extrapolated from input, and his application of *-im* to English noun types in particular supports the prospect that Billy has acquired and analyzed the suffix as a productive element rather than memorized a small set of forms that require the suffix.

7.5. Conclusions

This chapter has explored the distribution of the possessive suffix *-im* in child-directed speech as well as the usage of *-im* within the speech of the three children. Child-directed speech contains hundreds of nouns in possessive constructions, yet *-im* appears in a minority of cases, so children face the challenge of deciphering where and when to apply the suffix. Adult input evinces three principles which account for almost all of the suffix’s distribution, and children may look to frequency and contrasting forms to acquire the exceptions to these principles.

All three children eventually demonstrate productive usage of the possessive suffix—Ani at age 4;03.07, Daisy at 3;09.22, and Billy at 4;08.21. Crucially, their usage of *-im* seems to adhere to the three principles from input as well. Their application of *-im* to English nouns in particular demonstrates that the children have acquired the suffix as a productive inflectional element marking possession. They do not just memorize a handful of noun types that require the suffix.

This also means that each child understands the categorical difference between NEC and English nouns. Ani, Daisy, and Billy each “know” which nouns are NEC and which are English. This acquisition of lexical differentiation is well established in the literature. For example, studies have shown that children differentiate lexical items between languages by around age 2;02 and even earlier (e.g., Genesee et al., 1995; Nicoladis, 1998; Quay, 1995; Vihman, 1985).

Finally, contrary to anecdotal reports (Collette, 2014, p. 291; Junker, 2003a, p. 11), these three children do not simply regularize *-im* and apply it to all NEC nouns or to all possessives in general with a blanket rule. They have analyzed principles behind the distribution of the suffix and apply it judiciously.

- (4) ʀʂʂʌɣ·ɿ°
 chishîshîpimiwâu
 chi-shîshîp-im-iwâu
 2-duck-POSS.2/3PL.PSR
 ‘your (PL) duck’
- (5) ▷ʂʂʌɣ·ɿ°^o
 ushîshîpimiwâuh
 u-shîshîp-im-iwâu-h
 3-duck-POSS-2/3PL.PSR-3’
 ‘their duck’

The Suffix 2 and Suffix 3 slots are considered together in one chapter, because marking for obviative or plural possessors is relatively infrequent in the input and even less frequent in child speech. Throughout the remainder of this chapter, the morphemes marking obviative or plural possessors are labeled together as **the possessor (PSR) suffix** for two reasons. First, each morpheme encodes particular grammatical features of the possessor. Second, existing linguistic descriptions of NEC imply that Suffix 2 and Suffix 3 morphemes cannot co-occur. Collette (2014), for example, gives no examples of possessees bearing obviative and plural suffixes simultaneously.

§8.1 surveys the distribution of the PSR suffix in child-directed speech within the dataset, and the suffix is then examined in the speech of Ani (§8.2), Daisy (§8.3), and Billy (§8.4).

8.1. The PSR suffix in adult input

This section first provides an overview of the adult’s usage of the PSR suffix morphemes across noun types (§8.1.1.1) and tokens (§8.1.1.2). It then describes her distribution of each morpheme encoding a: second- and third-person plural possessor (§8.1.2), first-person plural inclusive possessor (§8.1.3), first-person plural exclusive possessor (§8.1.4), and obviative possessor (§8.1.5). Because each suffix occurs infrequently within adult input, each of these subsections focuses primarily on providing examples of each morpheme in child-directed speech.

Throughout the entire dataset, the adult has only two mixed-language possessives that occur with a PSR suffix. Both tokens involve marking a third-person plural possessor on the same noun type: *car*, as in (6). The adult produces no other PSR suffix with an English loanword, and so mixed-language possessives in input are not discussed further in this chapter.

- (6) ᐃᐃᐃᐃ ᐃᐃ ᐃᐃᐃᐃᐃᐃ ᐃᐃᐃᐃᐃᐃᐃᐃ_x
 Mwâhch mâk chîyi-wâu chîcarimi-wâu.
 mwâhch mâk chîyi-wâu chi-car-im-iwâu
 like and 2-2/3PL.PSR 2-car-POSS-2/3PL.PSR
 ‘It looks like it’s your car.’ (Adult, 4;05.04, B3.02, 32:55)

8.1.1. The distribution of the PSR suffix

This section reviews the occurrence of PSR suffix morphemes within child-directed speech, which includes distribution among noun tokens (§8.1.1.1) and types (§8.1.1.2).

8.1.1.1. Distribution across noun tokens

This section describes the distribution of the PSR suffix throughout child-directed speech. To review, adult input within the dataset contains 686 total NEC noun tokens taking possessive inflection. Table 8.1 tallies the occurrence of each PSR suffix morpheme in the input, and for additional perspective, also lists the number of tokens that occur with no such possessor suffix.

Table 8.1: All NEC noun tokens with the PSR suffix, in adult input

PSR suffix	Tokens	Proportion of tokens
No PSR suffix	614	0.90
2/3PL	53	0.08
1PL.INCL	7	0.01
1PL.EXCL	6	0.01
OBV	6	0.01
Total	686	1.01

Notes. NEC = Northern East Cree. PSR = possessor. 2/3PL = the suffix marking a second-person plural or third-person plural possessor. 1PL.INCL = the suffix marking a first-person inclusive plural possessor. 1PL.EXCL = the suffix marking marks a first-person exclusive plural possessor. OBV = the suffix marking an obviative possessor. The column “Proportion of tokens” adds up to more than 1.00 because of complications rounding to two decimal places.

These numbers reveal a striking facet of child-directed speech in NEC: Morphemes marking obviative or plural possessors are relatively rare in adult input to children. Only 72/686 noun tokens bear some kind of PSR suffix, which represents just about one in ten possessives. Furthermore, in input the PSR suffix rarely marks anything other than a second- or third-person plural possessor. Children represented within the dataset receive very little exposure to morphemes encoding obviative or first-person plural possessors.

8.1.1.2. *Distribution across noun types*

Throughout the dataset, the adult uses 84 different NEC noun types as possessives (see Chapter 5), but she distributes the PSR suffix across only 21 different noun types (Table 8.2).

Table 8.2 uncovers another striking facet of child-directed speech in NEC. The vast majority of PSR suffix morphemes occur with just one noun type: *ich* 'home' alone carries 42/71 tokens (59.15 percent) of the PSR suffix. All noun types in Table 8.2 have at least one token with the PSR suffix also have at least one token without it, which provides the opportunity to contrast word forms. However, *ich* may play a uniquely salient role regarding the PSR suffix.

First, *ich* bears the lion's share of morphemes encoding a second- or third-person plural possessor: 34/53 tokens (64.15 percent). This type is also just one of two to occur with the first-person plural exclusive suffix as well. Aside from *ich* 'home', no other noun type occurs with more than three tokens of any PSR suffix, and just about every other noun type takes only one or two such morphemes in the entire sample. *ich* is the only noun type that occurs with each PSR suffix morpheme, and it also occurs with eight tokens of contrasting word forms without a PSR suffix.

In brief, *ich* 'home' may serve as a unique pathbreaker (cf. verbs in Ninio, 1999) for children: Not only is it one of the very most frequent nouns types in child-directed speech, but it also presents children with the most opportunities to identify the position, function, and morphological members of the Suffix 2 and Suffix 3 positions within the affixal template for NEC nouns. The following sections examine the adult's use of each PSR suffix morpheme, with particular reference to *ich*.

- (8) $\dot{\text{L}}\dot{\text{a}} \triangleright \text{N}^{\text{r}} \cdot \dot{\text{c}}^{\text{oi}} \triangleleft \cdot \dot{\text{c}}^{\text{or}} \dot{\text{b}} \triangleleft \wedge \text{r}^{\text{ic}} \dot{\text{x}}$
 Mânâ utihchîwâuh awânichî kê âpichihtâch.
 mânâ u-tihchî-wâu-h awâni-chî kêâpichihtâch
 DEM.REM 3-hand-2/3.PL.PSR-0p someone-3p that.they.are.using
 ‘It’s the one where the people are using their hands.’ (Adult, 5;02.12, B1.13, 05:27)

Because the noun type *îch* ‘home’ carries the bulk of these tokens, Table 8.3 breaks down the occurrence of each word form of *îch* that bears such marking. The form *chîchiwâhch* ‘at your (PL) house’ is by far the most frequent word form of *îch* to occur with the suffix *-(i)wâu*, so this may also play a role in signaling to children the presence and function of this PSR morpheme.

Table 8.3: All word forms of *îch* ‘home’ with the 2/3.PL.PSR morpheme, in adult input

Word form	Translation	Tokens	Proportion of tokens
<i>chîchiwâhch</i>	at your (PL) house	21	0.62
<i>wîchiwâhch</i>	at their house	7	0.21
<i>chîchiwâu</i>	your (PL) house	4	0.12
<i>wîchiwâu</i>	their house	2	0.06
Total		34	1.01

Notes. The column “Proportion of tokens” adds up to more than 1.00 because of complications rounding to two decimal places.

8.1.3. The 1PL.INCL suffix *-(i)niu*

The adult only uses the suffix *-(i)niu* seven times in the entire dataset, across five different noun types: *htiwikî* ‘ear’ (9), *îch* ‘home’ (10), *îwit* ‘bag’ (11), *spitun* ‘arm’ (12), and *tun* ‘mouth’ (13).

- (9) $\text{r}^{\text{ic}} \text{N} \Delta \dot{\text{p}} \sigma^{\text{oi}} \triangleleft \dot{\text{r}}^{\text{d}} \dot{\text{c}} \sim \text{x}$
 Chihtiwikîniuh pâyikw nîshu.
 chi-htiwikî-niu-h pâyikw nîshu
 2-ear-1PL.INCL.PSR -0p one two
 ‘Our ears, one, two.’ (Adult, 4;04.04, B1.11, 22:08)

- (10) $\dot{\text{L}}^{\circ} \cdot \langle \dot{\text{i}}^{\circ} \Delta \dot{\text{a}} \sigma \rangle \langle \dot{\text{i}} \dot{\text{r}} \sigma^{\circ} \rangle_x$
 Mâu wâsh ânâniû â chîchiniu.
 mâu wâsh ânâniû â ch-îch-iniu
 DEM.PXL EMPH ? Q 2-home-1PL.INCL.PSR
 ‘Let’s pretend this is our house, OK?’ (Adult, 3;09.22, B1.03, 36:07)

- (11) $\dot{\text{C}}^{\circ} \langle \dot{\text{i}}^{\circ} \dot{\text{r}} \Delta \cap \sigma^{\circ} \rangle_x$
 Tân an chîwitiniu.
 tân an ch-îwit-iniu
 where DEM.DIST 2-bag-1PL.INCL.PSR
 ‘Where is our bag?’ (Adult, 3;11.11, B1.04, 09:11)

- (12) $\dot{\text{L}} \triangleright \dot{\text{A}} \dot{\text{r}}^{\circ} \dot{\text{r}}^{\circ} \wedge \supset \sigma \sigma^{\circ} \rangle_x$
 Mâuhî mîn chispituniniuh.
 mâu-hî mîn ch-ispitun-iniu-h
 DEM.PXL-0p again 2-arm-1PL.INCL.PSR-0p
 ‘And here are our arms.’ (Adult, 4;04.04, B1.11, 22:35)

- (13) $\dot{\text{L}} \triangleright \dot{\text{A}} \dot{\text{r}}^{\circ} \dot{\text{r}} \supset \sigma \sigma^{\circ} \rangle_x$
 Mâuhî mîn chituniniuh.
 mâu-hî mîn chi-tun-iniu-h
 DEM.PXL-0p again 2-moth-1PL.INCL.PSR-0p
 ‘These too, our lips.’ (lit. ‘our mouths’) (Adult, 4;04.04, B1.11, 22:19)

8.1.4. The 1PL.EXCL suffix *-(i)nân*

The adult’s production of this suffix is even more infrequent. She applies it to just two types: five tokens of *îch* ‘home’ (14) and one token of *wîchâwâkin* ‘friend’ (15). There is an imbalance among her word forms as well, as four of her five tokens of *îch* are *nîchinâhch* ‘at our house’.

(14) ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ
 Mîshkuch nimi chikimisinâpiskihwitin nîchinâhch â.
 mîshkuch nimi chikimisinâpiskihwitin n-îch-inâ-hch â
 as.a.result NEG I.will.take.your.picture 1-home-1PL.EXCL.PSR -LOC Q
 ‘I won’t videotape you then at our place, OK?’ (Adult, 5;02.12, B3.13, 48:98)

(15) ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ
 Niwîchâwâkininân wâsh an (name) niki îtâu â.
 ni-wîchâwâkin-inân wâsh an (name) nikiîtâu â
 1-friend-1PL.EXCL.PSR EMPH DEM name I.will.say.to.her/him Q
 ““(Name) is our friend”, I will tell him, OK?” (Adult, 5;00.13, B3.11, 23:38)

8.1.5. The OBV suffix -(i)yi

Possesseees with obviative possessors are relatively rare in child-directed speech. The adult produces just five nouns types marked for an obviative possessor, with one token for each type: *îch* ‘home’ (16), *kâwî* ‘mother’ (17), *mîchîm* ‘food’ (18), *misinihîkin* ‘book’ (19), and *utâpânâskw* ‘car, vehicle’ (20).

(16) ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ ᑭᓂᑦ
 Îsh tân iyihutimâu aniyâ (name) Dorah wîchiyiu.
 îsh tân iyihutimâu ani-yâ (name)
 wonder what s/he.does.to.it DEM.DIST-0’ name

 Dora-h w-îch-iyiu
 name-3’ 3-home-OBV.PSR
 ‘I wonder what (name) did with Dora’s house?’ (Adult, 4;06.22, B1.14, 21:00)

(17) <ɨ́ɨ́ʰʰ> ɨ́bɨ́ɨ́ʰʰ_x
 Awâyih ukâwîyih.
 awâ-yih u-kâwî-yih
 who-3' 3-porcupine.quill-OBV.PSR-3'
 'Whose quills are they?' (Adult, 4;06.22, B1.14, 04:39)

(18) ɨ́ ɨ́ʰʰ<ɨ́ <ɨ́ɨ́ʰʰ <ɨ́ɨ́ ɨ́ɨ́<ɨ́ ɨ́ʰʰʰʰ_x
 Chîh michihâu aniyâyih aniyâ kiyipwâ umîchimiui.
 chîhmichihâu ani-yâyih ani-yâ
 s/he_i.made.her/him_j.dirty DEM.DIST-3' DEM.DIST-0'

 kiyipwâ u-mîchim-iyiu
 of.course 3-food.OBV.PSR
 'She_i made her_j dirty with her_j food.' (Adult, 3;06.23, A1.30, 01:11)

(19) ɨ́ʰʰ<ɨ́ ɨ́ɨ́ʰʰɨ́ɨ́ʰʰ
 ustâs-h umisinihîkiniui
 u-stâs-h u-misinihîkin-iyiu
 3-older.brother-3' 3-book-OBV.PSR
 'her/his brother's book' (Adult, 2;04.22, A1.08, 36:30)

(20) ɨ́bɨ́ɨ́ ɨ́ɨ́<ɨ́ ɨ́ɨ́ʰʰ
 ukâwîh utâpânâskuyih
 u-kâwî-h utâpânâskw-iyiu-h
 3-mother-3' vehicle-OBV.PSR-3'
 'her/his mom's vehicle' (Adult, 4;06.08, B3.04, 03:03)

8.1.6. Summary

The adult uses marking for obviative or plural possessors rather infrequently in child-directed speech. Just about one in ten possesses occurs with a PSR suffix morpheme, and the majority of this marking consist of the suffix for a second- or third-person plural possessor. Furthermore, the

adult distributes the PSR suffix over just a subset of noun types. The noun type *îch* ‘home’ bears the lion’s share of PSR suffix tokens, and thus may play a special role in providing evidence for children to identify and extrapolate the PSR suffix morphemes.

8.2. The PSR suffix in Ani’s speech

This section briefly examines Ani’s usage of the PSR suffix throughout her sampled recordings. Overall Ani’s possessives with NEC possessive inflection comprise 10 NEC noun types (16 total tokens) and eight English types (13 total tokens).

Throughout her sampled data, Ani produces only two constructions involving the PSR suffix, and she only uses the first-person plural exclusive suffix *-(i)nân*. Both utterances occur at age 4;03.07 within a few seconds of each other. In (21) Ani tells her interlocutor that someone or something is at the house that she and her interlocutor share. In (22) Ani clarifies her meaning and adds an overt possessor.

(21) ṛṛσ▷^u
 chîchiniuhch
 Target: ch-îch-iniu-hch
 2-home-1PL.INCL.PSR-LOC
 Actual: ch-îch-**inâ*-hch
 2-home-**1PL.EXCL*.PSR-LOC
 ‘at our (INCL) home’ (Ani, 4;03.07, A1.37, 44:49)

(22) ṛḷ̣σ° ṛṛσ▷^u
 chîyâniu chîchiniuhch
 Target: chîyâniu chîchiniuhch
 chîy-âniu ch-îch-iniu-hch
 2-1PL.INCL 2-home-1PL.INCL.PSR-LOC
 Actual: chîyâniu chîchinâhch
 chîy-âniu ch-îch-**inâ*-hch
 2-1PL.INCL 2-home-**1PL.EXCL*.PSR-LOC
 ‘at our (INCL) home’ (Ani, 4;03.07, A1.37, 44:52)

In both examples, Ani makes an error of commission: She uses the second-person possessor prefix with the first-person plural exclusive possessor suffix, where a literal interpretation yields the paradoxical meaning ‘at your/our house (but not yours)’. In example (22) this paradox is very clear, because Ani uses the inclusive pronoun as the overt possessor ‘we (including you)’ but then the exclusive suffix ‘we (but not you)’. The adult-like way to say ‘our house’ with Ani’s intended meaning is with the second-person prefix and the first-person plural inclusive suffix (23). The error in (21–22) may constitute a kind of pronoun reversal (e.g., Tomasello, 2003, pp. 201–202).

- (23) ḥḥσ°
 chîchiniu
 ch-îch-iniu
 2-home-1PL.INCL.PSR
 ‘our (INCL) house’ (Adult, 3;09.22, B1.03, 36:02)

Ani’s error likely lies with patterns in adult input. As §8.1.4 shows, the adult’s most common word form with the first-person plural exclusive suffix *-(i)nân* is *nîchinâhch* ‘at our house’, as in (24). This is the kind of word form children hear from any adult who does not live with them, which explains why the adult uses the exclusive form in the corpus more commonly than the inclusive form.

- (24) ḥḥâḥ°
 nîchinâhch
 n-îch-inâ-hch
 1-home-1PL.EXCL.PSR –LOC
 ‘at our (EXCL) house’

It seems Ani has learned *-îchinâhch* as a chunk for ‘at our house’, and has not yet properly analyzed clusivity. In (21) and (22) she applies the correct possessor prefix in order to include her interlocutor, but she does not use the correct possessor suffix.

Because (21) and (22) are the only occurrences of the PSR suffix in Ani's speech, nothing more can be said about her distribution and productive usage of the suffix. The samples for the other two children, however, reveal more about how children use the PSR suffix.

8.3. The PSR suffix in Daisy's speech

This section explores Daisy's acquisition of the various PSR suffix morphemes. §8.3.1 reviews characteristics of her overall production, and §8.3.2 considers whether she demonstrates productive usage with the PSR suffix. This includes marking for second- and third-person plural (§8.3.2.1), first-person plural inclusive (§8.3.2.2), and first-person plural exclusive (§8.3.2.3), and obviative possessors (§8.3.2.5). §8.3.4 explores possible connections to patterns in child-directed speech, and §8.5 summarizes findings.

8.3.1. The distribution of the PSR suffix

This section reviews Daisy's usage of PSR suffix morphemes across noun tokens (§8.3.1.1) and types (§8.3.1.2).

Throughout her sampled data, Daisy has just four tokens where she applies the PSR suffix to English nouns in mixed-language possessives: *ucakeimiyuh* 'her/his (OBV) cake', *nibusiminân* 'our (EXCL) bus', *niroominâhch* 'in our (EXCL) room', *chiphoneimiu* 'our (INCL) phone'. Because Daisy does not have many tokens with the PSR suffix, her NEC and mixed-language possessives are just considered together.

8.3.1.1. Distribution across noun tokens

This section lays out Daisy's usage of the PSR suffix across her tokens of nouns as possessives. She produces 243 total such tokens: 220 NEC and 23 mixed-language. Table 8.4 lays out her production of each PSR suffix morpheme, including the number of tokens without a suffix.

Table 8.4: All noun tokens w/ the PSR suffix, in Daisy’s speech

PSR suffix	Adult-like tokens	Errors of omission	Errors of commission
No PSR suffix	200	n/a	n/a
2/3PL	15	0	1
1PL.INCL	2	0	0
1PL.EXCL	21	0	0
OBV	1	1	0
2/3PL + OBV	2	0	0
Total	241	1	1

Notes. w/ = with. NEC = Northern East Cree. w/ = with. PSR = possessor. w/o = without a PSR suffix. 2/3PL = the suffix marking a second-person plural or third-person plural possessor. 1PL.INCL = the suffix marking a first-person inclusive plural possessor. 1PL.EXCL = the suffix marking marks a first-person exclusive plural possessor. OBV = the suffix marking an obviative possessor.

These numbers show that, as in child-directed speech, the vast majority of Daisy’s adult-like noun tokens (200/241, 82.99 percent) do not occur with a PSR suffix. Her speech has two distinct differences from adult input, though. Most of Daisy’s PSR suffix tokens consist of marking first-person exclusive possessors (21 tokens) rather than second- and third-person plural possessors (15 tokens). This difference likely results from the characteristics of adult-child interactions, where Daisy tends to talk more about her own belongings. Additionally, Daisy has two possessee tokens where she applies two possessor suffixes simultaneously, which does not occur in input. These are discussed in §8.3.2.5.

8.3.1.2. *Distribution across noun types*

Throughout her sampled data, Daisy’s possessee span 60 total noun types: 46 NEC types and 14 English types. Table 8.5 tallies Daisy’s distribution of the PSR suffix across noun types.

Like the adult, Daisy distributes her PSR suffix among a small number of her overall noun types as possessee: just 9/60 types (15.0 percent). In another striking similarity to adult input, for Daisy the type *îch* ‘home’ does the lion’s share of bearing PSR suffix morphemes. This single type carries 33/43 of her PSR suffix tokens (76.74 percent), an even greater majority than found in input. Daisy’s other eight noun types occur with two or fewer tokens marking obviative or plural possessors. The following section more closely addresses Daisy’s usage of each PSR suffix morpheme.

Table 8.5: All noun types w/ the PSR suffix, in Daisy’s speech input

Type	Gloss	Tokens					Errors	Total
		w/o	2/3PL	1PL.INCL	1PL.EXCL	OBV		
kâwî	mother	44	1	0	0	0	0	45
îch	home	4	13	0	17	0	2	37
uhtâwî	father	11	1	1	0	0	0	13
uhkum	grandmother	7	0	0	0	0	0	8
nipâwin	bed	3	0	0	2	0	0	5
phone	phone	2	0	1	0	0	0	3
room	room	1	0	0	1	0	0	2
bus	bus	0	0	0	1	0	0	1
cake	cake	0	0	0	0	1	0	1
Total		72	15	2	21	1	2	115

Notes. w/ = with. NEC = Northern East Cree. w/ = with. PSR = possessor. w/o = without a PSR suffix. 2/3PL = the suffix marking a second-person plural or third-person plural possessor. 1PL.INCL = the suffix marking a first-person inclusive plural possessor. 1PL.EXCL = the suffix marking marks a first-person exclusive plural possessor. OBV = the suffix marking an obviative possessor. Double = OBV suffix + 2/3PL suffix. Errors = tokens with errors of omission or commission.

8.3.2 Productivity of the PSR suffix

This section explores Daisy’s usage of each PSR suffix morpheme over time and evaluates this in light of the criteria for productivity adopted by the present study (§4.2.5.). For an overall look at her production, Table 8.6 breaks down her PSR suffix tokens per recording session. Daisy produces an obligatory context for a PSR suffix in 11 out of her 14 recording sessions.

Table 8.6: Daisy’s PSR suffix production in obligatory contexts, per recording session

Session	Child age	Tokens with PSR suffix					Errors	Total
		2/3PL	1PL.INCL	1PL.EXCL	OBV	Double		
B1.03	3;09.22	2	1	1	0	0	0	4
B1.04	3;11.11	0	1	4	1	1	0	7
B1.05	4;00.00	1	0	2	0	0	0	3
B1.08	4;02.06	2	0	1	0	0	0	3
B1.11	4;04.04	1	0	0	0	0	0	1
B1.14	4;06.02	3	0	3	0	0	0	6
B1.17	4;07.28	1	0	3	0	0	0	4
B1.20	4;10.03	0	0	2	0	0	1	3
B1.24	5;00.20	3	0	1	0	0	0	4
B1.30	5;07.03	1	0	4	0	1	1	7
B1.31	5;10.02	1	0	0	0	0	0	1
Total		15	2	21	1	2	2	43

Notes. PSR = possessor. 2/3PL = the suffix *-(i)wâu*, which marks a second-person plural or third-person plural possessor. 1PL.INCL = the suffix *-(i)niu*, which marks a first-person inclusive plural possessor. 1PL.EXCL = the suffix *-(i)nân*, which marks a first-person exclusive plural possessor. OBV = the suffix *-(i)yi*, which marks an obviative possessor. Double = OBV suffix + 2/3PL suffix

8.3.2.1. The 2/3.PL suffix *-(i)wâu*

Daisy does not use the suffix at age 3;08.10 or 3;09.01, and her first usage of this suffix comes during her third recording session at 3;09.22 (25).

- (25) $\Delta\Gamma\cdot\Delta^i\mu \leftarrow \Delta^a \acute{b}\Delta^{\prime}\acute{C}^c \sigma\acute{L}_x$
Wîchîwâhch an kâihtât nimâ.
w-îch-îwâ-hch an kâihtât nimâ
3-home-2/3PL.PSRLOC DEM.DIST that.it.is NEG
‘That one is at their house, right?’ (Daisy, 3;09.22, B1.03, 9:32)

Her next application comes at age 4;00;00 with another token of *wîchîwâhch* ‘at their house’. In the next consecutive recording session as at 4;02;06, Daisy has another token of *wîchîwâhch* but also produces the suffix with a second noun type *kâwî* ‘mother’ in (26).

- (26) ▷bΔ◁◁^{oii}
 ukâwîwâuh
 u-kâwî-wâu-h
 3-mother-2/3.PL.PSR-3'
 'their mother(s)' (Daisy, 4;02.06, B1.08, 10:43)

Daisy demonstrates productive usage of the suffix *-(i)wâu* at age 4;00;00. By this age point, she has produced no errors in using the suffix, has applied it to two different nouns types across two consecutive recording sessions, and she has used each noun type in contrasting word forms without the suffix:

- type *kâwî* 'mother' in *nikâwî* 'my mother' (14 tokens), *chikâwî* 'your mother' (two tokens), and *ukâwîh* 'her/his mother' (one token)
- type *îch* 'home' in *nîchinâhch* 'at our (EXCL) house' (six tokens)

8.3.2.2. *The 1PL.INCL suffix -(i)niu*

Daisy uses only two tokens of this suffix, in (27) at age 3;09.22 and in (28) at 3;11.11. In both examples, Daisy and the adult are playing out pretend scenarios where they are related, and so the inclusive suffix is warranted.

- (27) ▷∩ⁱⁱ PΔ◁◁ⁱ ∩◁◁▷▷ΔΓ^o ◁◁_x
 Utih kiyipwâ chiphoneimiu â.
 u-tih kiyipwâ chi-phone-im-iu â
 DEM.PXL-LOC of.course 2-phone-POSS-1PL.INCL.PSR Q
 'This is where our phone is, OK?' (Daisy, 3;09.22, B1.03, 29:21)

- (28) Jⁱⁱ C̣ⁱ Δσ^o σL_x
 Chuhtâwîniu nimâ.
 ch-uhâtâwî-niu nimâ
 2-father-1PL.INCL.PSR NEG
 'Our father, eh?' (Daisy, 3;11.11, B1.04, 48:52)

Despite this dearth of tokens, Daisy satisfies the criteria for demonstrating productive usage of the suffix *-(i)niu* by age 3;11.11. She uses the suffix in two consecutive sessions with two different noun types, with no errors, and she produces contrasting word forms of each noun type without the suffix:

- stem *ûhtâwî* ‘father’ in *nûhtâwî* ‘my father’
- bare stem *phone* (five tokens), with the possessor prefix and possessive suffix in *chiphoneim* ‘your phone’ (one token), with the obviative suffix in *phoneiyiu* (one token), and with the English plural in *phones* (one token)

8.3.2.3. *The 1PL.EXCL suffix -(i)nân*

Daisy first uses this suffix in her third recording session at age 3;09.22 with (29).

- (29) <σC" σf.â"™
 anitâh nîchinâhch
 ani-tâh n-îch-inâ-hch
 DEM.DIST-LOC 1-home-1PL.EXCL.PSR-LOC
 ‘at our house’ (Daisy, 3;09.22, B1.03, 26:00)

In her next recording session at 3;11.11, she has three more tokens of *nîchinâhch*, and she applies the suffix to second noun type (*room*) in (30). At this age point, Daisy nearly meets the four criteria for productive usage of the suffix *-(i)nân*. She has applied it to two different noun types across two consecutive recording sessions, with no errors. However, she does not yet have any contrasting word forms with *room*.

- (30) <Δ à °C̣·<̣"̣"̣ Δ̣·C̣·Δ̣^h σ̣P̣Γ̣à^h <·<σ̣f̣_x
 Âi nâstâpwâh chîhîtwâwich niroominâhch awânichî.
 âi nâstâpwâh chîhîtwâwich ni-room-inâ-hch
 HES very.much they.were.talking 1-room-1PL.EXCL.PSR-LOC

awâni-chî

someone-3p

‘People were talking loud in our room.’ (Daisy, 3;11.11, B1.04, 36:20)

Daisy does not apply the suffix to a new noun type until age 5;07.03: She has one token of *nibusiminân* ‘our (EXCL) bus’. At this point, she has also produced contrasting word forms of both *îch* ‘home’ and *room* without the suffix. This means Daisy has demonstrated productive usage of *-(i)nân* by age 5;07.03.

8.3.2.4. *The OBV suffix -(i)yi*

Daisy’s sampled data does not provide enough evidence to demonstrate that she acquires productive usage of the morpheme encoding an obviative possessor. She has only two obligatory contexts requiring the suffix, and she produces one adult-like token at age 3;11.11 (31) and one error of omission at 4;10.03 (32).

- (31) <σ̣f̣^h >Ḷ9̣Δ̣Γ̣^h°^h
 aniyâh ucakeimiyuh
 ani-yâh u-cake-im-iyiu-h
 DEM.DIST-DIST-3’ 3-cake-POSS.OBV.PSR-3’
 ‘her (OBV) cake’ (Daisy, 3;11.11, B1.04, 14:42)

(32) < < j̇ʳ°ʱ ɔ̃°ʱ ɔ̃°ʱ ɔ̃°ʱ

Awâyiuh ûhkumiyiuh

Target: awâ-yiuh ûhkum-iyiu-h

Actual: awâ-yiuh ûhkum-*∅-h
who-3' grandmother-OBV.PSR-3'

'Whose (OBV) grandma?' (Daisy, 4;10.03, B1.20, 04:52)

8.3.2.5. *Marking an obviative and plural possessor*

Finally, Daisy's speech contains two tokens of *îch* 'home' where she applies an obviative possessor suffix *-(i)yiuh* **and** plural possessor suffix *-(i)wâu* to the same noun (33, 34).

(33) Ċ̣σĊ̣° ɔ̃°ʱ ɔ̃°ʱ ɔ̃°ʱ ɔ̃°ʱ (name)Δ°x

Tânitâh û wîchiwâyhch âihch (name)ish.

tâni-tâh û w-îch-iwâ-yi-hch

where-LOC DEM.PXL 3-home-2/3.PL.PSR-OBV.PSR-LOC

âi-hch (name)-ish

HES-LOC name-DIM

'Over at their (OBV) house, uh, little (name)'s' (Daisy, 3;11.11, B1.04, 33:09)

(34) < j̇ʳ°ʱ ɔ̃°ʱ ɔ̃°ʱ ɔ̃°ʱ ɔ̃°ʱ ɔ̃°ʱ

Âih wîchiwâyhch anitâh awâyiuh.

âi-h w-îch-iwâ-yi-hch

HES-3' 3-home-2/3.PL.PSR-OBV.PSR-LOC

ani-tâh awâ-yiuh

DEM.DIST-LOC someone-3'

'somewhere at somebody's place' (Daisy, 5;07.03, B1.30, 10:09)

Although such double-marking does not occur in child-directed speech within the dataset, these two tokens are not considered here as errors for two reasons. First, no existing linguistic

Table 8.7: All word forms of *îch* ‘home’, in Daisy’s speech

Word form	Translation	Tokens	Proportion of tokens
<i>nîchinâhch</i>	at our (EXCL) house	15	0.41
<i>wîchiwâhch</i>	at their house	13	0.35
<i>wîch</i>	her/his house	3	0.08
<i>nîchinân</i>	our (EXCL) house	2	0.05
<i>wîchiwâyhch</i>	at their (OBV) house	2	0.05
<i>chîchiwâhch</i>	at your (PL) house	1	0.03
<i>wîchiwâu</i>	their house	1	0.03
Total		37	1.00

Notes.

Daisy’s production does indeed overlap with some of the most frequent occurrences of PSR suffix morphemes in adult input. The child’s most frequent word form of *îch* ‘home’ is *nîchinâhch* ‘at our (EXCL) house’, which is also the most frequent form to occur with the first-person plural exclusive suffix in child-directed speech (§8.1.4). Daisy’s next most frequent word form is *wîchiwâhch*, which also represents the second-most frequent form taking the second- and third-person plural suffix in input (Table 8.3). However, the adult’s word form that most commonly occurs with that suffix is *chîchiwâhch* ‘at your (PL) house’, which occurs only once in Daisy’s speech, but this disparity may reflect the dynamics of adult-child interactions. The paucity of relevant data within the corpus, though, makes it difficult to draw definitive conclusions.

8.3.5. Summary

Daisy uses marking for obviative or plural possessors a bit more frequently than in adult input, and she also uses the first-person plural exclusive suffix more often than the second- or third-person plural possessor suffix. Nonetheless, the child’s usage bears important similarities to patterns in child-directed speech. Daisy distributes the PSR suffix among a small number of noun types, and the noun type *îch* ‘home’ plays a special role in her production. In Daisy’s speech, *îch* carries an even larger proportion of PSR suffix tokens, and her two most common word forms of *îch* are also among the word forms that most frequently take a PSR suffix in child-directed speech.

8.4. The PSR suffix in Billy’s speech

This section addresses Billy’s usage of the PSR suffix, including his distribution of morphemes across noun types and tokens (§8.4.1) as well as his application of each suffix morpheme over time (§8.4.2). §8.4.3 briefly considers how Billy’s usage may relate to patterns in adult input, and §8.4.4 concludes by summarizing findings.

8.4.1. The distribution of the PSR suffix

This section describes how Billy applies the PSR suffix to his noun tokens (§8.4.1.1) and types (§8.4.1.2). Similar to Daisy, Billy has only five tokens with a PSR suffix applied to an English noun type—*ucarimiwâuh* ‘their car’, *usledimiwâuh* ‘their sled’, *utreeimiwâu* ‘their tree’, and *niwindowminân* ‘our (EXCL) window’—and so the remainder of this chapter considers all of his NEC and mixed-language possessives together.

8.4.1.1. Distribution across noun tokens

Billy produces a total of 93 noun tokens as possessives taking NEC inflection: 71 NEC-only tokens and 22 mixed-language tokens with an English stem. Table 8.8 calculates his tokens of each PSR suffix morpheme and includes his possessives without such possessor marking. Billy has no errors in his usage of the PSR suffix in obligatory contexts.

Table 8.8: All noun tokens w/ the PSR suffix, in Billy’s speech

PSR suffix	Tokens	Proportion of tokens
No PSR suffix	76	0.81
2/3PL	7	0.08
1PL.INCL	0	0.00
1PL.EXCL	8	0.09
OBV	1	0.01
2/3PL + OBV	1	0.01
Total	93	1.00

Notes. w/ = with. NEC = Northern East Cree. PSR = possessor. 2/3PL = the suffix *-(i)wâu*, which marks a second-person plural or third-person plural possessor. 1PL.INCL = the suffix *-(i)niu*, which marks a first-person inclusive plural possessor. 1PL.EXCL = the suffix *-(i)nân*, which marks a first-person exclusive plural possessor. OBV = the suffix *-(i)yu*, which marks an obviative possessor.

As with the adult and Daisy, the vast majority of Billy’s possessive tokens occur without a PSR suffix. In fact, his proportion of tokens without a PSR suffix (81.72 percent) is very similar

to Daisy’s (200/241, 82.99 percent) (§8.3.1.1). In another similarity to Daisy, Billy’s most frequent PSR suffix morpheme is the first-person plural exclusive suffix *-(i)nân*, followed by the second- and third-person plural suffix *-(i)wâu*—although Billy has fewer tokens of each morpheme. He also produces one possessee token bearing two possessor suffixes (§8.4.2.5).

8.4.1.2. Distribution across noun types

Billy’s possessee throughout his entire sample involve 28 NEC noun types and 16 English types. Table 8.9 tallies his PSR suffix distribution across these types.

Table 8.9: All noun types w/ the PSR suffix, in Billy’s speech input

Type	Gloss	Tokens with PSR suffix						Total
		w/o	2/3PL	1PL.INCL	1PL.EXCL	OBV	Double	
îch	home	4	4	0	4	0	1	13
kâwî	mother	7	0	0	1	0	0	8
window	window	0	0	0	2	0	0	2
atim	dog	0	0	0	1	0	0	1
car	car	0	1	0	0	0	0	1
chûchû	bottle	0	0	0	0	1	0	1
sled	sled	0	1	0	0	0	0	1
tree	tree	0	1	0	0	0	0	1
Total		11	7	0	8	1	1	28

Notes. w/ = with. NEC = Northern East Cree. w/ = with. PSR = possessor. w/o = without a PSR suffix. 2/3PL = the suffix marking a second-person plural or third-person plural possessor. 1PL.INCL = the suffix marking a first-person inclusive plural possessor. 1PL.EXCL = the suffix marking marks a first-person exclusive plural possessor. OBV = the suffix marking an obviative possessor. Double = OBV suffix + 2/3PL suffix.

Billy’s usage of the PSR suffix across noun types bears some noteworthy similarities to patterns in both child-directed speech and Daisy’s production. Billy uses a PSR suffix on just a relatively small number of noun types—his production involves eight types, and Daisy spans nine (§8.3.1.2.). Once again, the noun type *îch* ‘home’ does the heavy lifting and carries the bulk of PSR suffix tokens, with other types occurring with two or fewer tokens.

- (38) < < i ̇ > ɿ" ɗ ɿ ɿ ɿ < i ̇ " x
 Awân ûyâh ucarimiwâuh.
 awân û-yâh u-car-im-iwâu-h
 who DEM.PXL-3' 3-car-POSS-2/3PL.PSR-3'
 'Whose car is this?' (Billy, 5;02.12, B3.13, 16:55)

At 5;02.12 he has met the criteria for productive usage of *-(i)wâu*. He has applied the suffix in two consecutive sessions to more than two different noun types, without errors, and he has used the following types in contrasting word forms without the suffix:

- bare stem *car* (one token)
- plural form *trees* (one token)
- inflected forms *nîchinân* 'our (EXCL) house' (one token) and *nîchinâhch* 'at our (EXCL) house' (two tokens)

8.4.2.2. *The 1PL.INCL suffix -(i)niu*

Billy has no tokens of this suffix, which occurs just twice in Daisy's speech.

8.4.2.3. *The 1PL.EXCL suffix -(i)nân*

Billy first employs this suffix at age 4;08.21 with one token in (39), and he in the next recording session at 4;10.08 applies it to two tokens of *îch* 'home' as in (40). He does not yet have contrasting forms of *atim* 'dog', so he cannot yet meet the criteria for productivity. His next usage of the suffix comes at 5;00.13, where he applies it to three different noun types: *îch* 'home', *kâwî* 'mother', and English *window* (41).

- (39) σ Ć Γ ã ̇
 nitâminân
 ni-tâm-inân
 1-dog-1PL.EXCL.PSR
 'our (EXCL) dog' (Billy, 4;08.21, B3.07, 00:15)

(40) ᵈᵈᵈᵈ ᵈᵈᵈ^ᵈ
 nîchinâhch
 n-îch-inâ-hch
 1-home-1PL.EXCL.PSR-LOC
 ‘our (EXCL) house’ (Billy, 4;10.08, B3.09, 26:02)

(41) ᵈᵈᵈᵈ ᵈᵈᵈᵈ ᵈᵈᵈᵈᵈᵈᵈᵈ
 Mishkiwâu niwindowminân.
 mishkiwâu ni-window-m-inân
 it.is.hard 1-window-POSS-1PL.EXCL.PSR
 ‘Our window is very hard.’ (Billy, 5;00.13, B3.11, 18:51)

At the age point of 5;00.13, Billy satisfies the criteria for demonstrating productive usage of the suffix -(i)nân. He applied it to two different noun types in two consecutive sessions, and he has used it across four total types, all without errors. By this age, he also produces the following contrasting word forms for three types:

- *kâwî* ‘mother’ in *nikâwî* ‘my mother’ (three tokens) and *ukâwîh* ‘her/his mother’ (one token)
- *îch* ‘home’ in *wîchîwâu* ‘their house’ (one token) and *wîchîwâhch* ‘at their house’ (three tokens)
- *window* with the locative suffix in *windowhch*

8.4.2.4. *The OBV suffix -(i)yiû*

Billy has just one token where he uses the obviative possessor suffix: In (42) *pîpî* ‘baby’ is obviative because it has a third-person possessor, and Billy correctly applies the suffix to the possessee *chûchû* ‘bottle’.

- (42) ▷JJʰʰ° ▷ΛΛΓsm
 uchûchûmyiu upîpîmish-h
 Target: u-chûchû-m-yiu u-pîpî-m-ish-h
 Actual: u-chûchû-*∅-yiu u-pîpî-m-ish-h
 3-bottle-POSS-OBV.PSR 3-baby-DIM-3'
 ‘her bottle ... her little baby’s (bottle)’ (Billy, 4;08.21, B3.07, 02:10)

8.4.2.5. *Marking an obviative and plural possessor*

Billy produces one possessee where he applies the possessor suffix *-(i)yi* and plural possessor suffix *-(i)wâu* together: In (43) Billy puts both suffixes with *îch* ‘home’. Again, this pattern does not occur in adult input, but this is exactly the same word form Daisy produces in her two such double-marking constructions (33, 34).

- (43) (name) ·ΔΓ·◁ᵀ^{lu}
 (name) wîchiwâyhch
 (name) w-îch-iwâ-yi-hch
 name 3-home-2/3.PL.PSR-OBV.PSR-LOC
 ‘at (name)’s house’ (Billy, 5;10.06, B3.18, 14:03)

8.4.3. *Possible connections to adult input*

In §8.1.1.2 I propose that *îch* ‘home’ may serve a special pathbreaking role for helping children acquire the PSR suffix. Table 8.9 shows that Billy does use the PSR suffix with *îch* far more often than with any other noun type, and Table 8.11 counts Billy’s word forms of *îch* throughout his sampled data.

As with Daisy (Table 8.7), Billy’s two most frequent word forms are *nîchinâhch* ‘at our (EXCL) house’ and *wîchiwâhch* ‘at their house’. The former represents the most frequent form to occur with the first-person plural exclusive suffix in child-directed speech (§8.1.4), and the latter is the second most frequent word form with *-(i)wâu* in input (Table 8.3).

Table 8.11: All word forms of *îch* ‘home’, in Billy’s speech

Word form	Translation	Tokens	Proportion of tokens
nîchinâhch	at our (EXCL) house	5	0.38
wîchiwâhch	at their house	3	0.23
chîchiwâhch	at your (PL) house	1	0.08
nîchinân	our (EXCL) house	1	0.08
wîch	her/his house	1	0.08
wîchiwâyhch	at their (OBV) house	1	0.08
wîchiwâu	their house	1	0.08
Total		13	1.01

Notes. The column “Proportion of tokens” adds up to more than 1.00 because of complications rounding to two decimal places.

8.4.4. Summary

Billy uses the PSR suffix less frequently than Daisy or the adult, but his production bears close similarities to aspects of child-directed speech and Daisy’s speech. Like both other speakers, he applies the PSR suffix to a small number of noun types, and the type *îch* ‘home’ occupies the most prominent place in his usage. For Billy *îch* carries the lion’s share of PSR suffix tokens, and his two most frequent word forms are the same as Daisy’s. He also produces just one token with two PSR suffix morphemes, and this is the same word form that Daisy uses as well.

8.5. Conclusions

All speakers represented in the present study infrequently employ marking for obviative or plural possessors, and they tend to apply these morphemes to a small subset of the noun types that they use as possessives. Each child demonstrates different levels of productive usage with the PSR suffix, but the noun type *îch* ‘home’ likely serves as a pathbreaker for children to identify and extrapolate the various PSR suffix morphemes. This noun type is by far the most frequent type bearing a PSR suffix in child-directed speech and in child production as well.

Chapter 9: The Final suffix position

This chapter analyzes production in the input and for all three children relevant to the Suffix 4 position. As Chapter 2 details, the Suffix 4 position is the final and most complicated affixal position within the inflectional template for NEC nouns. This affixal position involves multiple morphemes that each index interacting grammatical categories of animacy, number, and obviation—as well as a single locative morpheme. For a brief review:

- Animate and inanimate nouns that are proximate and singular require no Suffix 4 morpheme.
- The morpheme *-ich* encodes a noun that is animate, proximate, and plural (often signified as **3p** in Algonquian literature).
- *-h* marks a noun that is inanimate and plural (**0p**).
- *-h* also marks a noun that is animate and obviative (**3'**).
- *-iyiu* encodes a noun that is inanimate, obviative, and singular (**0'**).
- *-ihch* encodes a locative (**loc**) meaning (e.g., 'in' or 'on').

Throughout the remainder of this chapter, these morphemes that occur in the Suffix 4 position are labeled together as the **Final suffix**, because these morphemes are in complementary distribution, and a given noun can take just one such morpheme.

This chapter deviates from the format of Chapters 6–8, where the range of inflectional morphemes per template slot is considered for each speaker in turn. Here morphemes and categories of marking are considered in turn per speaker. §9.1 provides an overview of the Final suffix position per speaker. §9.2 investigates the locative morpheme in adult input and its acquisition for each child. §9.3 examines the two morphemes encoding plural number, and §9.4 analyzes the two morphemes marking the obviative. §9.5 provides some concluding observations regarding the Final suffix.

9.1. Overview: The Final suffix position

This section briefly summarizes the overall presence of morphemes appearing in the Final suffix position throughout each speaker's data sample for the present study: The adult (§9.1.1.), Ani (§9.1.2.), Daisy (§9.1.3.), and Billy (§9.1.4.).

9.1.1. The Final suffix in adult input

Table 9.1 lists all tokens of the various Final suffix morphemes in child-directed speech within the dataset. The suffixes are listed in the order they are addressed in the following sections:

Marking that encodes locative (§9.2), plural (§9.3), and obviative (§9.4) values.

Table 9.1: All final suffix tokens across all nouns, in adult speech

Final suffix	Correct use	Om.	Comm.	Total	Prop. of tokens	Prop. of errors
No suffix	1,173	n/a	n/a	1,173	0.63	n/a
loc	137	1	0	138	0.07	0.01
3p	118	0	2	120	0.06	0.02
0p	161	0	0	161	0.09	0.00
3'	142	2	2	146	0.08	0.03
0'	110	0	0	110	0.06	0.00
Total	1,841	3	4	1,848	1.00	< 0.01

Notes. w/ = with. No suffix = bare animate or inanimate noun stem. loc = locative. 3p = animate proximate plural. 0p = inanimate proximate plural. 3' = animate obviative. 0' = inanimate obviative singular. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Throughout the entire dataset, adult input contains 1,848 total tokens of NEC nouns and mixed-language nouns. Table 9.1 shows that bare noun stems occupy the majority of adult input: 1,173/1,848 noun tokens (63.47 percent) are (in)animate proximate singular forms that take no final suffix. Errors with the Final suffix are rare in child-directed speech, as less than one percent of adult input overall contains an error with this suffix position. Perhaps surprisingly, the overt Final suffix morphemes all occupy a similar proportion of tokens in child-directed speech: Tokens of the locative, animate proximate plural, inanimate proximate plural, animate obviative, and inanimate obviative singular suffixes each take up about six to nine percent of the input.

9.1.2. The Final suffix in Ani’s speech

Ani produces a total of 194 noun tokens that are either NEC (177 tokens) or mixed-language (17 tokens). Table 9.2. compiles these tokens and their occurrence with Final suffix morphemes.

Table 9.2: All final suffix tokens across all nouns, in Ani’s speech

Final suffix	Correct use	Om.	Comm.	Total	Prop. of tokens	Prop. of errors
No suffix	161	n/a	n/a	161	0.83	n/a
loc	7	0	0	7	0.04	0.00
3p	8	0	0	8	0.04	0.00
0p	1	0	0	1	< 0.01	0.00
3’	6	2	0	8	0.04	0.25
0’	9	0	0	9	0.05	0.00
Total	192	2	0	194	1.00	0.01

Notes. w/ = with. No suffix = bare animate or inanimate noun stem. loc = locative. 3p = animate proximate plural. 0p = inanimate proximate plural. 3’ = animate obviative. 0’ = inanimate obviative singular. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

Compared to adult speech, Ani produces a small number of inflected noun tokens: The vast majority of Ani’s NEC and mixed-language noun tokens are bare nouns (161/194 tokens, 82.99 percent) that seem to be appropriately bare. Her speech contains 31 noun tokens with an adult-like application of the Final suffix, with just two errors.

9.1.3. The Final suffix in Daisy’s speech

Throughout her sampled data, Daisy produces 531 NEC and 66 mixed-language noun tokens, where she employs the Final suffix to a much greater extent than Ani (Table 9.3).

Bare nouns occupy a majority of Daisy’s production (304/597 tokens, 50.92 percent), although this represents a smaller proportion than unmarked noun tokens in adult input. Daisy also has a very low rate of errors, and she employs plural marking at a rate similar to that in child-directed speech. She does, though, use locative and obviative marking a bit more often than the adult. This may somewhat reflect the dynamics of her linguistic interactions with the adult, where Daisy is encouraged to tell stories, which involve third-person referents and locations.

Table 9.3: All final suffix tokens across all nouns, in Daisy’s speech

Final suffix	Correct use	Om.	Comm.	Total	Prop. of tokens	Prop. of errors
No suffix	304	n/a	n/a	304	0.51	n/a
loc	75	0	0	75	0.13	0.00
3p	33	0	0	33	0.06	0.00
0p	45	0	1	46	0.08	0.02
3’	75	4	1	80	0.13	0.06
0’	57	2	0	59	0.10	0.03
Total	589	6	2	597	1.01	0.01

Notes. w/ = with. No suffix = bare animate or inanimate noun stem. loc = locative. 3p = animate proximate plural. 0p = inanimate proximate plural. 3’ = animate obviative. 0’ = inanimate obviative singular. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion. The column “Prop. of tokens” adds up to more than 1.00 because of complications rounding to two decimal places.

9.1.4. The Final suffix in Billy’s speech

Billy produces a total of 169 NEC and 44 mixed-language noun tokens throughout his sampled data. Table 9.4 tallies his usage of the Final suffix morphemes with these tokens.

Table 9.4: All final suffix tokens across all nouns, in Billy’s speech

Final suffix	Correct use	Om.	Comm.	Total	Prop. of tokens	Prop. of errors
No suffix	96	n/a	n/a	96	0.45	n/a
loc	28	0	0	28	0.13	0.00
3p	19	2	1	22	0.10	0.14
0p	16	0	0	16	0.08	0.00
3’	29	0	0	29	0.14	0.00
0’	20	2	0	22	0.10	0.10
Total	207	4	2	213	1.01	0.03

Notes. w/ = with. No suffix = bare animate or inanimate noun stem. loc = locative. 3p = animate proximate plural. 0p = inanimate proximate plural. 3’ = animate obviative. 0’ = inanimate obviative singular. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion. The column “Prop. of tokens” adds up to more than 1.00 because of complications rounding to two decimal places.

In a departure from the input and Daisy’s speech, Billy’s bare noun stems occupy only a plurality of his tokens. His error rate is relatively low but still higher than Daisy’s as well. He employs locative and obviative marking at about the same rate as Daisy, with slightly less plural usage.

9.1.5. Summary

Adult input contains primarily NEC and mixed-language noun tokens without an overt Final suffix, but each Final suffix morpheme still occurs more than 100 times throughout the dataset. Ani's production stands apart from the input and the other children's speech, because she produces relatively few NEC and mixed-language nouns. However, Daisy and Billy actually use a higher proportion of Final suffix marking than occurs in child-directed speech, and although Daisy produces more suffix tokens, the two children each generally use morphemes at comparable rates.

9.2. The LOC suffix

As Table 2.2 in Chapter 2 illustrates, the locative suffix occurs independently from possession. It conveys a spatial meaning, and can occur on nouns inside or outside of possessive constructions. Because of this, determining obligatory contexts for locative suffix usage represents a different kind of challenge. It is hard to say with certainty whether a certain utterance has grammatical circumstances that **require** locative marking, and so this section focuses instead on when speakers actually use the suffix. The following sections explore the distribution of the suffix across noun types in child directed speech (§9.2.1.), then in the speech of Ani (§9.2.2.), Daisy (§9.2.3.), and Billy (§9.2.4.), before §9.2.5 provides some concluding observations about acquisition of the locative suffix.

9.2.1 The LOC suffix in adult input

Adult input contains 138 total contexts for nouns carrying the locative suffix: 10 mixed-language noun tokens, 127 NEC tokens, and just one error of omission with an NEC noun. Child-directed speech in the dataset includes 234 NEC noun types and 25 English types in mixed-language nouns, but the adult applies a locative suffix to just 44 NEC and eight English types. Table 9.5 breaks down locative suffix production across the noun types that have two or more tokens of the locative suffix. A few prominent patterns emerge from this usage.

As with the PSR suffix (Chapter 8), *îch* 'home' stands out as the noun type carrying the lion's share of tokens for the locative morpheme (1). Only *tâhtipiwin* 'chair' also takes more than ten tokens of the suffix (2), and most noun types have just a few tokens with the locative. Most

of the types in Table 9.5 are grammatically inanimate NEC nouns, but all types signify biologically inanimate entities.

- (1) ·ᑖᑖᑖᑖ ᑖ ᑖᑖᑖᑖᑖᑖᑖᑖᑖ ·ᑖᑖᑖᑖᑖᑖ ᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖ
Wâpimich mâ chishâyâkushishich wîchiwâhch iyihtâwich.
wâp-im-ich mâ chishâyâkushish-ich w-îch-iwâ-hch
look.at.them EMPH bear.cub-3p 3-home-2/3PL.PSR-LOC

iyihtâwich

they.do

‘Look at the little bears, they are at their home.’ (Adult, 4;06.08, B3.04, 23:29)

- (2) ᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖ ᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖ
chitâhtipiwinihch Dora utâhtipiwinihch
chi-tâhtipiwinihch Dora u-tâhtipiwinihch
2-chair-LOC name 3-chair-LOC

‘on your chair, on Dora’s chair’ (Adult, 2;04.22, A1.08, 32:08)

Table 9.5: Noun types w/ two or more LOC suffix tokens, in adult production

Type	Gloss	Category	Tokens w/ LOC suffix		Total
			Correct use	Om.	
îch	home	nid	36	0	36
tâhtipiwin	chair	ni	15	1	16
nituhkuyinikimikw	hospital	ni	6	0	6
wâsânihtâkin	window	ni	5	0	5
atâwâukimikw	store	ni	4	0	4
ayimuwâyâpî	radio	ni	4	0	4
nipî	water	ni	3	0	3
shtikwân	head	nid	3	0	3
shtikwânipîwî	hair	nid	3	0	3
wîhkwâyâ	sock	ni	3	0	3
garbage	garbage	eng	2	0	2
htiwikî	ear	nid	2	0	2
mâskiniu	road	ni	2	0	2
mîchisûkimikw	restaurant	ni	2	0	2
mîchiwâhp	teepee	ni	2	0	2
minihkwâkin	cup	ni	2	0	2
mischisin	shoe	ni	2	0	2
misinihîkin	book	ni	2	0	2
miskumî	ice	na	2	0	2
shchîshikw	eye	nid	2	0	2
television	television	eng	2	0	2
utâpânâskw	car, vehicle	na	2	0	2
wâskâhîkin	house	ni	2	0	2

Notes. w/ = with. LOC = locative. Om. = errors of omission. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English.

9.2.2. The LOC suffix in Ani’s speech

This section examines Ani’s usage of the locative suffix, including her distribution of the suffix with different noun types (§9.2.2.1.), whether she demonstrates productive usage of the suffix within her sampled data (§9.2.2.2.), and how her usage may connect to patterns in child-directed speech (§9.2.2.3.).

9.2.2.1. LOC suffix per noun type

Throughout her sample, Ani uses 35 NEC noun types and nine English types in mixed-language nouns, but she applies a locative suffix to only four types for a total of seven tokens (Table 9.6).

Table 9.6: All noun types w/ LOC suffix tokens, in Ani's speech

Type	Gloss	Category	Tokens w/ LOC suffix		Total
			Correct use	Err.	
îch *	home	nid	2	0	2
chair *	chair	eng	2	0	2
room *	room	eng	2	0	2
tâhtipiwin *	chair	ni	1	0	1

Notes. w/ = with. LOC = locative. Err. = errors. na = animate noun. ni = inanimate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with a LOC suffix in adult input.

9.2.2.2. Productivity of the LOC suffix

Ani produces the suffix on two different noun types at age 2;04.22, but each type is the analog of the other: *tâhtipiwinihch* 'on the chair' (one token) and *chairihch* 'on the chair' (one token).

These examples may be particularly meaningful, because they seem to show that Ani produces locative marking during a period when she omits all possessive inflection such as the person prefix (Chapter 6) and possessive suffix (Chapter 7). The data is limited, but these few signs indicate that Ani demonstrates knowledge of the locative before the person prefix and possessive suffix.

However, Ani then does not use the suffix until age 3;06.23, where she again uses the locative with English *chair* (3). This is also the same age point when she starts to use person prefixes in an adult-like fashion (Chapter 6).

- (3) $\dot{b} \triangleleft \wedge^c \iota \Delta \iota \iota^u$
 Kâ apit chairihch
 kâ-apit chair-ihch
 that-it.is.sitting chair-LOC
 'sitting on the chair' (Ani, 3;06.23, A1.30, 03:05)

Ani uses the locative in two consecutive recording sessions at age 4;00.13 (two tokens of *roomihch* 'in the room') and 4;03.07 (two tokens of *chîchinâhch* 'at our (INCL) house'). Her application of the suffix is adult-like in all contexts at this age point, but she has used only the noun type *chair* in contrasting forms without the locative. Thus, the sampled data does not

provide enough evidence to demonstrate that Ani has acquired productive usage of the locative suffix.

9.2.2.3. *Possible connections to patterns in adult input*

Ani's scant production of the locative makes it hard to connect her usage to adult input. The only clear pattern is that Ani uses the suffix on the two noun types that most commonly occur with locative marking in adult child-directed speech—*îch* 'home' and *tâhtipiwîn* 'chair' (Table 9.2)—and every noun type that Ani uses with a locative also occurs with a locative in child-directed speech. The word forms *chairihch* and *roomihch* also each occur once in the input.

9.2.2.4. *Summary*

Ani's data furnishes few examples of the locative suffix, but this primarily reflects the fact that her speech generally consists of noun tokens without any Final suffix morpheme. No strong conclusions can be drawn about her acquisition and productive usage of the suffix, but she seems to use locative marking before possessive inflection.

9.2.3. *The LOC suffix in Daisy's speech*

This section investigates Daisy's acquisition of the locative suffix, exploring her distribution of the morpheme across NEC and English noun types (§9.2.3.1.), when she demonstratives productive usage of the suffix (§9.2.3.2.), and how her usage resembles patterns in child-directed speech (§9.2.3.3.). §9.2.3.4 briefly summarizes findings.

9.2.3.1. *LOC suffix per noun type*

Daisy's data comprises 75 total locative suffix tokens, spanning 17 NEC noun types (61 tokens) and eight English types (14 tokens), with no errors. Table 9.7 lists all 25 noun types with their tokens occurring with a locative suffix, where types that also occur in child-directed speech marked with an asterisk.

Table 9.7: All noun types w/ LOC suffix tokens, in Daisy's speech

Type	Gloss	Category	Tokens w/ LOC suffix		Total
			Correct use	Err.	
îch *	home	nid	30	0	30
nituhkuyinikimikw *	hospital	ni	7	0	7
room *	room	eng	5	0	5
mishtikw *	tree	na	3	0	3
nipî *	water	ni	3	0	3
tihchî *	hand	nid	3	0	3
helicopter	helicopter	eng	2	0	2
ichishî *	intestines, stomach	nad	2	0	2
mâmâpisun *	swing	ni	2	0	2
shîpîshish	creek	ni	2	0	2
window	window	eng	2	0	2
asinî	stone	ni	1	0	1
bathtub	bathtub	eng	1	0	1
chair *	chair	eng	1	0	1
closet	closet	eng	1	0	1
htiwikî *	ear	nid	1	0	1
kuhtishkui	throat	nid	1	0	1
mishtikw *	stick	ni	1	0	1
miskumî *	ice	na	1	0	1
nipâwin *	bed	ni	1	0	1
road	road	eng	1	0	1
shchîshikw *	eye	nid	1	0	1
shtikwân *	head	nid	1	0	1
tree	tree	eng	1	0	1
wâsânihtâkin *	window	ni	1	0	1

Notes. w/ = with. LOC = locative. Err. = errors. na = animate noun. ni = inanimate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with a LOC suffix in adult input.

9.2.3.2. Productivity of the LOC suffix

Daisy uses a locative suffix in all but one of her recording sessions (Table 9.8).

Table 9.8: Daisy's LOC suffix tokens, per recording session

Session	Child age	LOC tokens	
		Correct usage	Errors
B1.01	3;08.10	4	0
B1.03	3;09.22	9	0
B1.04	3;11.11	13	0
B1.05	4;00.00	8	0
B1.08	4;02.06	9	0
B1.11	4;04.04	2	0
B1.14	4;06.02	5	0
B1.17	4;07.28	6	0
B1.20	4;10.03	3	0
B1.24	5;00.20	6	0
B1.27	5;04.12	1	0
B1.30	5;07.03	4	0
B1.31	5;10.02	5	0
Total		75	0

Notes. LOC = locative.

In her first recording session at age 3;08.10, Daisy applies the suffix to one token each of four different noun types: *miskumî* ‘ice’, *nipâwin* ‘bed’, *wâsânihtâkin* ‘window’ (4), and English *road* (5).

- (4) σṛ" ṣ>Δ^e ḁ.Ĉ" .<ḥσ"ĈPṣ"ḷ_x
- Nichîh nîpuwin nâtâh wâsânihtâkinîhch.
- nichîhnîpuwin nâ-tâh wâsânihtâkin-îhch
- I.was.standing DEM.REM-LOC window-LOC
- ‘I was standing over there by the window.’ (Daisy, 3;08.10, B1.01, 02:34)
-
- (5) <ṣṣṣ .<ṣ ṛ"ṅḷ ṣṣṣ ṣ<ṅḷ ḃΔ"Ĉ^c <<ṣ_x
- Âshkw wâsh chîhtipishkim roadihch kâihtât awân.
- âshkw wâsh chîhtipishkim road-ihch kâihtât awân
- still EMPH had.a.birthday road-LOC that.is someone
- ‘The one that was on the road had his birthday.’ (Daisy, 3;08.10, B1.01, 32:33)

Daisy does not use the suffix in the next session, but she applies it in the following two consecutive sessions at age points 3;09.22 and 3;11.11 to another nine noun types: NEC types

htiwikî ‘ear’ (one token), *îch* ‘home’ (seven tokens), *ichishî* ‘stomach’ (one token), *mishtikw* ‘stick’ (one token), and *nituhkuyinikimikw* ‘hospital’ (seven tokens) as well as English types *bath tub* (one token), *closet* (one token), *helicopter* (one token), and *room* (two tokens).

Altogether Daisy demonstrates productive usage of the locative suffix by age 3;11.11, as she has no errors in her locative suffix production, and she produces three total noun types in contrasting word forms without the suffix:

- *ichishî* ‘stomach’ in *utichishîsh* ‘her/his little stomach’ (one token)
- *nipâwin* ‘bed’ in *unipâwin* ‘her/his bed’ (one token)
- bare stem *road* (two tokens)

9.2.3.3. *Possible connections to patterns in adult input*

Some aspects of Daisy’s usage of the locative seem connected to child-directed speech. As in adult speech, Daisy inflects the noun type *îch* ‘home’ with by far the largest number of locative tokens (30/75 tokens, 40 percent), and so *îch* may also play a pathbreaking role for children to acquire the locative. With a Zipfian distribution, the remainder of noun types carry far fewer tokens, and most occur with just one or two locative markers.

Daisy mostly applies the locative to noun types that also take the suffix in adult input (16/25 types, 64 percent). This includes all of Daisy’s types that take three or more locative tokens. In fact, all but three of Daisy’s 16 NEC types in Table 9.7 also occur with a locative suffix in adult input.

However, once again, Daisy’s production of English nouns with NEC inflection may testify in particular to her productive usage of inflectional morphology. Although Daisy and the adult each apply a locative suffix to eight English noun types, Daisy does so with six types that do not take the suffix in the input: *helicopter*, *window*, *bath tub*, *closet*, *road*, and *tree*.

9.2.3.4. *Summary*

Daisy employs the locative suffix from her first recording session and applies it to a variety of noun types to demonstrate productive usage of the morpheme by age 3;11.11. She primarily uses the locative with NEC noun types that also occur with the suffix in child-directed speech—in

particular with *îch* ‘home’—but her usage of the locative with English types more directly attests to her productive acquisition of the suffix.

9.2.4. The LOC suffix in Billy’s speech

This section examines the acquisition of the locative suffix by Billy, the oldest child represented in the dataset. I survey Billy’s distribution of the suffix with NEC and English noun types (§9.2.4.1.), evaluate his productive usage of the suffix (§9.2.4.2.), explore possible relationships between his speech and patterns in the input, (§9.2.4.3.), and summarize findings (§9.2.3.4.).

9.2.4.1. *LOC suffix per noun type*

Billy applies the locative suffix to 28 total noun tokens, but with an interesting imbalance between noun types: He produces just five NEC noun types with 14 total tokens but 12 different English types in mixed-language nouns with 14 total tokens. Like Daisy, he has no errors with the locative. Table 9.9 lists all of Billy’s 17 noun types with their tokens occurring with a locative suffix, and types that also occur in child-directed speech are indicated with an asterisk.

Table 9.9: All noun types w/ LOC suffix tokens, in Billy’s speech

Type	Gloss	Category	Tokens w/ LOC suffix		
			Correct use	Err.	Total
îch *	home	nid	10	0	10
bus	bus	eng	2	0	2
window	window	eng	2	0	2
camera	camera	eng	1	0	1
castle	castle	eng	1	0	1
chimney	chimney	eng	1	0	1
classroom	classroom	eng	1	0	1
computer room	computer room	eng	1	0	1
floor *	floor	eng	1	0	1
kitchen	kitchen	eng	1	0	1
mîchiwâhp *	teepee	ni	1	0	1
nipâwin *	bed	ni	1	0	1
nipî *	water	ni	1	0	1
plane	airplane	eng	1	0	1
puzzle	puzzle	eng	1	0	1
room *	room	eng	1	0	1
sâkihîkin	lake	ni	1	0	1

Notes. w/ = with. LOC = locative. Err. = errors. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with a LOC suffix in adult input.

9.2.4.2. Productivity of the LOC suffix

Billy employs the locative suffix in all of his 11 recording sessions (Table 9.10), but compared to Daisy, he uses fewer noun types per session with the morpheme.

In his first recording session at age 4;05.04, Billy has one token of *îch* ‘home’ with the locative in *wîchiwâhch* ‘at their house’. Over the next three recording sessions from age 4;06.08 to 4;08.21, he applies the suffix with no errors to another three noun types with *cameraihch* ‘in the camera’ (one token), *chimneyhch* ‘(down the) chimney’ (one token), and *nipîhch* ‘in the water’ (one token). He also produces three of these noun types in contrasting word forms without the locative:

- bare stem *chimney* (two tokens) and possessive form *uchimneyim* ‘her/his chimney’ (one token)
- bare stem *nipî* ‘water’ (one token)
- inflected form *wîchiwâu* ‘their house’ (one token)

At the age point of 4;08.21, Billy has satisfied the criteria for demonstrating productive usage of the locative suffix.

Table 9.10: Billy's LOC suffix tokens, per recording session

Session	Child age	LOC tokens	
		Correct usage	Errors
B3.02	4;05.04	1	0
B3.04	4;06.08	1	0
B3.06	4;07.27	2	0
B3.07	4;08.21	1	0
B3.09	4;10.08	8	0
B3.11	5;00.13	7	0
B3.13	5;02.12	1	0
B3.14	5;03.22	1	0
B3.15	5;05.00	2	0
B3.17	5;06.27	2	0
B3.18	5;10.06	2	0
Total		28	0

Notes. LOC = locative.

9.2.4.3. Possible connections to patterns in adult input

As with Daisy, particular aspects of Billy's locative usage seem connected to child-directed speech. For one, he also applies the locative to *îch* 'home' far more often than to any other noun type, and his locative suffix occurs with a Zipfian distribution where all other noun types take just one or two suffix tokens. Four of Billy's five NEC noun types in Table 9.9 also occur with a locative morpheme in adult input.

In another similarity to Daisy, though, Billy's application of the locative suffix to English noun types seems more independent from the input. He has only two types that appear with a locative in adult input (floor and room), while his other 10 English types apparently testify to his productive acquisition of the suffix.

9.2.4.4. *Summary*

Billy applies the locative suffix from his first session and throughout his entire sample, but he uses such marking on fewer noun types and tokens than Daisy. He demonstrates productive usage of the morpheme by age 4;08.21. In another similarity to Daisy, Billy's usage of the locative with NEC noun types seems tied to their occurrence in child-directed speech, but his application of the locative suffix to English noun types in a manner not present in the input testifies directly to his acquisition of NEC inflectional morphology.

9.2.5. **Conclusions: LOC suffix**

The adult employs the locative suffix over a range of noun types with a Zipfian distribution in suffix tokens, where *ich* 'home' carries by far the largest proportion of tokens. Ani produces very few locative morphemes, but the two older children tend to produce the locative with NEC noun types that also appear with the suffix in the input. Here *ich* carries an even more outsized load of tokens, and so perhaps the children use that noun type as a pathbreaker in acquiring the locative. Both Daisy and Billy demonstrate productive usage of the suffix with English noun types as well, where they seem to produce more original word forms not found in child-directed speech.

9.3. The PL suffix

In addition to the locative, the Final suffix position also includes morphemes marking plural number. As the grammatical description in Chapter 2 explains, this marking entails interacting considerations of not just number but also grammatical animacy and obviation. As with the locative suffix, it is difficult to pinpoint obligatory contexts for plural marking, because there is not always clear grammatical conditioning for plural number. Therefore, this section focuses instead on when speakers use a particular plural suffix. This section concerns only the two morphemes that expressly encode plural number, while §9.4 focuses on the morphemes that expressly encode obviation. The two plural suffixes concerned are as follows:

- The suffix *-ich* encodes plural number for nouns that are grammatically **animate** and **proximate**. Nouns that are animate and obviative are neutralized for number.

- The suffix *-h* encodes plural number for nouns that are grammatically **inanimate** and **either proximate or obviative**. Nouns that are inanimate and plural are neutralized for the proximate/obviative distinction.

For the remainder of this chapter, the suffixes *-ich* and *-h* are categorized together as the **Plural (PL) suffix**. This categorization enables more parsimonious analysis and yet is not strictly contrived for convenience, because both suffixes have similar chances to occur throughout the corpus: Chapter 5 shows that the adult, Ani, and Daisy each produce a very close balance of animate and inanimate noun types, and Billy’s NEC production contains about 60 percent animate types. This section investigates the presence of each PL suffix morpheme in child-directed speech (§9.3.1.) and the acquisition of each morpheme by Ani (§9.3.2), Daisy (§9.3.3), and Billy (§9.3.4.).

9.3.1. The PL suffix in adult input

The adult produces 279 total PL suffix tokens throughout the dataset. She has only three tokens of mixed-language nouns with an NEC plural suffix—*ghostich* ‘ghosts’, *princessich* ‘princesses’, and *candycaneh* ‘candy canes’—so this section considers her NEC and mixed-language production together.

Table 9.11 calculates the tokens of each PL suffix morpheme in adult input. She produces nearly 300 plural suffixes, with a slight majority of inanimate tokens (161/281, 57.30 percent) and a very low rate of errors. In (6), for instance, she uses the animate plural when the inanimate is required.

- (6) Γʀσ"Δρḁ"ŋ^h
 misinihîkinâhtikwh
 Target: misinihîkinâhtikw-h
 pencil-0p
 Actual: misinihîkinâhtiku-*ch
 pencil-*3p
 ‘pencils’ (Adult, 5;06.27, B3.17, 26:12)

Table 9.11: All PL suffix tokens, in adult speech

PL suffix	Correct use	Om.	Comm.	Total	Prop. of tokens	Prop. of errors
3p	118	0	2	120	0.43	0.02
0p	161	0	0	161	0.57	0.00
Total	279	0	2	281	1.00	0.01

Notes. PL = plural. 3p = animate proximate plural suffix -ich. 0p = inanimate plural suffix -h. Om. = errors of omission. Comm. = errors of commission. Prop. = proportion.

The adult uses 234 NEC noun types and 25 English types in mixed-language nouns throughout the dataset (259 total types), but she distributes PL suffix morphemes across just 78 of these noun types (30.12 percent): 75 NEC types and just three English types. 38 of these 78 types occur with just one token of a plural suffix, and 13 types have two tokens. Table 9.12 lays out the remaining most frequent noun types in adult input, by total number of PL suffix tokens. A few patterns emerge from these numbers.

First, a Zipfian distribution is evident again. A small number of noun types bear the majority of plural suffixes: *mâtiwâkin* ‘toy, game’ and *awâshish* ‘child’ together carry 63/279 (22.58 percent) of the adult’s total on-target PL suffix tokens. Only four other noun types each occur with more than ten total plural suffixes in child-directed speech: *mischisin* ‘shoe’, *shchîshikw* ‘eye’, *îpit* ‘tooth’, and *nîpîsh* ‘flower’. The adult also employs a close balance between animacy categories: 14 noun types in Table 9.12 are animate and 13 types are inanimate. However, an imbalance persists in the number of PL suffix tokens within Table 9.12, as 130/216 (60.19 percent) on-target tokens are inanimate and just 86/216 (39.81 percent) are animate. This imbalance is much more prominent among the very most frequent noun types. Of the six types that occur with ten or more plural tokens, 87/118 (73.73 percent) are inanimate.

Table 9:12: Noun types w/ three or more PL suffix tokens, in adult production

Type	Gloss	Category	Tokens w/ PL suffix		Total
			Correct use	Comm.	
mâtiwâkin	toy, game	ni	32	0	32
awâshish	child	na	31	0	31
mischisin	shoe	ni	15	0	15
shchîshikw	eye	nid	15	0	15
îpit	tooth	nid	14	0	14
nîpîsh	flower	ni	11	0	11
wîchâwâkin	friend	na	8	1	9
pîpî	baby	na	8	0	8
shtikwânipîwî	hair	nid	8	0	8
îyiyiu	(Native) person	na	7	0	7
misinihîkin	book	ni	7	0	7
tihchî	hand	nid	7	0	7
châkwân	thing	ni	5	0	5
pîywâshikin	sock	ni	5	0	5
htiwikî	ear	nid	4	0	4
ishkutâu	fire, battery	ni	4	0	4
minitûsh	insect	na	4	0	4
utâpânâskw	car, vehicle	na	4	0	4
achihkuhsh	star	na	3	0	3
achimushish	puppy	na	3	0	3
âpitisîsiu	worker	na	3	0	3
chishâyâkushish	bear cub	na	3	0	3
ischis	mitten	na	3	0	3
nimâs	fish	na	3	0	3
nisk	goose	na	3	0	3
piyâshîsh	bird	na	3	0	3
wâu	egg	ni	3	0	3

Notes. w/ = with. PL = plural. Comm. = errors of commission. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English.

9.3.1.1. Summary

The adult applies a PL suffix to a minority of her overall noun types, and a relative handful of types bear the majority of PL suffix tokens. Children encounter nearly equal numbers of animate and inanimate noun types in adult input, but tokens of each plural suffix are more imbalanced: They hear the inanimate plural *-h* more often than the animate plural *-ich*, especially among the noun types that most frequently occur with a PL suffix.

9.3.2. The PL suffix in Ani's speech

This section describes Ani's PL suffix usage across noun types (§9.3.2.1.), the degree to which she demonstrates productive usage of each PL suffix morpheme (§9.3.2.2.), and how she may follow patterns in adult input (§9.3.2.3.).

9.3.2.1. PL suffix per noun type

Ani uses 35 NEC noun types across her entire sample, but she uses a PL suffix with just three noun types: *awâshish* 'child' in *awâshishich* 'children' (seven tokens), *pîpî* 'baby' in *pîpîshich* 'little babies' (one token), and *wâpuyân* 'blanket' in *uwâpuyânh* 'her/his blankets' (one token). She does not use an NEC PL suffix with any English noun type.

9.3.2.2. Productivity of the PL suffix

Ani produces her first word form with a possible PL suffix at age 2;08.23 (4). This is her one and only token carrying the inanimate plural *-h*, but some important factors make this example difficult to interpret with confidence.

Ani omits the person prefix in (7), which comes during a stage in her NEC development where she appears to omit all possessive inflection entirely. Although possible, it seems unlikely that she would have productively applied the PL suffix *-h* just once at this age point and then never apply that suffix again for the remainder of her sampled data. What then accounts for her usage of *-h* here?

- (7) ▷ǀǀ ▷◁▷ǀǀ
 uyâh uwâpuyânh
Target: u-yâh u-wâpuyân-h
Actual: u-yâh *∅-wâpuyân-h
 DEM.PXL-0p 3-blanket-0p
 'these ... her blankets' (Ani, 2;08.23, A1.15, 30:56)

As §9.4.1 addresses with more depth, I think converging forces may obscure the interpretation of this *-h*. First, a final *-h* morpheme is generally the only morphophonological condition for final "accent" on NEC nouns, which surfaces primarily as higher pitch and

9.3.2.3. *Possible connections to patterns in adult input*

With such little production, it is difficult to connect Ani's PL suffix usage to child-directed speech, but some of her usage may relate to frequency in the input. The only noun type Ani uses with more than one PL suffix token is *awâshish* 'child', which is also the second-most frequent noun type with a PL suffix in the input (Table 9.12). She also produces one plural token of *pîpî* 'baby', which is another of the adult's most frequent types in Table 9.12.

9.3.2.4. *Summary*

Ani produces very few plural forms, which makes it difficult to draw firm conclusions about her acquisition of the PL suffix. Ani seems to acquire productive usage of the animate plural *-ich*, but she does not demonstrate productive usage of the inanimate plural suffix *-h*, despite its frequency in the input. However, given limited evidence, some aspects of the input may connect to Ani's productive usage of the animate plural suffix: She uses *-ich* with two of the most common noun types that occur with the morpheme in child-directed speech.

9.3.3. *The PL suffix in Daisy's speech*

This section analyzes Daisy's acquisition of the PL suffix. It describes her distribution of plural marking across noun types (§9.3.3.1.), the degree to which her usage seems to follow patterns in adult input (§9.3.3.2.), and how she demonstrates productive usage of both PL suffix morphemes (§9.3.3.3.). §9.3.3.4 summarizes findings.

9.3.3.1. *PL suffix per noun type*

Throughout her sampled data, Daisy uses 114 NEC noun types (531 tokens) and 44 English types in mixed-language nouns (66 tokens). She applies a PL suffix morpheme to just 41 of these types: 36 NEC types (74 total tokens) and five English (five tokens). For 26 of these 41 types, Daisy uses a PL suffix with only one token. Table 9.13 lists her remaining 15 types, by total number of PL suffix tokens, with an asterisk marking types that also occur with plural marking in child-directed speech. Daisy's sole error with the types in Table 9.13 comes in (9), when she uses the inanimate plural instead of the animate morpheme

- (9) <đ" >ř < <đšš" <
 âkuh uchî awâshishich
 Target: âkuh u-chî awâshish-ich
 so DEM.PXL-3p child-3p
 Actual: âkuh u-chî awâshish-*h
 so DEM.PXL-3p child-*0p
 ‘... then these are children’ (Daisy, 3;09.22, B1.03, 07:55)

Table 9.13 shows that Daisy does not employ the same kind of Zipfian distribution that persists with her usage of the locative suffix. Her PL suffix tokens spread out much more evenly across noun types.

Table 9.13: Noun types w/ two or more PL suffix tokens, in Daisy’s speech

Type	Gloss	Category	Tokens w/ PL suffix		Total
			Correct use	Comm.	
awâshish *	child	na	6	1	6
sûtâtis *	candy, sweets	ni	5	0	6
mâtiwâkin *	toy, game	ni	5	0	5
pwâchikî	boogeyman	na	5	0	5
shchîshikw *	eye	nid	4	0	4
skât	leg	nid	4	0	4
tihchî *	hand	nid	4	0	4
chîshtihîkin *	fork, needle	ni	3	0	3
mischisin *	shoe	ni	3	0	3
pîpî *	baby	na	3	0	3
îpit *	tooth	nid	2	0	2
kwâhkwâpisiu	butterfly	na	2	0	2
nâpâu	man	na	2	0	2
nituhkuyiniskwâu	nurse	na	2	0	2
pitâtis	potato	ni	2	0	2

Notes. w/ = with. PL = plural. Comm. = errors of commission. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with a PL suffix in adult input.

9.3.3.2. Productivity of the PL suffix

As with the locative suffix, Daisy employs a PL suffix morpheme in 13 out of her 14 sampled recording sessions (Table 9.14).

Even in her first recording session at age 3;08.10, Daisy applies plural morphemes to a range of noun types. She uses the animate plural *-ich* with six NEC types (one token each): *âmihkwân* ‘spoon’ (10), *atihkw* ‘caribou’, *chiyâshkw* ‘seagull’, *ishkwâshish* ‘girl’, *pwâchikî* ‘boogeyman’, and *wâmishtikushû* ‘(white) person’.

- (10) Ł▷Ń" Δ <Γ"ḃσᶜ σŁx
Mâutih wî âmihkwânishich nimâ.
mâu-tih wî âmihkwân-ish-ich nimâ
DEM.PXL-LOC EMPH spoon-DIM-3p NEG
‘The little spoons go in here, right?’ (Daisy, 3;08.10, B1.01, 09:31)

Table 9.14: Daisy’s PL suffix tokens, per recording session

Session	Child age	PL tokens	
		Correct usage	Errors
B1.01	3;08.10	17	0
B1.03	3;09.22	10	1
B1.04	3;11.11	7	0
B1.05	4;00.00	7	0
B1.08	4;02.06	9	0
B1.11	4;04.04	3	0
B1.14	4;06.02	5	0
B1.17	4;07.28	4	0
B1.20	4;10.03	3	0
B1.24	5;00.20	2	0
B1.27	5;04.12	1	0
B1.30	5;07.03	4	0
B1.31	5;10.02	6	0
Total		71	1

Notes. PL= plural.

In this session, she also applies the inanimate plural *-h* to ten NEC types: *chîshstihîkin* ‘fork, needle’ (two tokens) (11); *mâtiwâkin* ‘toy, game’ (two tokens), *minihkwâkin* ‘cup’, *mischisin* ‘shoe’, *pitâtis* ‘potato’ (two tokens), *tihchî* ‘hand’, and *îpit* ‘tooth’. She also marks the English type *garbage* with the inanimate plural (12). This indicates that she categorizes the English word

with the same grammatical animacy as its inanimate NEC analog *wâpinichâwin* ‘garbage’ (Margaret, REH1-012, 57:25).

- (11) ᑖᑦᑎᑦᑖᑦᑖᑦ
 chîshtihîkinh
 chîshtihîkin-h
 fork-0p
 ‘forks’ (Daisy, 3;08.10, B1.01, 07:39)

- (12) ᑖᑦᑖᑦᑖᑦᑖᑦ
 garbageh
 garbage-h
 garbage-0p
 ‘(lots of) garbage’ (Daisy, 3;08.10, B1.01, 23:21)

Despite this rich usage, Daisy does not use a PL suffix in the next recording session at age 3;09.01. At age 3;09.22, however, Daisy uses the animate plural in an adult-like manner with another four NEC types *âpitisîsiu* ‘worker’, *iskwâu* ‘woman’, *nituhkuyiniskwâu* ‘nurse’ (two tokens), and *pîpî* ‘baby’ (two tokens). She also applies the suffix to one token of English *rabbit* (13), which she double-marks for plurality with the English plural *-s*.

- (13) ᑖᑦᑖᑦᑖᑦᑖᑦ ᑖᑦᑖᑦᑖᑦᑖᑦ
 Mâutih mâutih rabbitsich.
 mâu-tih mâu-tih rabbit-s-ich
 DEM.PXL-LOC DEM.PXL-LOC rabbit-ENG.PL-3p
 ‘Right here, right here are the rabbits’ (Daisy, 3;09.22, B1.03, 07:39)

She uses the inanimate plural *-h* with another token of *mâtiwâkin* ‘toy, game’ and one token of *shchîshikw* ‘eye’, and she applies the marker to English ball (14). This example shows that Daisy categorizes English *ball* as inanimate, which differs from the grammatically animate NEC

analog *tûhwân* ‘ball’. Daisy has no tokens of *tûhwân* in the sample, so there is no opportunity to see how she categorizes the animacy of that type.

- (14) ĺ▷ĩ" <«" ǒ <Œ·<ǵσ·Δ:Δǰ"̂x
Mâuuyâh ballh kê pâshiwâkiniwiwiyich-h.
mâu-yâh ball-h kêpâshiwâkiniwiwiyich-h
DEM.PXL-0’p ball-0p that.they.were.brought
‘Here are the balls that were brought.’ (Daisy, 3;09.22, B1.03, 30:43)

In Daisy’s next consecutive recording session at age 3;11.11, she satisfies the criteria for productivity for both PL suffix morphemes. She uses the animate plural *-ich* with one token each of *pwâchikî* ‘boogeyman’ and *uhkum* ‘grandmother’. By this age she has used *-ich* with 11 different noun types, and she has produced nine of these types in contrasting forms without the suffix. Daisy puts the inanimate plural *-h* with one token each of *châkwân* ‘thing’, *pîywâshikin* ‘sock’, *shchîshikw* ‘eye’, *shihkun* ‘toe’, and *skât* ‘leg’. This brings her total to 11 different NEC types and two English types with *-h*, and she has produced eight of these 13 types in contrasting word forms as well. With only one error between 3;09.22 and 3;11.11, she exceeds the 80 percent threshold of accuracy for both PL suffix morphemes.

9.3.3.3. *Possible connections to patterns in adult input*

Some relationship seems possible between Daisy’s PL suffix usage and what happens in child-directed speech. Just a little over half of Daisy’s most frequent noun types in Table 9.13 (9/16, 56.25 percent) also occur with a plural suffix in adult input. However, this includes the five most common types from the adult’s usage tallied in Table 9.12: *mâtiwâkin* ‘toy, game’, *awâshish* ‘child’, *mischisin* ‘shoe’, *shchîshikw* ‘eye’, and *îpit* ‘tooth’. In other words, Daisy’s PL suffix usage includes the most frequent noun types with plural marking in child-directed speech.

However, Daisy demonstrates rich productivity in applying a PL suffix morpheme to 20 total noun types that do not occur with such marking in the input. This includes all five of her English types: *ball*, *garbage*, *monkey*, *pencil*, and *rabbit*.

9.3.3.4. *Summary*

From her first recording session at age 3;08.10, Daisy applies both PL suffix morphemes (*-ich* and *-h*) to a rich range of noun types, and she demonstrates productive usage of both suffixes by age 3;11.11. It seems likely that Daisy has acquired productive usage of the PL suffix before her data sample begins at age 3;08.10, and the available data do not allow examination of the patterns that may have existed in her speech before she attained such productive usage. Daisy does indeed produce the noun types that most commonly occur in adult input with plural marking, and 21 of her noun types with a plural occur with the Plural suffix in the input. However, she also uses the PL suffix morphemes with 20 noun types that do not take such marking within the child-directed speech sampled for the present study.

9.3.4. **The PL suffix in Billy’s speech**

This section explores Billy’s acquisition of the PL suffix, which includes his distribution (§9.3.4.1.) and productive usage of each morpheme (§9.3.4.2.), as well as how his usage may connect to patterns in child-directed speech (§9.3.4.3.). §9.3.4.4 summarizes findings.

9.3.4.1. *PL suffix per noun type*

Billy uses a total of 64 NEC noun types (169 tokens) and 30 English types with NEC inflection (44 tokens), but applies a PL suffix morpheme to just 21 NEC and four English types. Like Daisy, Billy does not quite employ a Zipfian distribution with his plural suffixes, and he spreads plural marking relatively evenly across these 25 noun types (Table 9.15). He has two errors of omission, where he leaves off the required animate plural morpheme (15–16).

(15) Γʹ<ι<ιΓσ>ιʹx

Misiwâ â minitûshich.

Target: misiwâ â minitûsh-ich

Actual: misiwâ â minitûsh-*∅

all Q insect-3p

‘Are these all germs?’ (Billy, 4;07, B3.13, 03:29)

9.3.4.2. Productivity of the PL suffix

Billy produces a PL suffix token in nine of his 11 total recording sessions (Table 9.16). In his first recording session at age 4;05.04, Billy uses the animate plural suffix *-ich* with four different NEC noun types: *âpitisîsiu* ‘worker’ (17), *ishkwâshish* ‘girl’, *nâpâu* ‘man’, and *pîpî* ‘baby’ (two tokens). He also uses the suffix on one token of the English type bicycle (18). This example shows he categorizes the English word with the same grammatical animacy as its NEC analog *kâtihtipishkiâkiniwit* ‘bicycle’.

(17) <î∧ŋîʔʔ>^ʔ
 âpitisîsiuch
 âpitisîsiu-ch
 worker-3p
 ‘workers’ (Billy, 4;05.04, B3.02, 25:15)

(18) Bicycle Δ^ʔ ä.C^ʔ ð Δ^ʔC^ʔ_x
 Bicyclech nâtâh kâ ihtâch.
 bicycle-ch nâ-tâh kâihtâch
 bicycle-3p DEM.REM-LOC that.they.are
 ‘Bicycles, the ones over there.’ (Billy, 4;05.04, B3.02, 05:44)

Table 9.16: Billy’s PL suffix tokens, per recording session

Session	Child age	PL tokens	
		Correct usage	Errors
B3.02	4;05.04	6	0
B3.04	4;06.08	6	0
B3.06	4;07.27	2	2
B3.07	4;08.21	2	0
B3.11	5;00.13	1	0
B3.13	5;02.12	4	1
B3.14	5;03.22	3	0
B3.15	5;05.00	2	0
B3.18	5;10.06	8	1
Total		34	4

Notes. PL = plural.

Billy's first inanimate plural tokens come in the next session at 4;06.08, where he applies the suffix *-h* to another five NEC types: *htiwikî* 'ear' (19), *îpit* 'tooth', *mâtiwâkin* 'toy, game', *shtikwânipîwî* 'hair' (two tokens), and *tihchî* 'hand'. He has no tokens of the animate plural in this session.

- (19) σ"ŋΔρ"
 nihtiwikîh
 ni-htiwikî-h
 1-ear-0p
 ' my ears ' (Billy, 4;06.08, B3.04, 28:15)

This pattern persists throughout his sampled data: Until his final recording session at age 5;10.06, Billy produces only one PL suffix morpheme during a given session. He goes back and forth between using only *-ich* or only *-h* in a single session, which does not allow him to satisfy the criterion for productivity of using a morpheme in two consecutive recording sessions.

Eventually Billy demonstrates productive usage of the animate plural *-ich* at age 5;02.12. In the previous session he applies the suffix to one token of the noun type *pwâchikî* 'boogeyman', and at 5;02.12 Billy uses the suffix with four tokens of *awâshish* 'child'. With just one error in six tokens, he exceeds the 80 percent threshold for accuracy in using the suffix. By this age point Billy has applied *-ich* in an adult-like manner to a total of 11 noun types, and he has used seven of those types in contrasting word forms without the plural.

However, by the end of his sampled data, Billy does not demonstrate productive usage of the inanimate plural suffix *-h*. Throughout his data, Billy uses *-h* with a total of ten NEC noun types and two English types, with no errors, and he produces three of these types in contrasting forms without the suffix—but he does not use the morpheme in two consecutive recording sessions.

9.3.4.3. *Possible connections to patterns in adult input*

Billy's production seems to follow some patterns in child-directed speech. For one, 16/25 of his noun types in Table 9.15 also occur with a PL suffix in adult input. Billy's most frequent type taking an animate plural is also the most frequent type with the suffix in the input (Table 9.12), and Billy uses five of the six most common types occurring with a PL suffix in child-directed

speech: *mâtiwâkin* ‘toy, game’, *awâshish* ‘child’, *shchîshikw* ‘eye’, *îpit* ‘tooth’, and *nîpîsh* ‘(little) flower’. As with Daisy, Billy’s PL suffix usage includes the most frequent noun types with plural marking in child-directed speech.

However, in another similarity to Daisy, Billy also applies a PL suffix to a variety of noun types that do not occur with plural marking in the input. These directly testify to his identification and abstraction of both PL suffix morphemes.

9.3.4.4. Summary

Billy uses the PL suffix from his first recording session, and he applies each PL suffix morpheme to a range of different noun types throughout his sample. Because he tends to use just one morpheme in a given session, Billy demonstrates productive usage of only the animate plural suffix *-ich*. Like Daisy, Billy uses the PL suffix with many of the noun types that occur most frequently in child-directed speech, but he also puts the PL suffix on several nouns types that do not take such marking in the input.

9.3.5. Conclusions: The PL suffix

As with the locative suffix, the adult applies the PL suffix to a subset of noun types with a Zipfian distribution. She produces a balance of animate and inanimate noun types, but her tokens slightly favor the inanimate plural suffix *-h*. All three children demonstrate different levels of productive usage with the two PL suffix morphemes, and all three follow and diverge from patterns in child-directed speech to different degrees as well. Each child demonstrates productivity with the animate plural *-ich*, but only Daisy also shows full productivity with *-h*. Each child produces plural forms of noun types that most commonly occur with the PL suffix in adult input, but Daisy and Billy also seem to apply the PL suffix creatively to a variety of noun types that do not take such marking in child-directed speech.

9.4. The OBV suffix

This section analyzes the morphemes encoding obviation on nouns. It first describes methodological challenges peculiar to this issue (§9.4.1.). Then I explore marking for animate obviative nouns (§9.4.2.) in the input and in child speech, followed by marking for inanimate obviative singular nouns (§9.4.3.)

9.4.1. **Methodological note: Navigating the challenge of obviation**

Examining the acquisition of marking for obviation constitutes the biggest challenge for the present study, for three primary reasons: 1) the conditioning circumstances for obviation; 2) the different grammatical rules governing the distribution of each obviative morpheme; and 3) the difficulties of discerning production of word-final *-h*.

As the grammatical description in Chapter 2 illustrates, the mechanics of obviation entail a complicated web of factors related to not only morphosyntax but also discourse. To review briefly, only two grammatical contexts condition obligatory obviative marking for a nominal:

1. **Possessor obviation:** A third-person possessor automatically entails an obviative possessee.
2. **Clausemate obviation:** Within a clause, a proximate third-person triggers obviative status for any other third-person(s).

Clausemate obviation presents particular difficulty for the present study. For one, many of the utterances in the dataset are not comprised of whole clausal units. Additionally, a given clause can have proximate and obviative referents indexed through various means, including overt nouns, pronouns, demonstratives, names, or just verbal morphology.

Tracing the acquisition of clausemate obviation would require determining, at the very least: a child's intended meaning behind a clause; how many intended referents are involved in the clause; to what extent each referent is indexed in the clause; to what extent this indexing includes nominal elements; whether/how any nominal elements can or should bear obviative marking; what the child actually produces; and whether/how this production resembles or diverges from adult-like speech. The size of this task lies beyond the scope of this dissertation.

Therefore, this section focuses primarily upon possessor obviation. Possessor obviation not only fits the theme of the present study, which centers largely on possessive inflection, but it also represents a relatively straightforward grammatical condition that can be identified with high confidence within the CCLAS corpus.

Even so, obviation still presents another challenge. As the grammatical description in Chapter 2 explains, animate and inanimate nouns each bear obviative morphemes according to different rules that hinge upon possession. To review:

- The suffix *-h* is always required for nouns that are **animate** and **obviative**. Marking does not change depending upon whether the noun is a possessee. Number is neutralized for animate obviative nouns, which take no suffix for singular or plural.
- The suffix *-iyiu* marks nouns that are **inanimate**, **obviative**, and **singular**—but *not if* they are possessives of third persons, with co-reference between the subject and the possessor of the inanimate object.

Finally, the suffix *-h* presents its own special set of challenges when it comes to interpreting whether a child has produced an adult-like form of the morpheme. This *-h* conditions word-final “accent” in NEC, which manifests primarily as higher pitch and intensity (Dyck et al., 2006; Rose et al., 2010; Swain, 2008). In fact, generally the only time an NEC noun takes final accent is when it occurs with a final *-h*. In my experience reviewing child utterances with language consultants, when a noun token ends with a higher pitch, consultants are very likely to determine that a child has produced a noun with a final *-h* morpheme.

Two important factors complicate these judgments. For one, the children in the CCLAS corpus very often use English-style question intonation, so nouns at the end of an utterance often have rising pitch. Second, final accent seems also to be a child-like characteristic of early NEC speech. For example, Swain has determined that Ani’s “default [phonological] system places stress on the final syllable” (2008, p. 68)—for not just nouns, but for all word classes such as verbs, demonstratives, and pronouns. In other words, children acquiring NEC may tend to produce nouns with a high final pitch in general. Both of these factors mean that a child can produce a given noun with high final pitch, which will likely seem to be production of final *-h* to a language consultant, but there is no way for anyone to be sure if the morpheme is really “there” or if it is just an artifact of English question intonation or child-like prosody.

In the face of such complications, I defer to language consultants to determine to whether a child produces *-h* and whether that constitutes adult-like production. For examples I have not yet discussed with consultants, I listen for final high pitch. If I cannot detect final pitch, I listen for

other phonetic cues signaling the likely presence of *-h*, such as extended release of a final fricative, extra strong aspiration on the release of an oral stop, or the surfacing of [h] before the initial vowel of the following word. If such cues are present, I give the child credit for producing the suffix *-h* if the target requires it, because that is generally what a consultant would do. Nonetheless, the ensuing sections revisit this issue when it becomes particular germane.

In the face of these multi-faceted challenges, this section takes the following approach to the acquisition of obviative morphemes within the Final suffix position. For the animate obviative suffix *-h*, I will consider its overall distribution for each speaker, and then I will examine its usage in contexts of possessor obviation. For the inanimate suffix *-iyiu*, I will first consider its overall distribution irrespective of possession, and then I compare usage inside and outside of possessor obviation contexts.

9.4.2. The animate obviative suffix

This section analyzes the presence of the animate obviative suffix *-h* in adult input (§9.4.2.1.) and its acquisition by Ani (§9.4.2.2.), Daisy (§9.4.2.3.), and Billy (§9.4.2.4.).

9.4.2.1. The animate obviative suffix in adult input

This section examines the overall distribution of the animate obviative suffix *-h* (§9.4.2.1.1.) as well as its occurrence in obligatory contexts of possessor obviation (§9.4.2.1.2.).

9.4.2.1.1. Overall distribution of the suffix

Overall, adult input contains 142 total on-target tokens of the animate obviative suffix *-h*, with just two errors of commission and two errors of omission. Her animate obviative usage spans 50 total noun types: 42 NEC types and eight English types in mixed-language nouns. Of these, she uses 26 types with just one token of the suffix. Table 9.17 lays out the remaining 24 types. A few patterns emerge from this data.

First, the adult applies an animate obviative suffix to a subset of her overall animate noun production. Throughout the entire dataset she uses a total of 112 animate NEC noun types (1,042 total tokens), but the suffix appears with just 41 of these types (132 tokens). She commits the suffix incorrectly on only one inanimate type: *pîsimuhkân* ‘clock’. One noun type in particular stands out among the adult’s production: *kâwî* ‘mother’ has far more occurrences with the suffix

than any other type. As the next section shows, these word forms all occur in contexts of possessor obviation.

Table 9.17: Noun types w/ two or more 3' suffix tokens, in adult production

Type	Gloss	Category	Tokens w/ 3' suffix			Total
			Correct use	Om.	Comm.	
kâwî	mother	nad	18	1	0	19
utâpânâskw	car, vehicle	na	9	0	0	9
îyiyihkânish	figurine	na	8	0	0	8
mis	older sister	nad	8	0	0	8
piyichîs	pants	na	8	0	0	8
pîpî	baby	na	7	0	0	7
shîm	younger sibling	nad	7	0	0	7
awâshishihkânish	doll	na	6	0	0	6
uhkum	grandmother	nad	6	0	0	6
uhtâwî	father	nad	6	0	0	6
tûhwân	ball	na	4	0	0	4
chishâyâkushish	bear cub	na	3	0	0	3
kûn	snow	na	3	0	0	3
mishtikw	tree	na	3	0	0	3
nimâs	fish	na	3	0	0	3
skidoo	snowmobile	eng	3	0	0	3
wîchâwâkin	friend	na	3	0	0	3
âihkunâu	cake	na	2	0	0	2
auhkân	animal	na	2	0	0	2
bicycle	bicycle	eng	2	0	0	2
chishâyâkw	bear	na	2	0	0	2
chishtuhkin	door	na	2	0	0	2
friend	friend	eng	2	0	0	2
pîsimuhkân	clock	ni	0	0	2	2

Notes. w/ = with. 3' = animate obviative. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English.

9.4.2.1.2. Possessor obviation

The previous section concerns the overall appearance of the animate obviative *-h*, but this section examines inflection in the obligatory context of possessor obviation: Any animate noun with a third-person possessor requires the *-h* suffix. For example, the noun stem *kâwî* ‘mother’ in (20) takes no obviative marking with a second-person possessor, but the third-person possessor

Table 9.18: Noun types w/ 3' suffix token in possessor obviation, in adult production

Type	Gloss	Category	Correct tokens		Errors	Total
			PSR.OBV	Other		
kâwî	mother	nad	18	0	1	19
utâpânâskw	car, vehicle	na	6	3	0	9
îyiyihkânish	figurine	na	1	7	0	8
mis	older sister	nad	8	0	0	8
piyichîs	pants	na	7	1	0	8
pîpî	baby	na	6	1	0	7
shîm	younger sibling	nad	7	0	0	7
awâshishihkânish	doll	na	3	3	0	6
uhkum	grandmother	nad	6	0	0	6
uhtâwî	father	nad	6	0	0	6
tûhwân	ball	na	1	3	0	4
nimâs	fish	na	1	2	0	3
skidoo	snowmobile	eng	2	1	0	3
wîchâwâkin	friend	na	3	0	0	3
âihkunâu	cake	na	2	0	0	2
bicycle	bicycle	eng	1	1	0	2
friend	friend	eng	2	0	0	2
pîsimuhkân	clock	ni	0	0	2	2
atim	dog	na	1	0	0	1
aunt	aunt	eng	1	0	0	1
chiskutimâchâsiu	teacher	na	1	0	0	1
ishkwâshish	girl	na	1	0	0	1
mom/my	mother	eng	1	0	0	1
pitihuyâkin	fishing catch	na	1	0	0	1
sister	sister	eng	1	0	0	1
stâs	older brother	nad	1	0	0	1
tânis	daughter	nad	1	0	0	1
usisim	grandchild	nad	1	0	0	1

Notes. w/ = with. 3' = animate obviative. PSR.OBV = tokens within possessor obviation constructions. Other = tokens outside PSR.OBV constructions. na = animate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English.

9.4.2.2. The animate obviative suffix in Ani’s speech

This section examines Ani’s usage of the animate obviative *-h* across noun types and contexts (§9.4.2.2.1.), evaluates her productive usage of the morpheme (§9.4.2.2.2.), and discusses how this usage may connect to patterns in adult input (§9.4.2.2.3.),

9.4.2.2.1. *Overall distribution of the suffix*

Throughout her sampled data, Ani produces only seven noun types (eight total tokens) relevant to the animate obviative suffix. Table 9.19 lays out these types and breaks her tokens into those inside and outside possessor obviation contexts. Despite a dearth of tokens, Ani’s usage shows one clear pattern: All of her animate obviative tokens, and even her two errors, take place in the context of possessor obviation. The next section explores each of these productions.

Table 9.19: Noun types w/ 3’ suffix tokens in possessor obviation, in Ani’s production

Type	Gloss	Category	Correct tokens		Errors	Total
			PSR.OBV	Other		
friend *	friend	eng	2	0	0	2
Barbie	Barbie	eng	1	0	0	1
pencil	pencil	eng	1	0	0	1
piyichîs *	pants	na	0	0	1	1
pûshî	cat	na	0	0	1	1
scissors	scissors	eng	1	0	0	1
uhtâwî *	father	nad	1	0	0	1

Notes. w/ = with. 3’ = animate obviative. PSR.OBV = tokens within possessor obviation constructions. Other = tokens outside PSR.OBV constructions. na = animate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. * = type appears with the 3’ suffix in adult input.

9.4.2.2.2. *Productivity of the animate obviative suffix*

Ani uses an animate obviative *-h*, or produces a possessor obviation context requiring the suffix, in five out of her 15 recording sessions sampled for the present study.

Her first token comes at age 2;03.24 (21). Here she omits the required person prefix as well as the *-h* on the demonstrative, but language consultant Margaret judges that Ani indeed produces the obligatory *-h* on the noun (REH1-010, 44:29). Given the other missing obligatory morphology, Ani’s seemingly adult-like production of the obviative suffix may reflect the fact that she produces final accent by default (§9.3.2.2.). However, this study defers to Margaret and affords Ani the benefit of the doubt in considering this token as on target for the animate obviative *-h*.

(21) Ĭσḷ" ▷"Ĉ:Δ"x
Mâniyâh uhtâwîh.
Target: mâni-yâh Ø-uhtâwî-h
Actual: mâni-yâ*Ø Ø-uhtâwî-h
 DEM.DIST-3' 3-father-3'
 'That is his father.' (Ani, A1.06, 2;03.24, 06:59)

Ani's next two obligatory contexts for the animate obviative suffix come at age 2;07.06 (22) and 3;04.09 (23), and she omits the suffix with both tokens. Each of these tokens comes during a period in her development where she seems to omit all possessive inflection from her nouns.

In (23), the demonstrative is particularly interesting, because it should also index the obviative status of the target *upûshîsh-h* 'her/his little kitten'. However, I am not certain if she produces the fully adult-like form of *aniyâh* 'that (3')', because I could not check it with a consultant. Nonetheless, Ani definitely produces a two-syllable [ənjə] and is credited with an on-target form.

(22) ɔʒ ▷ʌɾʔɾʌ"
Dora upiyichîsimh
Target: Dora u-piyichîs-im-h
Actual: Dora *Ø-piyichîs-*Ø-*Ø
 name 3-pants-POSS-3'
 'Dora's pants' (Ani, 2;07.06, A1.12, 00:13)

(23) ɟʌʌʌ <σḷ" ▷>ʃᵐ" σĬ ɟʌʌʌx
Mommy aniyâh upûshîsh-h nimâ Mommy.
Target: mommy ani-yâh u-pûshî-sh-h nimâ mommy
Actual: mommy ani-yâh Ø-pûshî-sh-Ø nimâ mommy
 name DEM.DIST-3' 3-cat-DIM-3' NEG name
 'That is Mommy's little kitten, right, Mommy?'' (Ani, 3;04.09, A1.26, 11:06)

Ani's next context for the animate obviative *-h* comes at age 4;00.13 (24). Here she again omits the required prefix but seems to produce the obligatory suffixes on *ubarbiemh* 'her/his Barbie' (Margaret, REH1-015, 1:13:35).

- (24) ▷<^ε∧∇^{LII}
ubarbiemh
u-Barbie-m-h
3-name-POSS-AN.OBV
'her/his Barbie' (Ani, A1.35, 4;00.13, 10:26)

In the next consecutive recording session at age 4;03.07, Ani has on-target animate obviative suffix tokens with another three English noun types: *ufriendimh* 'her/his friend' (two tokens), *upencilimh* 'her/his pencil', and *uscissorimh* 'her/his scissors'. At this age point, Ani satisfies the criteria for demonstrating productive usage of animate obviative *-h*: She has used the morpheme on four different noun types across two sessions, with no errors, and she produces contrasting word forms with bare stems for *Barbie* (four tokens), *pencil* (four tokens), and *scissors* (two tokens).

9.4.2.2.3. *Possible connections to patterns in adult input*

As with the PL suffix, Ani's level of production of animate obviative *-h* makes it difficult to draw connections with the input. All of Ani's *-h* usage occurs in contexts of possessor obviation, which also represents the majority of adult production. However, Ani's only clearly on-target productions of the suffix come with English noun types. Although *friend* occurs with such marking in the input (Table 9.18), Ani's other three English types with *-h* (*Barbie*, *pencil*, and *scissors*) do not.

9.4.2.2.4. *Summary*

Ani uses few tokens of the animate obviative suffix, but all of her productive usage takes place in possessor obviation contexts. She seems to omit *-h* until age 4;00.13, as part of her global omission of possessive morphology, but she demonstrates productive usage of the suffix by age 4;03.07.

9.4.2.3. The animate obviative suffix in Daisy’s speech

This section analyzes Daisy’s distribution of animate obviative *-h* across noun types and contexts (§9.4.2.3.1.), discusses her productive acquisition of the morpheme (§9.4.2.3.2.), and addresses how her usage may relate to patterns in child-directed speech (§9.4.2.3.3.).

9.4.2.3.1. *Overall distribution of the suffix*

Across her sampled data, Daisy produces 75 on-target tokens of the animate obviative *-h*, with four errors of omission and one error of commission. As with her distribution of the PL suffix, this usage of the animate obviative applies to a small subset of her total noun types: She uses *-h* with 24/114 NEC types (21.05 percent) and with 11/44 English types (25.00 percent). Table 9.20 tallies the noun types that occur with more than one token of the suffix, and Table 9.21 lists the types with just one suffix token.

Table 9.20: Noun types w/ two or more 3’ suffix tokens, in Daisy’s speech

Type	Gloss	Category	Tokens w/ 3’ suffix			Total
			Correct use	Om.	Comm.	
kâwî *	mother	nad	12	1	0	13
uhtâwî *	father	nad	5	1	0	6
awâshish *	child	na	5	0	0	5
pîpî *	baby	na	5	0	0	5
pwâchikî *	boogeyman	na	5	0	0	5
uhkum *	grandmother	nad	5	0	0	5
friend *	friend	eng	3	0	0	3
utâpânâskw *	car, vehicle	na	3	0	0	3
wîchâwâkin *	friend	na	3	0	0	3
cake	cake	eng	2	0	0	2
clock	clock	eng	2	0	0	2
cow	cow	eng	2	0	0	2
ichishî	stomach	nad	2	0	0	2
ishkwâshish *	girl	na	2	0	0	2
shîm *	younger sibling	nad	2	0	0	2

Notes. w/ = with. 3’ = animate obviative. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with a 3’ suffix in adult input.

Table 9.21: Noun types w/ one 3' suffix token, in Daisy's speech

Type	Gloss	Category	Tokens w/ 3' suffix			Total
			Correct use	Om.	Comm.	
atihkw *	caribou	na	1	0	0	1
atim *	dog	na	1	0	0	1
chîhchîkw	wart	na	0	1	0	1
chipihuwâsiu *	policeman	na	1	0	0	1
chiskutimâchâsiu *	teacher	na	1	0	0	1
door	door	eng	1	0	0	1
Honda	Honda	eng	1	0	0	1
ichikum	phlegm, mucus	nad	1	0	0	1
nimâs *	fish	na	1	0	0	1
nisk *	goose	na	1	0	0	1
nîtukuyiniskwâu	nurse	na	1	0	0	1
nûtâpitâsiu *	dentist	na	1	0	0	1
pitihuyâkin *	fishing catch	na	1	0	0	1
pûshî	cat	na	1	0	0	1
skidoo *	snowmobile	eng	1	0	0	1
snowman	snowman	eng	1	0	0	1
stâs *	older brother	nad	0	1	0	1
train	train	eng	0	0	1	1
tree	tree	eng	1	0	0	1
uncle	uncle	eng	1	0	0	1

Notes. w/ = with. 3' = animate obviative. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with a 3' suffix in adult input.

9.4.2.3.2. Possessor obviation

Of Daisy's 35 noun types with tokens of animate obviative *-h*, 18 types have tokens in contexts of possessor obviation (Table 9.22).

Table 9.22: Noun types w/ 3' suffix tokens in possessor obviation, in Daisy's speech

Type	Gloss	Category	Correct tokens			Total
			PSR.OBV	Other	Errors	
kâwî *	mother	nad	10	2	1	13
uhtâwî *	father	nad	4	1	1	6
awâshish	child	na	3	2	0	5
pîpî *	baby	na	2	3	0	5
uhkum *	grandmother	nad	4	1	0	5
friend *	friend	eng	3	0	0	3
utâpânâskw *	car, vehicle	na	2	1	0	3
wîchâwâkin *	friend	na	3	0	0	3
cake	cake	eng	1	1	0	2
clock	clock	eng	2	0	0	2
ichishî	stomach	nad	2	0	0	2
ishkwâshish *	girl	na	2	0	0	2
shîm *	younger sibling	nad	2	0	0	2
atim *	dog	na	1	0	0	1
chiskutimâchâsiu *	teacher	na	1	0	0	1
Honda	Honda	eng	1	0	0	1
ichikum	phlegm, mucus	nad	1	0	0	1
uncle	uncle	eng	1	0	0	1

Notes. w/ = with. 3' = animate obviative. PSR.OBV = tokens within possessor obviation constructions. Other = tokens outside PSR.OBV constructions. na = animate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type also occurs in PSR.OBV constructions in adult input.

9.4.2.3.3. Productivity of the animate obviative suffix

Daisy uses or has conditions requiring the usage of animate obviative *-h* in all of her 14 recording sessions sampled for the present study (Table 9.23).

Table 9.23: Daisy's 3' suffix tokens, per recording session

Session	Child age	3' tokens			Total
		Correct usage	Om.	Comm.	
B1.01	3;08.10	4	1	0	5
B1.02	3;09.01	3	0	0	3
B1.03	3;09.22	6	0	0	6
B1.04	3;11.11	7	0	0	7
B1.05	4;00.00	1	0	0	1
B1.08	4;02.06	6	2	0	8
B1.11	4;04.04	16	0	0	16
B1.14	4;06.02	2	0	0	2
B1.17	4;07.28	1	0	0	1
B1.20	4;10.03	9	0	1	10
B1.24	5;00.20	11	0	0	11
B1.27	5;04.12	0	1	0	1
B1.30	5;07.03	6	0	0	6
B1.31	5;10.02	3	0	0	3
Total		75	4	1	80

Notes. w/ = with. 3' = animate obviative. Om. = errors of omission. Comm. = errors of commission.

In her first recording session at age 3;08.10, Daisy uses the suffix with multiple types. She has one adult-like token of NEC noun types *nûâpîtâsiu* 'dentist' and *pîpî* 'baby' (25) (Margaret, REH1-012, 1:07:09). She also has on-target usage of *-h* with one token of English types *door* (26) and *skidoo* (REH1-012, 31:58). However, Daisy has one error of omission with *stâs* 'older brother' (27) (REH1-012, 1:21:02).

- (25) ▷ΛΛΓ^{uII}
 upîpîmish-h
 u-pîpî-m-ish-h
 u-pîpî-m-ish-h
 3-baby-POSS-DIM-3'
 'her little baby' (Daisy, 3;08.10, B1.01, 23:29)

(26) ▷Ċ" < Δ"▷Ŋ<ĭ° ǰ"ᶜ_x
 Utâh â ihtutiwâu doorh.
 Target: u-tâh â ihtutiwâu door-h
 Actual: u-tâh â *ihtutim door-h
 DEM.PXL-LOC Q s/he.does.it door-3'
 'Is he doing this to the door?' (Daisy, 3;08.10, B1.01, 06:58)

(27) ▷Ŋ'Ċ"ᶜ <↳Λ^ᶜ
 utistâsh ayâpich
 Target: uti-stâs-h ayâpich
 Actual: uti-stâs-*∅ ayâpich
 3-older.brother-3' still
 'also his brother' (Daisy, 3;08.10, B1.01, 21:48)

As with Ani's speech (§9.3.2.2.), it is no straightforward affair to determine the adult-like presence of *-h* in Daisy's usage: The phonetic realization of *-h* as final accent overlaps with confounds such as English-like question marking and child-like patterns of prosody (§9.4.1.). With (20), for instance, Margaret judges that Daisy produces final *-h* with English *door*, which fits the way an adult would inflect the animate NEC analog *chishtuhkin* 'door' (REH1-011, 1:15:39).

However, Daisy's verb in (20) reveals a complication for evaluating her production. She produces a verb form that should take an inanimate object, *ihutim* 's/he does it (to it)'. The adult-like form should be *ihutiwâu* 's/he does it (to her/him)' to agree with the animate status of *door* (REH1-011, 1:12:37/1:16:46). In this situation it is impossible to discern the exact form of Daisy's error, because one of two things could be happening:

1. She may have correctly categorized *door* as animate and thus used the animate obviative suffix correctly. Here the error lies only with her choice of verb form.
2. She may have incorrectly categorized *door* as inanimate but therefore used the correct verb to agree with that categorization. Here the error may lie with using animate obviative *-h* on *door* as an error of commission. However, Daisy may actually have no

such production of the suffix at all, and it may simply be her rising pitch that makes it *seem* she has produced a final *-h* morpheme. Daisy’s rising pitch with *door* may quite easily reflect her usage of English-like question intonation.

The present study focuses only on nominal inflection, and so investigating the intricacies of animacy, number, and obviation with verbal morphology must be reserved for future investigation. Additionally, I must reiterate that the present study gives children the benefit of the doubt, and I defer to the judgments of language consultants: Daisy’s final high pitch on the noun *door* is accepted as adult-like *-h* for (20) because Margaret says so.

In Daisy’s next recording session at 3;09.01, she has one adult-like token of animate obviative *-h* each with NEC noun types *atihkw* ‘caribou’, *nimâs* ‘fish’, and *pitihuyâkin* ‘fishing catch’. Margaret confirms the production of *-h* with each token (REH1-025, 16:18, 1:58, 2:47). At this age point, she satisfies the conditions for demonstrating productive usage of *-h*. She has used it correctly across two consecutive sessions with seven different noun types, with an accuracy rate above 80 percent, and she produces three of these types in contrasting word forms without animate obviative *-h*:

- bare stem *door* (two tokens) and inflected form *doors* (one token)
- bare stem *nimâs* ‘fish’ (one token)
- bare stem *skidoo* (one token)

For the remainder of her recording sessions after age 3;09.01, Daisy employs robust and adult-like usage of the suffix *-h* across 25 additional noun types (64 total tokens). This includes 17 NEC types (51 tokens) and 8 English types (13 tokens).

Daisy has only four more errors, each of which provides another window into her aptitude with animate obviative marking. She has one error with *ukâwîh* ‘her/his mother’, a word form she produces correctly in ten other tokens; one with *uhtâwîh* ‘her/his father’, a word form she produces correctly in four other tokens; and an error with her one and only token of *uchîhchîkwimh* ‘her/his wart(s)’. Her sole error of commission comes in (28), which results from an animacy mistake. Daisy categorizes English *train* as animate, even though the NEC analog

utâpân ‘train’ is inanimate (Junker, MacKenzie, Bobbish-Salt, et al., 2012). Here her usage of final *-h* would be adult-like if *train* were animate.

(28) Δ"∩dσʔ° ·<ᶜᶜ <σĊ" ˘σΔσʔ°x
 Ihtikuniyiu wâsh anitâh trainiyiu.

Target	Ihtikuniyiu	wash	ani-tâh	train-iyiu
	It(0').is	EMPH	DEM.DIST-LOC	train-0'
Actual:	*ihtâyiuh	wâsh	ani-tâh	train-*h
	*It(3').is	EMPH	DEM.DIST-LOC	train-*3'

‘There is a train in there.’ (Daisy, 4;10.03, B1.20, 18:38)

9.4.2.3.4. *Possible connections to patterns in adult input*

A few patterns may tie Daisy’s usage of animate obviative *-h* to what she encounters in child-directed speech.

A majority of Daisy’s noun types with *-h* (Tables 9.20–21) also occur with the suffix in adult input: 21/35 types (60.00 percent). All of Daisy’s noun types with three or more token of *-h* also appear with the suffix in child-directed speech (Table 9.20). In other words, Daisy more frequently uses the animate obviative with types she encounters bearing the suffix in the input. This includes *kâwî* ‘mother’, which is the most frequent type with *-h* for both Daisy and the adult.

Possessor obviation conditions roughly the proportion of animate obviative usage for Daisy and the adult: 45/75 (60.00 percent) of Daisy on-target tokens of *-h* occur in contexts of possessor obviation. Table 9.22 also shows that most of the noun types Daisy that employs here (11/18, 61.11 percent) also occur in possessor obviation within child-directed speech (Table 9.18). Daisy produces *-h* with only two of adult’s nine noun types that have contrasting forms inside and outside of possessor obviation: *pîpî* ‘baby’ and *utâpânâskw* ‘car, vehicle’. However, both of these types are among the most frequent for both speakers in Table 9.22 and Table 9.18, so perhaps they do indeed play a role in helping Daisy figure out the mechanics of obviation.

However, any connection between Daisy and the adult’s speech changes between categories of noun types. Across Tables 9.20–21, 19/24 (79.17 percent) of Daisy’s NEC types but only 2/11 (18.18 percent) of her English types also occur with *-h* in child-directed speech. She tends to use

the animate obviative with NEC nouns she encounters in child-directed speech, but her application of the suffix with English nouns seems to testify more directly to her own creative mastery of NEC inflection.

9.4.2.3.5. *Summary*

Like the adult, Daisy applies the animate obviative suffix to a subset of noun types, and possessor obviation plays a prominent role in her production of *-h*. Although methodological complications in identifying adult-like *-h* must be acknowledged, Daisy uses the suffix from her first recording session and demonstrates productive usage by age 3;09.01. Daisy's production of *-h* with NEC noun types largely overlaps with adult usage, but once again, the child's production of English noun types serves as a testament to her mastery of NEC inflection.

9.4.2.4. The animate obviative suffix in Billy's speech

This section examines Billy's overall distribution of animate obviative *-h* (§9.4.2.4.1.), evaluates his productive usage of the suffix (§9.4.2.4.1.), and considers how his usage may relate to patterns in the input (§9.4.2.4.1.).

9.4.2.4.1. *Overall distribution of the suffix*

Billy produces 29 total adult-like animate obviative suffix tokens, which is fewer than Daisy but more than Ani. He has no errors, which may reflect the fact that his sample starts at a later age point than the data for the other two children.

Billy distributes his animate obviative *-h* usage across 18 different noun types—12 NEC types (18 tokens) and six English types (11 tokens) (Table 9.24). Compared to Daisy and the adult, Billy has relatively few noun types with more than one token of the suffix.

Table 9.24: Noun types w/ 3' suffix tokens, in Billy's speech

Type	Gloss	Category	Tokens w/ 3' suffix			Total
			Correct use	Om.	Comm.	
pwâchikî *	boogeyman	na	4	0	0	4
skidoo *	snowmobile	eng	3	0	0	3
ânishkiwishiu	great-grandparent	na	2	0	0	2
brother	brother	eng	2	0	0	2
friend *	friend	eng	2	0	0	2
mom(my) *	mother	eng	2	0	0	2
pîpî *	baby	na	2	0	0	2
shîm *	younger sibling	nad	2	0	0	2
awâshish *	child	na	1	0	0	1
car	car	eng	1	0	0	1
chiskutimâchâsiu *	teacher	na	1	0	0	1
ishkwâshish *	girl	na	1	0	0	1
kâwî *	mother	nad	1	0	0	1
mis *	older sister	nad	1	0	0	1
piyâshîsh	bird	na	1	0	0	1
piyichîs *	pants	na	1	0	0	1
sled	sled	eng	1	0	0	1
stâs *	older brother	nad	1	0	0	1

Notes. w/ = with. 3' = animate obviative. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with a 3' suffix in adult input.

9.4.2.4.2. Possessor obviation

A large majority of Billy's 18 noun types with tokens of the animate obviative suffix take such marking in contexts of possessor obviation (13/18 types, 72.22 percent) (Table 9.25).

Table 9.25: Noun types w/ 3' suffix tokens in possessor obviation, in Billy's speech

Type	Gloss	Category	Correct tokens		Errors	Total
			PSR.OBV	Other		
skidoo *	snowmobile	eng	2	1	0	3
brother	brother	eng	2	0	0	2
friend *	friend	eng	2	0	0	2
mom(my) *	mother	eng	2	0	0	2
pîpî *	baby	na	2	0	0	2
shîm *	younger sibling	nad	2	0	0	2
car	car	eng	1	0	0	1
chiskutimâchâsiu *	teacher	na	1	0	0	1
kâwî *	mother	nad	1	0	0	1
mis *	older sister	nad	1	0	0	1
piyichîs *	pants	na	1	0	0	1
sled	sled	eng	1	0	0	1
stâs *	older brother	nad	1	0	0	1

Notes. w/ = with. 3' = animate obviative. PSR.OBV = tokens within possessor obviation constructions. Other = tokens outside PSR.OBV constructions. na = animate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type also occurs in PSR.OBV constructions in adult input.

9.4.2.4.3. Productivity of the animate obviative suffix

Billy produces animate obviative *-h* suffix token in all but one of his 11 recording sessions (Table 9.26).

Billy's first usage of the animate obviative *-h* comes with one token of *pwâchikî* 'boogeyman' in his second recording session at age 4;06.08 (29). He has another token with *kâwi* 'mother' in the next session at 4;07.27 (30). At this age point, though, he has not produced both noun types in contrasting forms without *-h*.

(29) <ŕŕ" <î Δ"Ĉŕ"ŕ" >Ĉ"x

Pwâchikîh â ihtâyich-h utâh.

pwâchikî-h â ihtâyich-h utâh
 boogeyman-3' Q that.are DEM.PXL-LOC

'Where are there boogeymen like this?' (Billy, 4;06.08, B3.04, 24:21)

- (30) ᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲ_x
 Chîhuhtinâkû daycare ukâwih.
 chîhuhtinâkû daycare u-kâwi-h
 s/he(OBV).took.her/him daycare 3-mother-3'
 'His mother went to get him at daycare.' (Billy, 4;07.27, B3.06, 33:57)

Table 9.26: Billy's 3' suffix tokens, per recording session

Session	Child age	3' tokens			Total
		Correct usage	Om.	Comm.	
B3.04	4;06.08	1	0	0	1
B3.06	4;07.27	1	0	0	1
B3.07	4;08.21	2	0	0	2
B3.09	4;10.08	2	0	0	2
B3.11	5;00.13	8	0	0	8
B3.13	5;02.12	1	0	0	1
B3.14	5;03.22	1	0	0	1
B3.15	5;05.00	4	0	0	4
B3.17	5;06.27	1	0	0	1
B3.18	5;10.06	8	0	0	8
Total		29	0	0	29

Notes. w/ = with. 3' = animate obviative. Om. = errors of omission. Comm. = errors of commission.

In the next session at 4;08.21, Billy has one token each with another two noun types: *pîpî* 'baby' (31) and *mommy* (32). His production of *umommymh* in (32) seems particularly creative, because his two adult interlocutors laugh with surprise right after he says it.

- (31) ᑲᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲ^o
 uchûchûmyiu upîpîmish-h
 Target: u-chûchû-m-yiu u-pîpî-m-ish-h
 Actual: u-chûchû-∅-yiu u-pîpî-m-ish-h
 3-bottle-POSS-OBV.PSR 3-baby-DIM-3'
 'her bottle ... her little baby's (bottle)' (Billy, 4;08.21, B3.07, 02:10)

- (32) ▷ ǀ^{LL}ǀ^{LI}
 umommymh
 u-mommy-m-h
 3-mother-POSS-3'
 'her/his mommy' (Billy, 4;08.21, B3.07, 13:34)

In the next session at 4;10.08, Billy has two adult-like tokens of *-h* with the English noun type *skidoo*, but he still does not have enough contrasting word forms of his nouns types to demonstrate productivity. In the following session at 5;00.13, he satisfies the criteria for productive usage. Here he has adult-like application of animate obviative *-h* with six noun types: NEC *chiskutimâchâsiu* 'teacher', *ishkwâshish* 'girl', *pwâchikî* 'boogeyman' (two tokens), and *stâs* '(older) brother', as well as English *friend* (two tokens) and *skidoo*. By this age point, he has used *-h* with 10 different noun types across multiple consecutive recording sessions, with no errors, and he has also produced six of these types in contrasting word forms without the suffix.

9.4.2.4.4. Possible connections to patterns in adult input

With his level of production, it is hard to draw clear throughlines between Billy's usage of the animate obviative suffix *-h* and patterns in child-directed speech.

One pattern is that Billy tends to use animate obviative marking with noun types that also take the suffix *-h* in child-directed speech (13/18, 72.22 percent). Most of Billy's types that take more than one suffix token (4/6 types, 66.67 percent) also occur with the suffix in the input. However, the noun type *kâwî* 'mother' occurs only once with the suffix in Billy's speech, despite its prominence in the input (as well as Daisy's usage).

Possessor obviation also plays a prominent role in conditioning Billy's obviative usage: 19/29 of his total *-h* tokens (65.52 percent) appear in contexts of possessor obviation. This closely resembles the proportion in both adult input (90/142 tokens, 63.38 percent) and Daisy's speech (45/75 tokens, 60.00 percent).

To a lesser extent than in Daisy's speech, connections between Billy and the adult's speech shift between categories of noun types. 10/12 (83.33 percent) of Billy's NEC types with an animate obviative suffix token also occur with such marking in adult input. Just 3/6 (50.00 percent) of his English types also appear with an obviative in child-directed speech.

9.4.2.4.5. *Summary*

Like the adult and Daisy, Billy applies the animate obviative suffix *-h* across a variety of noun types but only to a subset of the total types he produces throughout his data sample. Possessor obviation conditions his application of the suffix at about the same rate for the adult and Daisy as well. Billy demonstrates productive usage of the suffix by age 5;00.13, which is quite a bit later than Daisy, but my suspicion is that some of this gap lies with inter-child differences in personality: Billy is much quieter and shier than Daisy, and he provides fewer opportunities to assess his acquisition. In another similarity to Daisy, Billy tends to apply the suffix to NEC noun types that take such marking in adult input, and his usage of English types with *-h* seems to be more indicative of his inflectional mastery.

9.4.3. The inanimate obviative suffix

The previous section (§9.4.2.) focuses on marking for animate obviative nouns, which consistently bear the suffix *-h*. As the grammatical description in Chapter 2 and §9.4.1 explain, though, marking for inanimate obviative nouns is more dependent upon grammatical context: The suffix *-iyiu* marks nouns that are inanimate, obviative, and singular—but this marking is **overt** in some contexts and **covert** in others.

As a brief review, the noun *chîmân* ‘boat’ carries the suffix *-iyiu* and is overtly marked obviative in (33). The agreeing demonstrative also overtly indexes the obviative status of the noun. But in (34) the suffix *-iyiu* is not allowed because *chîmân* has a third-person possessor, and there is coreference between the subject and the possessor. Nonetheless, *chîmân* remains covertly obviative, with its obviative status overtly indexed on the agreeing demonstrative.

- (33) Δ̂ʔ <σ̂ʔ ʔ̂"Δ̂"ʃ"Ĉ° ʔ̂Ĺσ̂ʔ°x
 Wîyi aniyâ chîhushihtâu chîmâniyu.
 wîyi ani-yâ chîhushihtâu chîmân-iyiu
 3 DEM.DIST-0' that.s/he.made boat-0'
 ‘He made the boat himself.’ (Adult, 5;02.12, B3.13, 07:50)

- (34) < < i e > > i > > r l e x
 Awân uyâ uchîmân.
 awân u-yâ u-chîmân
 who DEM.PXL-0' 3-boat
 ‘Whose boat is this?’ (Adult, 4;00.00, B1.05, 33:04)

The following sections explore the presence of inanimate obviative singular marking in the input (§9.4.3.1.) as well as the acquisition of such marking by Ani (§9.4.3.2.), Daisy (§9.4.3.3.), and Billy (§9.4.3.4.).

9.4.3.1. The inanimate obviative suffix in adult input

This section addresses the overall presence of inanimate obviative singular marking in adult input (§9.4.3.1.1.) as well as its distribution inside and outside contexts of possessor obviation (§9.4.3.1.2.).

9.4.3.1.1. *Overall distribution of the suffix*

Child-directed speech in the dataset contains 110 total contexts with an inanimate obviative singular noun. Throughout these 110 contexts, the adult uses 44 total noun types: 39 NEC types (103 tokens) and five English types (seven tokens). She has no errors of omission or commission. Table 9.27 lists the noun types with more than one token, and Table 9.28 lists those with just one token. Each table categorizes tokens with overt or covert marking.

Table 9.27–9.28 evince an important pattern: Only a minority of noun tokens in the input that are grammatically inanimate, obviative, and singular actually require **overt** *-iyiu* (35/110 tokens, 31.82 percent). Children most often encounter nouns that are covertly obviative. Only 8/44 (18.18 percent) noun types occur with more than three tokens, so children have relatively few chances to contrast word forms of a given noun type in overt and covert marking contexts.

Of course, possessor obviation represents the crux of the suffix’s distribution: Children need to see the pattern that only inanimate singular noun with third-person possessors in coreference constructions do not take *-iyiu*.

Table 9.27: Noun types w/ two or more 0' tokens, in adult speech

Type	Gloss	Category	0' noun tokens				Total
			Overt	Covert	Om.	Comm.	
akuhp	coat	ni	2	10	0	0	12
pichiwiyan	shirt	ni	1	7	0	0	8
îch	home	nid	0	7	0	0	7
shtikwân	head	nid	2	5	0	0	7
ashtutin	hat	ni	2	3	0	0	5
chîmân	boat	ni	1	4	0	0	5
mîchim	food	ni	1	4	0	0	5
îwit	bag	nid	0	4	0	0	4
âshtimihkw	face	nid	0	3	0	0	3
mâmâpisun	swing	ni	1	2	0	0	3
mâtiwâkin	toy, game	ni	3	0	0	0	3
nipâwin	bed	ni	0	3	0	0	3
tâhtipiwin	chair	ni	1	2	0	0	3
wâskâhîkin	house	ni	2	1	0	0	3
âsiyân	diaper	ni	0	2	0	0	2
jello	jello	eng	2	0	0	0	2
juice	juice	eng	2	0	0	0	2
minihkwâkin	cup	ni	1	1	0	0	2
mischisin	shoe	ni	0	2	0	0	2
misinihîkin	book	ni	1	1	0	0	2
nipî	water	ni	2	0	0	0	2
tihchî	hand	nid	0	2	0	0	2
wâpuyân	blanket	ni	0	2	0	0	2

Notes. w/ = with. 0' = inanimate obviative singular. Overt = tokens w/ the suffix *-iyiu*. Covert = tokens correctly without *-iyiu*. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English.

Table 9.28: Noun types w/ one 0' token, in adult speech

Type	Gloss	Category	0' noun tokens				Total
			Overt	Covert	Om.	Comm.	
aschî	planet	ni	1	0	0	0	1
chûchû	bottle	ni	0	1	0	0	1
dessert	dessert	eng	1	0	0	0	1
heart	heart	eng	1	0	0	0	1
htiwikî	ear	nid	0	1	0	0	1
îpit	tooth	nid	0	1	0	0	1
ishkutâu	fire, battery	ni	1	0	0	0	1
kânichî	sweater	ni	0	1	0	0	1
Kraft Dinner	Kraft Dinner	eng	1	0	0	0	1
mihtukân	winter lodge	ni	1	0	0	0	1
misinihîkinâchin	paper	ni	1	0	0	0	1
mûhkumân	knife	ni	1	0	0	0	1
pâshchishikin	small gun	ni	0	1	0	0	1
pîywâshikin	sock	ni	0	1	0	0	1
skât	leg	nid	0	1	0	0	1
skut	nose	nid	0	1	0	0	1
tâih	heart	nid	0	1	0	0	1
tî	tea	ni	1	0	0	0	1
tîpwât	teapot	ni	1	0	0	0	1
tun	mouth	nid	0	1	0	0	1
yâkâu	sand	ni	1	0	0	0	1

Notes. w/ = with. 0' = inanimate obviative singular. Overt = tokens w/ the suffix *-iyiu*. Covert = tokens correctly without *-iyiu*. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English.

9.4.3.1.2. Possessor obviation

Table 9.29 tallies the 26 noun types that occur in contexts of possessor obviation. As with animate nouns (§9.4.2.1.2), this obligatory context plays a prominent role in the obviation of inanimate singular nouns: 75/110 (68.18 percent) of such tokens are obviative because of possessor obviation. This proportion is remarkably similar to the 63.38 percent of the adult’s animate obviative noun tokens conditioned by possessor obviation (§9.4.2.1.2).

Table 9.29: Noun types w/ 0' tokens in possessor obviation, in adult production

Type	Gloss	Category	Correct tokens		Errors	Total
			PSR.OBV	Overt		
akuhp	coat	ni	10	2	0	12
pichiwiyan	shirt	ni	7	1	0	8
îch	home	nid	7	0	0	7
shtikwân	head	nid	5	2	0	7
ashtutin	hat	ni	3	2	0	5
chîmân	boat	ni	4	1	0	5
mîchim	food	ni	4	1	0	5
îwit	bag	nid	4	0	0	4
âshtimihkw	face	nid	3	0	0	3
mâmâpisun	swing	ni	2	1	0	3
nipâwin	bed	ni	3	0	0	3
tâhtipiwin	chair	ni	2	1	0	3
wâskâhîkin	house	ni	1	2	0	3
âsiyan	diaper	ni	2	0	0	2
minihkwâkin	cup	ni	1	1	0	2
mischisin	shoe	ni	2	0	0	2
misinihîkin	book	ni	1	1	0	2
tihchî	hand	nid	2	0	0	2
wâpuyân	blanket	ni	2	0	0	2
chûchû	bottle	ni	1	0	0	1
htiwikî	ear	nid	1	0	0	1
îpit	tooth	nid	1	0	0	1
kânichî	sweater	ni	1	0	0	1
pâshchishikin	small gun	ni	1	0	0	1
pîywâshikin	sock	ni	1	0	0	1
skât	leg	nid	1	0	0	1

Notes. w/ = with. 0' = inanimate obviative singular. PSR.OBV = tokens within possessor obviation constructions, where 0' is without *-iyiu*. Overt = tokens w/ the suffix *-iyiu*. na = animate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English.

For a final bit of perspective, Table 9.30 provides the noun types that have tokens with and without *-iyiu*. All of the latter are attributed to possessor obviation. Just 11 noun types have tokens in each context, and so these types may play a particularly crucial role in providing children with evidence to identify and extrapolate the principles behind marking inanimate obviative singular nouns.

Table 9.30: Noun types w/ overt and covert 0' tokens, in adult speech

Type	Gloss	Category	0' noun tokens				Total
			Overt	Covert	Om.	Comm.	
akuhp	coat	ni	10	2	0	0	12
pichiwiwân	shirt	ni	7	1	0	0	8
shtikwân	head	nid	5	2	0	0	7
ashtutin	hat	ni	3	2	0	0	5
chîmân	boat	ni	4	1	0	0	5
mîchim	food	ni	4	1	0	0	5
mâmâpisun	swing	ni	2	1	0	0	3
tâhtipiwin	chair	ni	2	1	0	0	3
wâskâhîkin	house	ni	1	2	0	0	3
minihkwâkin	cup	ni	1	1	0	0	2
misinihîkin	book	ni	1	1	0	0	2

Notes. w/ = with. 0' = inanimate obviative singular. Overt = tokens w/ the suffix *-iyiu*. Covert = tokens correctly without *-iyiu*. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English.

9.4.3.1.3. Summary

The input contains more than 100 contexts where a noun is grammatically inanimate, obviative, and singular—but only a minority of tokens actually bear a suffix indexing these features. Almost 70 percent of tokens occur in possessor obviation, where such overt marking is prohibited. The adult has a small number of noun types with tokens inside and outside of possessor obviation, so children have relatively few opportunities to contrast a given type with overt and covert marking.

9.4.3.2. The inanimate obviative suffix in Ani’s speech

This section briefly describes Ani’s usage of the inanimate obviative suffix. It discusses her relatively few contexts for the suffix (§9.4.3.2.1.) and considers her productivity (§9.4.3.2.2).

9.4.3.2.1. Overall distribution of the suffix

Ani has only nine total noun tokens that are grammatically inanimate, obviative, and singular. Only one token requires overt marking, and the rest all occur in contexts of possessor obviation. These tokens are tallied in Table 9.31, and types marked with an asterisk also appear in the input with inanimate obviative singular tokens.

Table 9.31: Noun types w/ 0' tokens in possessor obviation, in Ani's speech

Type	Gloss	Category	Correct tokens		Errors		Total
			PSR.OBV	Overt	Om.	Comm.	
chûchû *	bottle	ni	3	0	0	0	3
bed	bed	eng	2	0	0	0	2
chair	chair	eng	2	0	0	0	2
akuhp *	coat	ni	0	1	0	0	1
purse	purse	eng	1	0	0	0	1

Notes. w/ = with. 0' = inanimate obviative singular. PSR.OBV = tokens within possessor obviation constructions, where 0' is without *-iyiu*. Overt = tokens w/ the suffix *-iyiu*. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type appears w/ at least one 0' token in adult input.

The fact that only one of Ani's tokens requires overt marking presents a significant challenge for interpreting Ani's acquisition of the grammatical principles governing the marking of inanimate obviative singular nouns. The next section examines her production over time to see what may be established about her productive knowledge of these principles.

9.4.3.2.2. Productivity of the inanimate obviative suffix

Ani produces her first grammatical contexts for grammatically inanimate, obviative, and singular noun tokens at age 2;07.06. Here she produces two tokens of the noun type *chûchû* 'bottle' in (35–36).

- (35) <Δ (name) <σ-łʔ° >Jj^lx
 Âi (name) aniyâyiu uchûchûm.
 Target: âi (name) ani-yâyiu u-chûchû-m
 Actual: âi (name) ani-yâyiu *∅-chûchû-*∅
 HES name DEM.DIST-0' 3-bottle-POSS
 'That's (name)'s ... bottle.' (Ani, 2;07.06, A1.12, 12:21)

- (36) ▷JJ^l <σ-ʔ^ox
 Uchûchûm aniyâyiu.
 Target: uchûchûm ani-yâyiu
 Actual: *∅-chûchû-*∅ ani-yâyiu
 3-bottle-POSS DEM.DIST-0'
 ‘That’s her bottle.’ (Ani, 2;07.06, A1.12, 13:12)

In both examples, *chûchû* occurs in a context of possessor obviation and should be covertly obviative. However, both examples also come during the period when she omits all obligatory possessive marking. The fact that she correctly produces an inanimate noun without overt obviative marking likely reflects her global omission of morphology—not her understanding of a covert grammatical value.

The demonstrative in each example presents an interesting challenge for interpreting Ani’s production. In the target for (28–29), the demonstrative agrees with a covertly obviative noun and therefore bears an overt suffix *-yâyiu*. The phonetic realization of the target form for *aniyâyiu* is [ɛnˈjajo], and in each example Ani produces a form close to that: [najo]/[nejo]. This seems to indicate that Ani indeed has properly navigated a complex aspect of grammatical marking.

However, strong evidence indicates that Ani’s seemingly adult-like forms like [najo] are actually unanalyzed forms she uses as general demonstrative markers. Up to this age point, Ani repeatedly uses such a form in non-adult-like ways.

For example, in (37) the adult asks Ani what Dora the Explorer is doing, and the adult uses a proximate verbal form to refer to Dora. Given the context, where both speakers have been focusing on Dora for several utterances in a row, the proximate status of Dora has been well established in discourse. An adult-like response to (37) would be the proximate demonstrative form *an* ‘that’ (38) (Margaret, REH1-022, 9:29).

Instead, Ani employs her unanalyzed, general demonstrative form [najo] in (38), which seems to be extracted from the inanimate obviative singular demonstrative *aniyâyiu* [ɛnˈjajo] ‘that (OBV)’. She also does not use the NEC question particle and instead produces English-like rising intonation to mark her question.

(37) Ċ^ə <ġ^hŋ^b_x
 Tân âyihtik.
 tân âyihtik
 what that.s/he.does
 ‘What is she doing?’ (Adult, 2;04.22, A1.08, 7:57)

(38) <ġ^ə <ġ_x
 An â.
 Target: an â
 Actual: ani-*yâyiu Q
 DEM-*0’ *∅
 ‘That one?’ (Ani, 2;04.22, A1.08, 7:58)

Up until age 3;06.23, Ani produces more than 40 tokens of forms like [najo]/[nejo] in contexts requiring a proximate rather than an obviative demonstrative. This indicates that she goes through a stage where she uses [najo]/[nejo] as a general, unanalyzed demonstrative word akin to ‘that’. Ani’s identification of this form almost certainly corresponds to the high frequency of obviative demonstratives in the input: The adult uses more than 200 tokens of *aniyâyiu* ‘that (0)’ and *aniyâyiuh* ‘that (0)/(3)’ throughout the dataset. Going further into such details lies beyond the scope of the present study, but I have targeted Ani’s acquisition of obviative marking with demonstratives for future research.

For now, the point is that Ani’s ostensible usage of *aniyâyiu* so far almost certainly does not indicate that she has properly navigated the complexities of inanimate obviative singular marking.

Ani’s next context for an inanimate obviative singular noun comes at age 3;02.05. Here she produces (39), which contains another token of *chûchû* ‘bottle’ missing all obligatory possessive inflection with another demonstrative token [najo] that is seemingly adult-like but likely unanalyzed.

- (39) ▷JJ^l <σ-ɿʔ^o||_x
 Uchûchûm aniyâyuih.
 Target: u-chûchû-m ani-yâyui-h
 Actual: *∅-chûchû-*∅ ani-yâyui-h
 3-bottle-POSS DEM-0'-Q
 'Is that her bottle? (Ani, 3;02.05, A1.24, 03:26)

Ani does not produce another relevant context until age 4;00.13. Here she uses three noun types in contexts of possessor obviation: *bed* (two tokens), *chair* (two tokens), and *purse*. None of these tokens should take overt obviative marking, and Ani correctly does not produce the suffix *-iyiu* with any of them. At this age point, she applies the possessive suffix *-im* to all five tokens, which is adult-like (Chapter 7). However, she has variable accuracy with her person prefix application: Two tokens have the correct usage of the third-person prefix, while Ani omits the required prefix from the other three tokens (Chapter 6). Although Ani has no explicit errors with obviative marking here, it is difficult to be certain that she has acquired the principles of possessor obviation.

Ani's final context for navigating inanimate obviative singular marking comes with one token at age 4;03.07 (34). Here Ani and the adult have been talking about a doll, which is established in the discourse context as proximate. In (40) the adult asks what the doll is wearing, and she correctly inflects *akuhp* 'coat' with the overt inanimate obviative singular suffix. Ani responds in (41), where she productively applies the correct person prefix and uses the overt obviative morpheme as well. This is Ani's first and only production of the suffix *-iyiu* in the entire sample.

- (40) ɿŋŋd^lʔ^o||_x
 chitikuhipiyuih
 chit-ikuhp-iyiu-h
 2-coat-0'-Q
 'Your coat?' (Adult, 4;03.07, A1.37, 49:12)

- (41) $\hat{\Delta}^{\circ}\hat{\Delta} \sigma\cap d^{\circ}\wedge\hat{\rho}^{\circ}x$
 $\hat{I}h\hat{i}$ nitikuhpiyiu.
 $\hat{i}h\hat{i}$ nit-ikuhp-iyiu
 yes 1-coat-0'
 ‘Yes, my coat.’ (Ani, 4;03.07, A1.37, 49:13)

9.4.3.2.3. *Summary*

Given the scarcity of relevant noun tokens in Ani’s sample, the data do not provide enough evidence to determine that she has acquired productive usage of inanimate obviative singular marking.

9.4.3.3. The inanimate obviative suffix in Daisy’s speech

This section examines Daisy’s usage of inanimate obviative singular marking across noun types in contexts requiring either overt or covert marking (§9.4.3.3.1.) and in possessor obviation in particular (§9.4.3.3.2.). It evaluates her productive usage of obviative marking (§9.4.3.3.3) and considers possible connections to child-directed speech (§9.4.3.3.4). §9.4.3.3.5 summarizes findings.

9.4.3.3.1. *Overall distribution of the suffix*

Throughout her sampled data, Daisy has 59 total contexts where she produces a noun that is grammatically inanimate, obviative, and singular. In two of these contexts, she has an error of omission for the required suffix *-iyiu*, but her remaining 57 noun tokens are on-target in their occurrence with or without the suffix. For comparison with adult input, Table 9.32 lists the noun types that occur with two or more tokens in inanimate obviative singular contexts, and Table 9.31 lists the types with just one such token.

Like the adult, Daisy spreads her obviative tokens across a range of noun types (Tables 9.32–9.33), and she has no single type that dominates her production. Daisy’s production spans 40 different noun types: 20 English types and 20 NEC types. This even split between languages represents a departure from the rest of Daisy’s data in the present study, where NEC noun types typically dominate.

Table 9.32: Noun types w/ two or more 0' tokens, in Daisy's speech

Type	Gloss	Category	0' tokens		Errors		Total
			Overt	Covert	Om.	Comm.	
îch *	home	nid	0	4	0	0	4
name	name	eng	0	3	0	0	3
nipâwin *	bed	ni	0	3	0	0	3
present	present	eng	3	0	0	0	3
shtikwân *	head	nid	0	3	0	0	3
flower	flower	eng	2	0	0	0	2
mâtiwâkin *	toy, game	ni	0	2	0	0	2
mischisin *	shoe	ni	1	1	0	0	2
nituhkuyin	medicine	ni	1	1	0	0	2
pamper	diaper	eng	2	0	0	0	2
phone	phone	eng	2	0	0	0	2
skut *	nose	nid	0	2	0	0	2
zipper	zipper	eng	0	2	0	0	2

Notes. w/ = with. 0' = inanimate obviative singular. Overt = tokens w/ the suffix *-iyiu*. Covert = tokens correctly without *-iyiu*. Om. = errors of omission. Comm. = errors of commission. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with at least one 0' token in adult input.

Table 9.33: Noun types w/ one 0' token, in Daisy's speech

Type	Gloss	Category	0' tokens		Errors		Total
			Overt	Covert	Om.	Comm.	
apple	apple	eng	1	0	0	0	1
ashtutin *	hat	ni	0	1	0	0	1
asinî	stone	ni	1	0	0	0	1
banana	banana	eng	1	0	0	0	1
brush	brush	eng	1	0	0	0	1
chîshtihîkin	fork, needle	ni	0	1	0	0	1
homework	homework	eng	1	0	0	0	1
house	house	eng	1	0	0	0	1
kuhtishkui	throat	nid	0	1	0	0	1
mîchim *	food	ni	0	0	1	0	1
nipî *	water	ni	1	0	0	0	1
nose	nose	eng	0	1	0	0	1
paper	paper	eng	1	0	0	0	1
pâshchishikin *	small.gun	ni	1	0	0	0	1
plane	airplane	eng	1	0	0	0	1
rope	rope	eng	1	0	0	0	1
sîutîs	candy/sweets	ni	1	0	0	0	1
skât *	leg	nid	0	1	0	0	1
sock	sock	eng	0	1	0	0	1
sticker	sticker	eng	1	0	0	0	1
sugar	sugar	eng	1	0	0	0	1
sweater	sweater	eng	1	0	0	0	1
tî *	tea	ni	0	1	0	0	1
tihchî *	hand	nid	0	1	0	0	1
tire	tire	eng	1	0	0	0	1
wâpuyân *	blanket	ni	0	1	0	0	1
wiyâs	meat	ni	0	0	1	0	1

Notes. w/ = with. 0' = inanimate obviative singular. Overt = tokens w/ the suffix *-iyiu*. Covert = tokens correctly without *-iyiu*. Om. = errors of omission. Comm. = errors of commission. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with at least one 0' token in adult input.

9.4.3.3.2. Possessor obviation

Table 9.34 provides Daisy's noun types that occur in contexts of possessor obviation, where the obviative status of an inanimate singular noun is covert. The table includes tokens with an overt suffix *-iyiu* as well as asterisks marking types that occur in possessor obviation contexts in the input.

Table 9.34: Noun types w/ 0' tokens in possessor obviation, in Daisy's speech

Type	Gloss	Category	0' tokens		Errors		Total
			PSR.OBV	Overt	Om.	Comm.	
îch *	home	nid	4	0	0	0	4
shtikwân *	head	nid	3	0	0	0	3
name	name	eng	3	0	0	0	3
nipâwin *	bed	ni	3	0	0	0	3
mâtiwâkin	toy, game	ni	2	0	0	0	2
mischisin *	shoe	ni	1	1	0	0	2
nituhkuyin	medicine	ni	1	1	0	0	2
skut *	nose	nid	2	0	0	0	2
zipper	zipper	eng	2	0	0	0	2
ashtutin *	hat	ni	1	0	0	0	1
chîshtihîkin	fork, needle	ni	1	0	0	0	1
kuhtishkui	throat	nid	1	0	0	0	1
nose	nose	eng	1	0	0	0	1
skât *	leg	nid	1	0	0	0	1
sock	sock	eng	1	0	0	0	1
tî	tea	ni	1	0	0	0	1
tihchî *	hand	nid	1	0	0	0	1
wâpuyân *	blanket	ni	1	0	0	0	1

Notes. w/ = with. 0' = inanimate obviative singular. PSR.OBV = tokens within possessor obviation constructions, where 0' is without *-iyiu*. Overt = tokens w/ the suffix *-iyiu*. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. eng = English. * = type also occurs in PSR.OBV constructions in adult input.

Possessor obviation plays a prominent role in conditioning Daisy's obviative contexts, but only for her NEC nouns. Of Daisy's 20 NEC noun types (29 overall tokens), 14 types (23 total tokens) occur in possessor obviation. On the other hand, of Daisy's 20 total English types (28 total tokens), just four (seven tokens) occur in possessor obviation. Finally, Daisy has only two types that also have tokens overtly marking obviation with *-iyiu*: *mischisin* ‘shoe’ and *nituhkuyin* ‘medicine’.

9.4.3.3.3. Productivity of the inanimate obviative suffix

Daisy produces contexts requiring proper navigation of inanimate obviative singular marking in all but one of her recording sessions (Table 9.35)

with a proximate form in (44), but an adult would use an obviative suffix with the noun (Margaret, REH1-025, 12:22).

- (43) ᓚᓃᓃᓃ ᓃᓃᓃᓃᓃ
 Châkwâyiû mîn.
 châkwâ-yiû mîn
 what-0' again
 ‘What (OBV) else?’ (Adult, 3;09.02, B1.02, 10:08)

- (44) ᓚᓃᓃᓃᓃᓃ
 wiyâsiyiû
 Target: wiyâs-iyiû
 Actual: wiyâs-*∅
 meat-0'
 ‘meat’ (Daisy, 3;09.02, B1.02, 10:09)

In the next session at 3;09.22, Daisy produces four relevant contexts. She uses two noun types with one token each in possessor obviation (45–46), where each noun correctly is covertly obviative. Her demonstrative form in (46) takes obviative marking to agree with the noun, which signals that Daisy understands the mechanics of possessor obviation.

- (45) ᓚᓃᓃᓃᓃᓃ ᓃᓃᓃᓃᓃ
 ushtikwân awân
 u-shtikwân awân
 3-head someone
 ‘somebody’s head’ (Daisy, 3;09.22, B1.03, 6:17)

- (46) Ĭ▷ḷ ▷\d^c_x
 Mâu-yâ uskut.
 mâu-yâ u-skut
 DEM.PXL-0' 3-leg
 ‘This is his nose.’ (Daisy, 3;09.22, B1.03, 10:26)

At this age point, Daisy’s remaining two tokens occur outside of possessor obviation. In (47), she talks about a person (proximate) putting sugar in his medicinal drink. Clausemate obviation makes *sugar* obviative, and Daisy correctly applies *-iyiu*.

- (47) ĬσĊ" ḷb^sḷ° Γ^oḷ" <ḷ"Λḷ^hḷσ^h_x
 Mânitâh sugaryiu mishtîh âhpichistinihk.
 mâni-tâh sugar-yiu mishtîh âhpichistinihk
 DEM.DIST-LOC sugar-0' many that.s/he.releases.it
 ‘Where he puts a lot of sugar.’ (Daisy, 3;09.22, B1.03, 20:53)

However, Daisy omits obviative marking in the other context of clausemate obviation (48). Here *awân* ‘somebody’ is proximate, which obligatorily triggers obviative status for any other third-person in the clause. However, Daisy omits the required *-iyiu* from *mîchim* ‘food’.

- (48) ḷḷ^hḷ^o ḷḷ▷ḷσḷ^o <ḷ^hḷ^h_x
 Mîchimyiu chikiutinichâu awân.
 Target: mîchim-yiu chikiutinichâu awân
 Actual: mîchim-*∅ chikiutinichâu awân
 food-0' s/he.will.buy.it somebody
 ‘Somebody will buy some food.’ (Daisy, 3;09.22, B1.03, 33:15)

This is Daisy’s final error with marking obviative forms for inanimate singular nouns. Each of her two errors have come outside of possession-conditioned obviation. There is not much evidence, but this may indicate that Daisy grasps the mechanics of obviation conditioned by possession before obviation conditioned by discourse or argument structure.

In Daisy’s next consecutive recording session, she uses 10 different noun types across 15 contexts requiring obviation: NEC types *kuhtishkui* ‘throat’, *mischisin* ‘shoe’, *nipâwin* ‘bed’, *nituhkuyin* ‘medicine’ (two tokens), and *wâpuyân* ‘blanket’; and English types *homework*, *name* (three tokens), *Pamper* (the brand name as a term for “diaper”), *phone*, and *sock*.

Nine of these 15 contexts involve possessor obviation. This includes all three tokens of *name*, as in (49), and one token each for *kuhtishkui* ‘throat’ (50), *mischisin* ‘shoe’, *nipâwin* ‘bed’, *nituhkuyin* ‘medicine’, *sock*, and *wâpuyân* ‘blanket’

- (49) ᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲ
 Chichischâyihâtân â unameim.
 chichischâyihâtân â u-name-im
 you.know.it Q 3-name-POSS
 ‘Do you know her name?’ (Daisy, 3;11.11, B1.04, 7:27)

- (50) ᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲ
 ukuhtishkui
 u-kuhtishkui
 3-throat
 ‘Her/his throat’ (Daisy, 3;11.11, B1.04, 39:44)

Daisy’s other six tokens involve obviation not conditioned by possession with noun types *homework*, *nituhkuyin* ‘medicine’, *Pamper* (two tokens), and *phone* (two tokens). She marks each token overtly with *-iyiu* in an adult-like fashion.

In fact, her utterance (51) in particular demonstrates sophisticated understanding of two crucial grammatical aspects of obviation. First, she designates *homework* as obviative because of discourse considerations. She has been talking about her friend and a school bag, so either of these third-persons in the discourse environment make the third-person *homework* obviative. Second, possessor obviation dictates that a noun with a third-person possessor co-referenced with the subject of a clause takes no overt obviative suffix. In (51) the possessor of *homework* and the subject are indeed co-referenced, but this involves a first-person rather than a third-person. Therefore, Daisy correctly uses overt obviative marking on the possessee.

- (51) <Ā Δ <σ Ċ" ĩ <Ċ Δ⁶ σ" > ɤ ɤ ʔ ʔ ʔ^o x
 Âi anitâh châpâtâwich nihomeworkimiyiu.
 âi ani-tâh châpâtâwich ni-homework-im-iyiu
 HES DEM.DIST-LOC I.will.bring.it 1-homework-POSS-0'
 'Um ... I will bring my homework there.' (Daisy, 3;11.11, B1.04, 17:37)

This age point also includes an important set of contrasting word forms with a single noun type, *nituhkuyin* 'medicine', that directly illustrate Daisy's knowledge of marking across covert and overt contexts. In (52) possessor obviation means that *nituhkuyin* is covertly obviative, and Daisy produces an adult-like form (Margaret, REH1-008, 01:05:53). In (53) Daisy marks *nituhkuyin* as overtly obviative. Here clausemate obviation dictates that the receiver of the medicine is proximate and so the medicine is obviative.

- (52) ɾ^o <σ Ċ" <ĭ" Ā ſ â d σ ɾ⁶ (a ɤ) ɤ σ ɤ" d ɾ σ⁶ purple x
 Mikw anitâh âh îshinâkuniyich (name) unituhkuyinim purple.
 mikw ani-tâh âhîshinâkuniyich (name) u-nituhkuyin-im purple
 just DEM-LOC that.it.appears.OBV name 3-medicine-POSS purple
 'Only (name)'s medication is purple.' (Daisy, 3;11.11, B1.04, 28:17)

- (53) ɾ ʔ ʔ ʔ ʔ ʔ σ ɤ" d ɾ σ ɾ^o <ĭ" d ɾ⁶ x
 Chikimiyâkiniû nituhkuyiniyiu âhkusû.
 chikimiyâkiniû nituhkuyin-iyiu âhkusû
 s/he.will.be.given medicine-0' because.s/he.is.sick
 'She'll be given medication because she is sick.' (Daisy, 3;11.11, B1.04, 52:49)

Altogether, at age 3;11.11, Daisy not only demonstrates sophisticated understanding of the mechanics of marking inanimate obviative singular nouns, but she also satisfies the criteria for productivity. She has used both covert and overt marking across two consecutive recording sessions with 14 different noun types. She has also used six of those types in contrasting word

forms without obviation: *homework*, *nipâwin* ‘bed’, *phone*, *shtikwân* ‘head’, *sock*, and *sugar*. With only one error, she exceeds the 80 percent threshold for accuracy.

9.4.3.3.4. *Possible connections to patterns in adult input*

There may be some connection between Daisy’s NEC noun types and those that occur in child-directed speech. In some ways, she tends to use NEC noun types that also occur in certain grammatical contexts in the input. Daisy has 20 total NEC types with inanimate obviative singular tokens, and 14 of these (70.00 percent) occur in this context in the input. A possible connection seems even stronger in possessor obviation: Daisy uses 14 NEC types in possessor obviation, and 11 (78.57 percent) of them occur in the same context in the input.

In §9.4.3.1.2., I postulate that the NEC noun types the adult produces in contrasting word forms with and without inanimate obviative singular tokens (Table 9.30) may play a role in illustrating inflectional patterns to children. Daisy produces just four of these 11 types: *ashtutin* ‘hat’, *mîchim* ‘food’, *shtikwân* ‘head’, and *wâskâhîkin* ‘house’—but each of these is among the most frequent nouns types the adult uses in obviative singular contexts (Table 9.27).

Other facets of Daisy’s production seem quite distinct from child-directed speech. Daisy’s usage of English noun types once again appears to testify uniquely to her productive capacities with NEC inflection. None of her 20 English types (Tables 9.32–9.33) also appear with inanimate obviative singular tokens in the input.

9.4.3.3.5. *Summary*

Daisy produces more inanimate obviative singular noun tokens than Ani, and she produces many tokens in contexts requiring either covert or overt obviative marking. Daisy successfully navigates the challenges of covert and overt marking (§9.4.1.) and demonstrates productive usage of the inanimate obviative singular at age 3;11.11. Possessor obviation plays a prominent role conditioning Daisy’s obviative marking, but only for her NEC nouns. Her usage of English noun types with NEC inflection again seems particularly independent from the input, as she uses much more English than the adult yet still produces creative and productive forms with inanimate obviative singular marking.

9.4.3.4. The inanimate obviative suffix in Billy's speech

This section evaluates Billy's overall distribution of inanimate obviative singular marking (§9.4.3.4.1.) and in contexts of possessor obviation (§9.4.3.4.2.). It then traces his productive usage of such marking (§9.4.3.4.3) and discusses how aspects of his production may connect to patterns in child-directed speech (§9.4.3.4.4). §9.4.3.4.5 summarizes findings.

9.4.3.4.1. Overall distribution of the suffix

Billy produces 22 total contexts for an inanimate obviative singular noun, more than Ani but fewer than Daisy. He uses 16 different noun types here, but only a handful of types occur with more than one token (Table 9.36). English noun types comprise the slight majority of his types in Table 9.36 (9/16 types, 56.25 percent), but his tokens are split evenly between NEC and English types. Billy produces only six types (seven tokens) that occur with an overt suffix *-iyiu*. The rest of his production consists of nouns in contexts of possessor obviation. The next section examines this aspect of Billy's production.

Table 9.36: Noun types w/ two or more 0' tokens, in Billy's speech

Type	Gloss	Category	0' tokens		Errors		Total
			Overt	Covert	Om.	Comm.	
îch *	home	nid	0	2	1	0	3
ashtutin *	hat	ni	0	2	0	0	2
goalie stick	goalie stick	eng	1	1	0	0	2
nipî *	water	ni	2	0	0	0	2
sock	sock	eng	0	2	0	0	2
chimney	chimney	eng	0	1	0	0	1
chûchû *	bottle	ni	0	1	0	0	1
dress	dress	eng	1	0	0	0	1
fire	fire	eng	0	0	1	0	1
heart *	heart	eng	1	0	0	0	1
key	key	eng	1	0	0	0	1
pâshchishikin *	small gun	ni	0	1	0	0	1
skut *	nose	nid	0	1	0	0	1
toy	toy	eng	1	0	0	0	1
tree	tree	eng	0	1	0	0	1
tun *	mouth	nid	0	1	0	0	1

Notes. w/ = with. 0' = inanimate obviative singular. Overt = tokens w/ the suffix *-iyiu*. Covert = tokens correctly without *-iyiu*. Om. = errors of omission. Comm. = errors of commission. na = animate noun. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type occurs with at least one 0' token in adult input.

9.4.3.4.2. Possessor obviation

Billy employs 10 different noun types (15 total tokens) in contexts of possessor obviation, which require covertly obviative noun tokens (Table 9.37). This means that possessor obviation conditions most of Billy's inanimate obviative tokens. However, he uses only one noun type both inside and outside of possessor obviation: *goalie stick*. As such, this provides a direct opportunity to evaluate Billy's knowledge of overt versus covert marking.

Table 9.37: Noun types w/ 0' tokens in possessor obviation, in Billy's speech

Type	Gloss	Category	0' tokens		Errors		Total
			PSR.OBV	Overt	Om.	Comm.	
îch *	home	nid	2	0	1	0	3
ashtutin *	hat	ni	2	0	0	0	2
goalie stick	goalie stick	eng	1	1	0	0	2
sock	sock	eng	2	0	0	0	2
chimney	chimney	eng	1	0	0	0	1
chûchû *	bottle	ni	1	0	0	0	1
pâshchishikin *	small gun	ni	1	0	0	0	1
skut	nose	nid	1	0	0	0	1
tree	tree	eng	1	0	0	0	1
tun	mouth	nid	1	0	0	0	1

Notes. w/ = with. 0' = inanimate obviative singular. PSR.OBV = tokens within possessor obviation constructions, where 0' is without *-iyiu*. Overt = tokens w/ the suffix *-iyiu*. Om. = errors of omission. Comm. = errors of commission. d = "dependent", a term for inalienable possession in Algonquian literature. eng = English. * = type also occurs in PSR.OBV constructions in adult input.

9.4.3.4.3. Productivity of the inanimate obviative suffix

Seven of Billy's 11 recording sessions contains a context requiring the child to navigate the mechanics of covert or overt marking for an inanimate obviative singular noun (Table 9.38).

Table 9.38: Billy's 0' tokens, per recording session

Session	Child age	0' tokens		Errors		Total
		PSR.OBV	Overt	Om.	Comm.	
B3.04	4;06.08	3	1	0	0	4
B3.06	4;07.27	0	1	0	0	1
B3.07	4;08.21	3	0	0	0	3
B3.11	5;00.13	0	0	2	0	2
B3.14	5;03.22	4	2	0	0	6
B3.15	5;05.00	1	0	0	0	1
B3.18	5;10.06	2	3	0	0	5
Total		13	7	2	0	22

Notes. w/ = with. 0' = inanimate obviative singular. PSR.OBV = tokens within possessor obviation constructions, where 0' is without *-iyiu*. Overt = tokens w/ the suffix *-iyiu*. Om. = errors of omission. Comm. = errors of commission.

Billy does not have a relevant context during his first recording session at age 4;05.04, but he does produce four such contexts in his next session at 4;06.08. Here he uses three different noun types in possessor obviation, which require covert marking, including two types at once within

the compound noun in (54). Billy also has one token requiring overt marking, which he produces correctly in (55).

- (54) ▷↳ ◁▷◄◂◃◅◆◇◈◉◊○◌◍◎●◐◑◒◓◔◕◖◗◘◙◚◛◜◝◞◟◠◡◢◣◤◥◦◧◨◩◪◫◬◭◮◯◰◱◲◳◴◵◶◷◸◹◺◻◼◽◾◿◿_x
- Uyâ â utreeimiwâu wîchiwâu.
- | | | | |
|------------|---|-----------------------|------------------|
| u-yâ | â | u-tree-im-iwâu | w-îch-iwâu |
| DEM.PXL-0' | Q | 3-tree-POSS-2/3PL.PSR | 3-home-2/3PL.PSR |
- 'Is this their treehouse?' (Billy, 4;06.08, B3.04, 25:51)

- (55) ˀσĈ" ɔʔʔ°_x
- Mânitâh toyiyiu.
- | | |
|--------------|----------|
| mâni-tâh | toy-iyiu |
| DEM.DIST-LOC | toy-0' |
- 'There is the toy.' (Billy, 4;06.08, B3.04, 36:16)

In his next session at 4;07.27, Billy has only one relevant token (56). Prior to this utterance, Billy and the adult are discussing a doll, which is established as proximate. In (56) Billy says what the doll is holding, and he uses overt obviative marking in an adult-like fashion.

- (56) "∇◁◊◈◉◊○◌◍◎●◐◑◒◓◔◕◖◗◘◙◚◛◜◝◞◟◠◡◢◣◤◥◦◧◨◩◪◫◬◭◮◯◰◱◲◳◴◵◶◷◸◹◺◻◼◽◾◿◿_x
- heartiyiu
- heart-iyiu
- heart-0'
- 'a heart' (Billy, 4;07.27, B3.06, 19:44)

By this age point, Billy has satisfied the criteria for demonstrating productivity with inanimate obviative singular marking. He produces obligatory contexts across two consecutive recording sessions, commits no errors, uses four different noun types, and has used both *chimney* and *toy* in contrasting word forms without obviation.

In his next consecutive session, Billy produces another three tokens in a covert marking context, further demonstrating his productivity. For example, (57) testifies to his understanding

of covert obviation: He produces the noun with no suffix, and he correctly marks the agreeing demonstrative as obviative (Margaret, REH1-032, 09:40).

- (57) ĩ▷ĩ▷° ▷▷°_x
 Mâyâyiu utun.
 mâu-yâyiu u-tun
 DEM.PXL-0' 3-mouth
 'Here is his mouth.' (Billy, 4;08.21, B3.07, 25:35)

As a final point of interest, Billy produces two contrasting word forms showing his understanding of covert and overt obviative marking. At age 5;10.06, Billy produces *goalie stick* in a possessor obviation construction (58). The possessee noun correctly carries no obviative marking, although Billy uses a non-adult-like obviative suffix with the agreeing demonstrative (Margaret, REH1-032, 32:59). With possessor of the *goalie stick* established as proximate, a few moments later Billy again refers to the object in (59). Here there is no possession, so overt marking is required, and he correctly applies the suffix *-iyiu*.

- (58) ◁◁ĩ° ĩ° ◁◁ĩ▷▷◁◁◁°◁◁°_x
 Awân mâk aniyâ ugoaliestickim.
 Target: awân mâk ani-yâ u-goalie.stick-im
 who so DEM.DIST-0' 3-goalie.stick-POSS
 Actual: awân mâk ani-*yâh u-goalie.stick-im
 who so DEM.DIST-*3' 3-goalie.stick-POSS
 'But whose goalie stick is that?' (Billy, 5;10.06, B3.18, 34:46)

- (59) ◁◁◁°◁◁°
 goaliestickiyiu
 goalie.stick-iyiu
 goalie.stick-0'
 'goalie stick?' (Billy, 5;10.06, B3.18, 35:03)

9.4.3.4.4. *Possible connections to patterns in adult input*

Some facets of Billy's production seem connected to patterns in the input. He uses seven total NEC types in contexts for an inanimate obviative singular token, and all of these types occur in the same context in the input (Table 9.36). Possessor obviation also occupies a prominent position in Billy's production, and conditions most of his inanimate obviative singular nouns (15/22 tokens, 68.18 percent). On the other hand, Billy employs nine English noun types in this context, and just one of these types occur in the same context in child-directed speech: *heart*. Once again, his English types provide a window into his independent, productive usage of NEC inflectional morphology.

9.4.3.4.5. *Summary*

Billy produces relatively few tokens in inanimate obviative singular contexts, compared to the adult and Daisy. Nonetheless, he demonstrates productive usage of such marking by age 4;07.27, which includes successfully navigating the challenges of covert and overt marking. As with Daisy, possessor obviation plays a central role in conditioning his inanimate obviative singular tokens, and his usage of English noun types in particular provides a window into his productive application of the principles governing covert and overt marking.

9.4.4. **Conclusions: The OBV suffix**

Two Final suffix morphemes mark obviation for nouns, but each suffix occurs with a different animacy category and has different rules governing its usage. The input presents children with tokens of each suffix across a variety of noun types, where possessor obviation plays a prominent role in conditioning obviative marking. Child-directed speech also provides all of the necessary evidence to extrapolate the different distributional rules for each obviative morpheme.

Ani demonstrates productive usage of only the animate obviative suffix, but her dearth of noun tokens makes it difficult to say much about her acquisition process. Both Daisy and Billy demonstrate productive usage of each obviative morpheme, which includes strong evidence that each child masters the challenges of covert and overt marking for inanimate nouns. Both children tend to use obviative marking with NEC noun types that have obviative tokens in the input, but their usage of obviative marking with English noun types testifies to their uniquely productive application of NEC inflectional morphology.

9.5. Conclusions: The Final suffix

This chapter has analyzed the presence of the Final suffix in child-directed speech as well as the acquisition of the Final suffix by Ani, Daisy, and Billy. The Final suffix presents children with a specific set of challenges: They must identify the suffix position within the NEC affixal template and its morphological members, and they must decipher interacting grammatical considerations that govern the appearance of each morpheme. These difficulties also present methodological challenges for tracing the acquisition of the Final suffix.

The majority of the input presents children with noun tokens bearing no Final suffix, but child-directed speech nonetheless contains more than 100 tokens of each Final suffix morpheme. Although the adult uses each morpheme across a variety of noun types, she tends to employ a Zipfian distribution where small numbers of noun types bear many of the suffix tokens.

Ani produces relatively few nouns with a Final suffix, but Daisy and Billy use the various morphemes at comparable rates. Due to her dearth of tokens, it is hard to establish Ani's productive usage with any Final suffix morpheme except the animate plural and animate obviative, and it is difficult to draw connections between her acquisition of the Final suffix and patterns in the input. Daisy demonstrates productive usage of each Final suffix morpheme, and Billy evinces productivity for all morphemes except for the inanimate plural—but this may be a consequence of the peculiarities of his speech as well as the characteristics of data sampling for the present study.

Overall, the speech of Daisy and Billy seem to resemble and depart from patterns in the input in similar ways. In general, both children tend to produce Final suffix morphemes with NEC noun types that also occur with such morphemes in the input, although they also use seemingly novel noun types to various extents. Their usage of the Final suffix with English noun types, though, seems more creative and independent from what they encounter in child-directed speech.

Chapter 10: Conclusions

The present study has described the acquisition of nominal inflection in Northern East Cree (NEC), with a primary focus on noun inflection in expressions of possession. Using a corpus of naturalistic video data, this dissertation has detailed the presence of inflectional elements in child-directed speech as well as the emergence of such elements in the speech of three different children: Ani (age 2;01.12–4;03.07), Daisy (3;08.10–5;10.02), and Billy (4;05.04–5;10.06).

This examination began with a survey of the landscape of the data (Chapter 5), followed by an analysis of the inflectional morphology involved with each position within the affixal template for NEC nouns: the prefix marking person of a possessor (Chapter 6), the possessive suffix *-im* (Chapter 7), the suffixes marking obviative and plural possessors (Chapter 8), and the various morphemes encoding interacting considerations of animacy, number, and obviation—along with a locative suffix (Chapter 9).

This chapter brings this journey to its conclusion by answering the three research questions (RQs) originally posed in Chapter 4 (§10.1.–§10.3.). This is followed by brief consideration of some of the scientific implications of the present study (§10.4.), implications for community language efforts (§10.5.), and directions for future research (§10.6.).

10.1. Answers for RQ1

RQ1 Which aspects of possessive inflection are present in adult input to children within the CCLAS corpus?

Child-directed speech contains almost 400 distinct noun types across more than 2,000 tokens, and children encounter a noun in approximately one out of ten utterances in the input. Although English-only nouns are indeed present in the input, child-directed speech largely contains NEC-only nouns. This includes a diverse scope of NEC noun types that have tokens bearing NEC inflectional morphology, and a small number of English noun types take NEC marking as well. Hundreds of constructions involve nouns with NEC possessive inflection, which involve the richest range of inflectional possibilities. For each position within the affixal template, the input

presents children with various qualities of evidence to identify each inflectional slot and the morphemes associated with that templatic position.

Person prefix morphemes appear with nearly 700 noun tokens, although the characteristics of adult-child interactions mean that most tokens mark either second- or third-person possessors. The prefix morphemes occur with a Zipfian distribution in the input, where a relative handful of noun types do the bulk of the work illustrating to children the presence and function of the person prefix morphemes, as well as exemplifying the distinction between (in)alienably possessed nouns.

Child-directed speech also provides children with the necessary evidence to acquire the possessive suffix *-im*, which occurs in the Suffix 1 position within the template. The adult uses a range of noun types as possessees, where many types have tokens both inside and outside of possessive constructions. The input contains primarily possessees that do not allow *-im*, but the available evidence may enable children to identify *-im* as a default marker of possession constrained by a couple of straightforward principles hinging on semantics and morphophonology.

In contrast to the prefixes indexing the person of the possessor, the morphemes that mark obviative possessors in the Suffix 2 position or plural possessors in the Suffix 3 position occur infrequently in the input. Again, most marking indexes second- or third-person possessors due to the characteristics of adult-child conversations, and the plural suffix *-iwâu* is the only such possessor morpheme to occur more than seven times in the input throughout the entire dataset. Across both suffix positions, the noun type *îch* ‘home’ does the bulk of the work illustrating to children the presence and function of these possessor suffixes.

The Suffix 4 position contains a complex array of morphemes, and the majority of noun tokens in the input bear no such Final suffix. However, child-directed speech does contain more than 100 tokens of each Suffix 4 morpheme, which illustrate to children the presence and function of each Final suffix. This holds for the locative and plural suffixes, which occur under relatively straightforward circumstances, as well as for the obviative suffixes, which have a distribution governed by more complex factors related to syntax and discourse.

Altogether, all aspects of possessive inflection are illustrated in adult input. Child-directed speech presents each morpheme in the affixal template, although some categories of marking are much more frequent than others. The adult also employs a Zipfian distribution with many NEC

inflectional morphemes, where small numbers of noun types carry most affix tokens. Furthermore, child-directed speech generally contains contrasting word forms with and without a given affix, which may also facilitate acquisition.

10.2. **Answers for RQ2**

RQ2 How is possession expressed by children before the emergence of possessive inflection?

The answer to this RQ lies primarily within Ani's sampled data, which begin at a much earlier age than the data for Daisy or Billy. As described by Henke (2019b) Ani's first expressions of possession consist of constructions containing a demonstrative rather than a noun as the possessee. These constructions circumvent the NEC inflectional template for nouns, although demonstratives as possesseees must still inflect for animacy, number, and obviation—albeit with just a single suffix. However, up until age 3;06.23, many of Ani's demonstratives—which at first glance appear to inflect for animacy, number, and obviation—are actually unanalyzed, general forms. Ani's productive usage of demonstrative inflection requires further study, but throughout her dataset, the majority of Ani's possessive constructions do not contain nouns as possesseees. Ani does not clearly begin to use any kind of possessive inflection until age 3;06.23. Up until this age point, her nouns lack all possessive marking in a clear pattern of global omission.

Daisy and Billy are each quite a bit older than Ani when their data samples begin, and so both older children utilize possessive inflection from their first recording sessions. Neither child evinces the same kind of omission pattern found with possessive marking in Ani's recordings.

10.3. **Answers for RQ3**

RQ3 What is the path of emergence for children for the inflectional categories involved in possession?

Each of the three children demonstrates a different level of productive usage with various inflectional morphemes. Some of the differences most certainly result from the fact that the samples for each of the children begin and end at unique age points. Additionally, some inter-

child differences in productivity are likely exacerbated by the small data sample, where the individual personalities and communication styles of each child have an outsized impact on variation in their production of inflectional morphology.

For all three children, the emergence and productive usage of NEC inflectional morphology seems to share some connections to patterns in child-directed speech. In particular, the children often use a given inflectional morpheme with noun types that occur with the same morpheme in the input. The children also do not tend to demonstrate productive usage of morphology that is rare in the input, such as the prefix marking an unspecified/indefinite possessor and the suffix encoding an obviative possessor. However, each child also shows a deft command of NEC inflection with English noun types. Given the paucity of such mixed-inflection nouns in the input, this production testifies directly to their productive mastery of NEC inflectional morphology.

10.3.1. Ani

Ani's usage of possessive inflection does not emerge until age 3;06.23, and before this age point she produces only bare nouns as possessees. Ani begins to use the person prefix at this age, but shows productive usage of only the third-person prefix by the time her dataset ends. She does not produce the possessive suffix *-im* until age 4;00.13, but from that age point she applies the suffix to several different English nouns types to demonstrate productive usage by age 4;03.07. The data provide no evidence to show Ani has mastered marking for obviative or plural possessors. The vast majority of Ani's noun tokens do not carry or necessitate an overt Final suffix morpheme. The data suggest that Ani uses the locative suffix before any inflectional marking for possession, but she does not provide enough evidence to evince productive usage of this affix. She begins to use the animate plural suffix at 3;06.23, with productive mastery by 4;03.07. Ani possibly uses the animate obviative suffix as early as 2;03.24, but she generally omits the suffix until 4;00.13, with productive usage shown at 4;03.07.

In sum, Ani begins by omitting marking for nearly all inflectional categories, and by the time her data sample ends, she demonstrates productive usage of marking for third-person possessors, possession (via *-im*), as well as the animate plural and the animate obviative. The data do not provide enough evidence to show that Ani has acquired productive marking for the following

inflectional categories: the locative; first-person, second-person, and unspecified/indefinite possessors; obviative or plural possessors; and plural or obviative for inanimates.

10.3.2. Daisy

From her first recording session at age 3;08.10, Daisy employs prefixes encoding the person of a possessor, and she demonstrates productive usage of all person prefix morphemes except for the unspecified/indefinite possessor marker by age 3;11.11. She also uses the possessive suffix *-im* from the beginning and shows productive usage of the morpheme by 3;09.22. Her mastery of marking for plural and obviative possessors is not as straightforward: Daisy has productivity with the inclusive suffix at 3;11.11, the non-first-person plural suffix at 4;00.00, and the exclusive suffix at 5;07.03—with no evidence that she has acquired the suffix marking an obviative possessor. Approximately half of her noun tokens do not carry or need a Final suffix morpheme. Nonetheless, she demonstrates productive usage of the locative suffix, both plural suffixes, and both obviative suffixes by age 3;11.11.

In sum, Daisy's data begins at an age point where she already marks several inflectional categories, and by age 3;11.11, she shows productive mastery of marking for nearly all categories of person, possession (via *-im*), the locative, as well as plural and obviative for both animates and inanimates. Marking for plural possessors and navigating clusivity takes more time and is all in place by 5;07.03, but she does not demonstrate productivity with marking obviative possessors.

10.3.3. Billy

Like Daisy, Billy employs prefixes marking the person of a possessor from his first recording session. However, he only demonstrates productive usage of the first- and third-person prefixes by age 4;08.21, with no evidence that he has mastered the second-person or unspecified/indefinite possessor prefix. He uses the possessive suffix *-im* from his first recording session at 4;05.04 and demonstrates productive usage by 4;08.21. Billy shows productive knowledge of only two of the four suffixes marking obviative and plural possessors—the exclusive suffix at 5;00.13 and the non-first-person plural suffix at 5;02.12. A little more than half of his noun tokens require Billy to navigate the proper application of a Final suffix morpheme. He evinces productive usage of the locative suffix at 4;08.21, the inanimate obviative by 4;07.27, the animate obviative at

5;00.13, and the animate plural suffix by 5;02.12. Billy does not show productive mastery of the inanimate plural suffix, but he satisfies nearly all of the criteria for productivity with the suffix.

In sum, Billy's data sample also begins when his acquisition of NEC inflectional morphology is well under way. By the time his dataset ends, he demonstrates productive marking for the inflectional categories of first- and third-person for possessors; possession (via *-im*); locative; and obviation for both animates and inanimates. Billy only shows productivity for marking plural animates but likely has acquired inanimate plural marking as well. Like Daisy, he does not show the same strength with marking plural or obviative possessors. Somewhat surprisingly, Billy also does not show productivity with marking second-person possessors, but this may be due to the characteristics of his interactions with the adult in the recordings.

10.4. Some implications for L1 acquisition research

As §3.3 addresses, the present study does not directly engage, advocate, or challenge a particular theory—whether nativist/generativist or emergentist/functionalist. Part of this abstention is due to the limitations imposed by the small sample of naturalistic data, and part is due to the fact that this study breaks new ground. Instead the aim here has been to provide the kinds of information that could be useful for approaching the data from a variety of theoretical vantage points. This study has included rich descriptions of the data within the CCLAS corpus, both in terms of quantitative information such as frequency counts of word forms and morphemes as well as in qualitative discussions of patterns in the data. My hope is that these descriptions can lay the groundwork for future study by others. This could include, for example, comparing the characteristics of child-directed speech recounted in the present study with Jones' anecdotal accounts from the 1980s (1988, 1986). As another example, one could run statistical tests on the data in the present study to determine the association between the frequency of word forms in the input and their occurrence in child speech. Even with the relatively atheoretical approach of this dissertation, the findings here can inform the scientific understanding of how children acquire the grammatical expression of possession.

As with children acquiring any language, possession is an important and frequent point of conversation for the three children represented in the CCLAS corpus. Ani, Daisy, and Billy each commonly refer to objects that belong to them as well as objects that belong to their family members, friends, and characters from stories and television programs.

As slightly older children, Daisy and Billy use many of the inflectional components of possession from their first recording sessions. Ani's earliest productions, however, resemble those from children acquiring polysynthetic and non-polysynthetic languages: She generally omits marking for possession, which includes person prefix morphemes and the possessive suffix *-im*. She does not start using possessive marking until age 3;06.23, which in particular seems to resemble patterns observed for at least one child acquiring Yucatec Maya (Pfeiler, 2009, pp. 100–102).

Each of the three children evince different degrees of command with the four person prefix morphemes, which are the only inflectional pieces required for nearly every possessee noun—but each child does eventually demonstrate productivity with the possessive suffix *-im*. In fact, there seems to be a split between marking properties of the possessee and possessor for all three children: They all master the possessive suffix, which encodes a property of the possessee, but they show less facility with marking person, plurality, and obviation for the possessor. All three children also show that they recognize the difference between NEC and English nouns, as for example, they apply the possessive suffix *-im* differently to nouns from each source language.

These findings also shed some light on new areas in the L1 acquisition of polysynthetic languages. Each of the children shows mastery of marking plural for animate nouns, but despite the frequency of inanimate plurals in the input, only Daisy clearly satisfies the criteria for productive usage of the inanimate plural suffix. Future research is needed to investigate these differences in acquiring plural marking across animacy categories.

To my knowledge, this is the first published study examining the acquisition of obviative marking for nouns in any Algonquian language. Even though obviation entails complex considerations of both (morpho)syntax and discourse, each of the children demonstrates mastery of obviative marking for animate nouns, and both Daisy and Billy deftly navigate the complexities of marking inanimate nouns.

The present study also enhances our understanding of the properties of the input in a polysynthetic language. For example, child-directed speech in NEC seems to provide children with the necessary evidence to identify the affixal template, its morphological components, and even complex principles governing the distribution of marking for possession and obviation. Adult input may help facilitate the acquisition of inflectional morphology via Zipfian distributions of morphemes and through contrasting word forms. However, the present study

raises only the possibility of this connection, which requires much more dedicated study and statistical testing.

10.5. Some implications for Cree language communities

The findings from the present study also can inform language-focused efforts in communities such as the Cree Nation of Chisasibi.

First, these findings can aid in the creation of NEC-specific methods and tools for speech-language assessment and intervention. Speech-language pathologists (SLPs) in Chisasibi, for example, have voiced to the CCLAS project the need for resources that are linguistically and culturally appropriate and that can help them quickly and easily screen children. This includes milestones/norms for the typical development of NEC; word-, non-word, and sentence-repetition tools; lists of common words and phrases used in adult-child interactions; and metrics for measuring language development over time (e.g., mean length of utterance). SLPs also have expressed the needs for detailed information about the linguistic environment for children and the input they receive. Additionally, because SLPs in communities like Chisasibi are often not speakers of Cree, they can benefit from materials providing grammatical descriptions of NEC.

The findings from the present study also may be able to benefit language revitalization programs. As fewer and fewer children in communities like Chisasibi acquire NEC as their mother tongue, attention is turning toward programs designed to help create new generations of speakers. The Cree Language Act of Eeyou Istchee, for example, calls explicitly for measures supporting “Cree language learning and cultural activities, including language mentorship, language nest and immersion programs ...” (Grand Council of the Crees, 2019d, p. 6).

The present study provides new details on how adults speak to children acquiring NEC, which includes detailed information about the quality of input that children receive—not only word types but inflectional forms as well. This can provide information for use by language teachers and parents who may or may not themselves be fluent speakers of NEC. This information could include common words or phrases from child-directed speech to use with children. For example, phrases such *Awân û* ‘Who is this?’ and *Châkwân û* ‘What is that?’ appear hundreds of times in child-directed speech within the CCLAS corpus and can help children infer patterns related to animacy, deixis, and syntax. Helpful information for teachers and parents could also include identifying the English nouns used by the children represented in

the CCLAS corpus. This may help pinpoint particular lexical items where children are likely to switch to English, so adults can reinforce NEC input as necessary. Furthermore, the findings here may also help teachers and parents know what to expect over the course of a child's acquisition of NEC within a language immersion program. This could also include assessing the path of a given child's development and identifying areas where the child may need additional support or input.

As a final example, the findings from this dissertation could help inform language pedagogy and provide language learners with tools and strategies to master morphology that differs quite a bit from English. For example, the three straightforward principles governing the distribution of the possessive suffix *-im* (Chapter 7) could give learners an easy set of tools to begin to crack the complex code of morphology. Additionally, the prominent role of possessor obviation within this study may indicate that focusing on third-person possessors could help learners tap into the intricacies of obviative inflection.

10.5.1. Dissemination

Of course, the present study can only inform community language efforts if the information here is shared effectively and appropriately, and part of the support for this study from the Cree Nation of Chisasibi includes the expectation of “reporting research results to the Nation” (see the Appendix). In addition to pursuing future directions for research (§10.6), the next steps for this project involve reporting the results to the community.

This reporting will first involve consultation with community leadership. I will ask the Chief and Council of the Cree Nation of Chisasibi how they would like to receive reports from research results. The Cree School Board has long provided pivotal support for the CCLAS project as well as for the current study, and so I will consult with people there about sharing information too. Reports of research results could include, for example, in-person presentations in Chisasibi, a whitepaper summarizing findings, informational pamphlets, and more—whatever people would find most valuable for supporting NEC-language efforts for children, families, educators, and learners throughout the community. Conversations will also involve SLPs within Chisasibi, so we can coordinate turning research results into methods and resources that help them more effectively serve the community.

10.6. Future directions

This dissertation breaks new ground by looking at the acquisition of nominal elements within a polysynthetic language, and this is the first study to consider all three children represented in the CCLAS corpus—but much work remains to be done to explicate how children acquire nominals and their inflectional components in NEC.

For example, additional investigation of the acquisition of nominal morphology can include the recording sessions within the CCLAS corpus that are not sampled for the present study. 22 video recordings remain to be explored for Ani, 18 for Daisy, and eight for Billy.

The present study has also touched only the tip of the iceberg when it comes to demonstratives. As Chapter 5 shows, demonstratives play a crucial role in the landscape of nominal production for the adult as well as for all three children represented in the CCLAS corpus. Child-directed speech contains more than 2000 demonstrative tokens, and each child produces hundreds as well. These demonstratives not only signify referents but they also encode grammatical information such as animacy, number, and obviation. Future research can examine how the children acquire the rich NEC demonstrative system and see what this entails for their acquisition of inflectional categories.

In a similar vein, pronouns present another fruitful area of study. Personal pronouns inflect for number and clusivity, and interrogative pronouns inflect for animacy, number, and obviation. These word types can provide additional perspective on the acquisition of inflectional categories.

Outside of the CCLAS corpus, additional data would expand our understanding of the acquisition of nominal inflection as well. This could include collecting new naturalistic data from children at earlier age points, particularly from age 2;00 to 4;00, which seem to represent a crucial period in the development of NEC morphosyntax. Furthermore, new naturalistic data would also provide insight regarding potential language change/shift since the original CCLAS data collection period more than 15 years ago.

The present study relies upon naturalistic data, which represents merely one important paradigm in L1 acquisition research (Ambridge & Lieven, 2011, pp. 7–11), and other paradigms would enrich the picture of the how children acquire NEC. Experimental methods in particular would allow more precise targeting of selected aspects of NEC nominal inflection, both in comprehension and production. For example, elicited production tests would be useful for examining multiple components of the inflectional template for nouns, especially because the

children represented in the CCLAS corpus make few errors of overgeneralization. This could include asking children to produce novel possessive forms in order to determine their understanding of the principles for the distribution of the possessive suffix *-im*. Additionally, elicited production could also show how children navigate considerations of animacy and obviation in producing plural forms of nouns. As a final example, production tests that capture precise acoustical data would be quite valuable for circumventing the difficulties of detecting child production of obviative forms within the CCLAS corpus (§9.4.1.).

This dissertation has laid the foundation, and whether through the rich resources of the CCLAS corpus or through new data, we still have much to learn about how children acquire nominals and their inflectional components in NEC—and how to use this knowledge to help Cree communities strengthen the vitality of NEC and ensure that children continue to speak their traditional tongue for generations to come.

Appendix A

Table 4.6: Possible values for Possessive construction type: NEC-only constructions

Value	Definition
c1	N only
c2	DEM + noun
c3	PSR + N
c4	PSR only
c5	PSR + DEM
c6	PSR + DEM + N
c7	PSR + DEM + name

Notes. Individual nominals co-occurring in a possessive construction are separated by a plus sign <+>. DEM = demonstrative. N = noun. NEC = Northern East Cree. PSR = possessor. Values are arbitrarily labeled and ordered, and in most cases were created as new types of constructions were seen in the corpus.

Table 4.7: Possible values for Possessive construction type: ENG-only constructions

Value	Definition
e1	POSS.PRO only
e2	POSS.PRO + N/name

Notes. Individual nominals co-occurring in a possessive construction are separated by a plus sign <+>. ENG = English. N = noun. POSS.PRO = possessive pronoun. Values are arbitrarily labeled and ordered, and in most cases were created as new types of constructions were seen in the corpus.

Table 4.8: Values for Possessive construction type: Mixed-language constructions

Value	Definition
m2	ENG.N w/ NEC.INFL
m4	ENG.N w/ NEC.INFL & ENG.INFL
m5	ENG.POSS.PRO + ENG.N w/ NEC.INFL & ENG.INFL
m6	NEC.PSR + ENG.N w/ NEC.INFL
m7	NEC.PSR + NEC.DEM + ENG.N w/ NEC.INFL
m8	NEC.DEM + ENG.N w/ NEC.INFL
m10	PSR + ENG.N w/ NEC.INFL
m11	NEC.PSR + NEC.DEM + ENG.POSS.PRO + ENG.N w/o INFL
m12	NEC.PSR + ENG.POSS.PRO + ENG.N w/o INFL
m13	NEC.PSR + ENG.N w/ ENG.INFL
m14	NEC.PSR + ENG.N w/o INFL
m15	NEC.PSR + NEC.DEM + ENG.N w/o INFL
m16	ENG.POSS.PRO + ENG.N w/ NEC.INFL
m17	NEC.DEM + ENG.N w/ NEC.INFL + NEC.N w/ NEC.INFL

Notes. Individual nominals co-occurring in a possessive construction are separated by a plus sign <+>. The symbol <w/> means “with”, and <w/o> means “without”. DEM = demonstrative. The symbol <&> means “and” to signify co-occurring elements within a nominal. ENG = English. INFL = inflection. N = noun. NEC = Northern East Cree. PSR = possessor. The values are arbitrarily labeled and ordered, and in most cases were created as new types of constructions were seen in the corpus

Table 4.9: Possible values for Nominal category

Value	Definition
1	NEC common noun
2	NEC demonstrative
3	NEC pronoun
4	Proper noun or name
5	ENG common noun
6	ENG demonstrative
7	ENG pronoun
8	Mixed-language nominal that contains both NEC and ENG elements

Notes. ENG = English. NEC = Northern East Cree.

Table 4.10: Variables associated w/ Nominal category 1: NEC common noun

Variable	Possible value	Description of value	Form(s) of value
Noun stem	na	animate	n/a
	nad	animate dependent	n/a
	ni	inanimate	n/a
	nid	inanimate dependent	n/a
	nap	animate particle	n/a
	nip	inanimate particle	n/a
Final suffix	3	animate proximate singular	-∅
	3p	animate proximate plural	-(i)ch
	3'	animate obviative	-h
	0	inanimate proximate singular	-∅
	0p	inanimate proximate plural	-h
	0'	inanimate obviative singular	-(i)yi <u>u</u> , -∅
	0'p	inanimate obviative plural	-h
loc	locative	-(i)hch	
Person prefix	p1	first-person prefix	n-, ni-, nit-, ∅- (_ /n/)
	p2	second-person prefix	ch-, chi-, chit-
	p3	third-person prefix	u-, ut-, ∅- (_ /u/), w- (_ /i:/)
	pu	unspecified-person prefix	mi-, mit-
-im suffix	im	suffix required + present	-(i)m
	nim	suffix not required + not present	n/a
Possessor suffix	ppn	suffix not required + not present	n/a
	pp'	obviative possessor suffix	-(i)yi <u>u</u>
	ppexcl	first-person plural exclusive	-(i)nân, -ân (/n/ _)
	ppincl	first-person plural inclusive	-(i)niu, -iu (/n/ _)
	pp	second- or third-person plural	-(i)wâu

Notes. w/ = with. NEC = Northern East Cree. Each nominal is coded with only one possible value per variable. Errors of omission are coded by prefixing <o> before the value. Errors of commission are coded by prefixing <c> before the value. The column Form(s) of value displays the possible surface form(s) of an affix, in NEC roman orthography. This table adapts Collette (2014); Junker & MacKenzie (2003); Junker et al. (2012); and Junker et al. (2013b).

Table 4.11: Variables associated w/ Nominal category 2: NEC demonstrative

Variable	Possible value	Description of value	Form(s) of value
Function	pr	pronominal	n/a
	eq	equational	n/a
	ad	adnominal	n/a
Suffix	dns	suffix not required + not present	n/a
	d3p	animate proximate plural	-(i)chî
	d3'	animate obviative	-(i)yâh, -(i)yâyiuh
	dp0	inanimate proximate plural	-(i)hî
	d0'	inanimate obviative singular	-(i)yâ, -(i)yâyiu
	d0'p	inanimate obviative plural	-(i)yâh, -(i)yâyiuh

Notes. w/ = with. NEC = Northern East Cree. Each nominal is coded with only one possible value per variable. Errors of omission are coded by prefixing <o-> before the value. Errors of commission are coded by prefixing <c-> before the value. The column Form(s) of value displays the possible surface form(s) of an affix, in NEC roman orthography. This table adapts Collette (2014); Junker & MacKenzie (2003); Junker et al. (2012); and Junker et al. (2013b).

Table 4.12: Variables associated w/ Nominal category 3: NEC pronoun

Variable	Possible value	Description of value	Form(s) of value
Person	pro1	first-person	nîyi
	pro2	second-person	chîyi
	pro3	third-person proximate	wîyi
	proi	interrogative	awân, châkwân
Suffix	prons	suffix not required + not present	n/a
	propl	second- or third-person plural	-wâu
	proexcl	first-person plural exclusive	-ân
	proincl	first-person plural inclusive	-âniuh
	pro3p	animate proximate plural	-ichî
	pro3'	animate obviative	-yiuh
	pro0p	inanimate proximate plural	-ihî
	pro0'	inanimate obviative singular	-yiu
	pro0'p	inanimate obviative plural	-yiuh
	loc	locative	-(i)hch

Notes. w/ = with. NEC = Northern East Cree. Each nominal is coded with only one possible value per variable. Errors of omission are coded by prefixing <o-> before the value. Errors of commission are coded by prefixing <c-> before the value. The column Form(s) of value displays the possible surface form(s) of a stem or affix, in NEC roman orthography. This table adapts Collette (2014); Junker & MacKenzie (2003); Junker et al. (2012); and Junker et al. (2013b).

Table 4.13: Variables associated w/ Nominal category 4: Proper noun or name

Variable	Possible value	Description of value	Form(s) of value
Language	cre	NEC proper noun or name	n/a
	eng	ENG proper noun or name	n/a
	neu	language-neutral proper noun or name	n/a
Inflection	pno	inflection not required + not present	n/a
	ps	ENG possessive clitic -'s	-'s
	3p	NEC animate proximate plural suffix	-(i)ch
	3'	NEC animate obviative suffix	-h
	loc	NEC locative suffix	-(i)hch

Notes. w/ = with. ENG = English. NEC = Northern East Cree. Each nominal is coded with only one possible value per variable. Errors of omission are coded by prefixing <o-> before the value. Errors of commission are coded by prefixing <c-> before the value. The column Form(s) of value displays the possible surface form(s) of a clitic or affix, in English or NEC roman orthography. This table adapts Collette (2014); Junker & MacKenzie (2003); Junker et al. (2012); and Junker et al. (2013b).

Table 4.14: Variables associated w/ Nominal category 5: ENG common noun

Variables associated with Nominal category 5: ENG common noun

Variable	Possible value	Description of value	Form(s) of value
Noun stem	eng	ENG noun stem	n/a
Plural suffix	plno	plural suffix not required + not present	n/a
	pl	plural suffix required + present	-s, -es
Possessive -'s	sno	possessive clitic -'s not required + not present	n/a
	syes	possessive clitic -'s required + present	-'s

Notes. w/ = with. ENG = English. Each nominal is coded with only one possible value per variable. Errors of omission are coded by prefixing <o-> before the value. Errors of commission are coded by prefixing <c-> before the value. The column Form(s) of value displays the possible surface form(s) of a clitic or affix, in English orthography.

Table 4.15: Variables associated w/ Nominal category 6: ENG demonstrative

Variable	Possible value	Description of value	Form(s) of value
Function	pr	pronominal	n/a
	eq	equational	n/a
	ad	adnominal	n/a

Notes. w/ = with. ENG = English. Each nominal is coded with only one possible value per variable.

Table 4.16: Variables associated w/ Nominal category 7: ENG pronoun

Variable	Possible value	Description of value	Form(s) of value
Case	nom	nominative	various
	acc	accusative	various
	poss	possessive	various
Person	pro1	first-person	various
	pro2	second-person	various
	pro3	third-person	various
	proi	interrogative	who, whose, what
Number	prosg	singular pronoun	various
	prop1	plural pronoun	various
Gender	prom	masculine pronoun	various
	prof	feminine pronoun	various
	pron	neuter pronoun	it, its
	prog	no gender	I, you, they, their

Notes. w/ = with. ENG = English. Each nominal is coded with only one possible value per variable. The column Form(s) of value displays the possible surface form(s) of a stem, in English orthography, where various indicates there are too many forms to list conveniently.

Table 4.17: Variables associated w/ Nominal category 8: Mixed-language nominal

Variable	Possible value	Description of value	Form(s) of value
Noun stem	na	NEC animate	n/a
	nad	NEC animate dependent	n/a
	ni	NEC inanimate	n/a
	nid	NEC inanimate dependent	n/a
	nap	NEC animate particle	n/a
	nip	NEC inanimate particle	n/a
	eng	ENG	n/a
NEC final suffix	3	animate proximate singular	-∅
	3p	animate proximate plural	-(i)ch
	3'	animate obviative	-h
	0	inanimate proximate singular	-∅
	0p	inanimate proximate plural	-h
	0'	inanimate obviative singular	-(i)yi <u>u</u> , -∅
	0'p	inanimate obviative plural	-h
	loc	locative	-(i)hch
NEC person prefix	nop	no prefix present	n/a
	p1	first-person prefix	n-, ni-, nit-, ∅-
	p2	second-person prefix	ch-, chi-, chit-
	p3	third-person prefix	u-, ut-, ∅-, w-
	pu	unspecified-person prefix	mi-
NEC -im suffix	yesim	suffix present	-(i)m
	noim	suffix not present	n/a
NEC possessor suffix	ppn	suffix not present	n/a
	pp'	obviative possessor suffix	-(i)yi <u>u</u>
	ppexcl	first-person plural exclusive	-(i)nân, -ân
	ppincl	first-person plural inclusive	-(i)ni <u>u</u> , -i <u>u</u>
	pp	second- or third-person plural	-(i)wâ <u>u</u>
ENG plural suffix	plno	plural suffix not present	n/a
	pl	plural suffix present	-s, -es
ENG possessive -'s	sno	possessive clitic -'s not present	n/a
	syes	possessive clitic -'s present	-'s

Notes. w/ = with. ENG = English. NEC = Northern East Cree. Each nominal is coded with only one possible value per variable. Errors of omission are coded by prefixing <o-> before the value. Errors of commission are coded by prefixing <c-> before the value. The column Form(s) of value displays the possible surface form(s) of an affix or clitic, in English or NEC roman orthography. This table adapts Collette (2014); Junker & MacKenzie (2003); Junker et al. (2012); and Junker et al. (2013b).

Table 5.61: Adult nominal token production in Ani's subcorpus

Session	Child age	Session length	Utterances	Nominals	Nominals per utterance
A1.03	2;01.12	38:47	436	248	0.57
A1.06	2;03.24	37:08	453	275	0.61
A1.08	2;04.22	47:57	320	290	0.91
A1.09	2;05.14	35:13	557	217	0.39
A1.12	2;07.06	37:03	503	250	0.50
A1.15	2;08.23	51:10	663	257	0.39
A1.17	2;09.28	48:40	488	205	0.42
A1.20	2;11.16	36:30	334	198	0.59
A1.21	3;00.02	41:50	569	267	0.47
A1.24	3;02.05	38:16	589	235	0.40
A1.26	3;04.09	40:10	482	240	0.50
A1.30	3;06.23	31:52	280	166	0.59
A1.33	3;08.24	30:16	339	144	0.42
A1.35	4;00.13	36:45	323	143	0.44
A1.37	4;03.07	50:21	422	174	0.41
Totals			6,758	3,309	0.49

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.62: Adult nominal token production in Daisy's subcorpus

Session	Child age	Session length	Utterances	Nominals	Nominals per utterance
B1.01	3;08.10	35:42	533	302	0.57
B1.02	3;09.01	14:00	203	110	0.54
B1.03	3;09.22	37:13	527	246	0.47
B1.04	3;11.11	58:29	699	192	0.27
B1.05	4;00.00	37:36	499	249	0.50
B1.08	4;02.06	50:25	624	292	0.47
B1.11	4;04.04	40:03	462	202	0.44
B1.14	4;06.02	41:58	433	194	0.45
B1.17	4;07.28	43:27	493	179	0.36
B1.20	4;10.03	43:24	542	211	0.39
B1.24	5;00.20	34:30	260	99	0.38
B1.27	5;04.12	33:29	328	186	0.57
B1.30	5;07.03	32:27	275	81	0.29
B1.31	5;10.02	36:46	252	101	0.40
Totals			6,130	2,644	0.43

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.63: Adult nominal token production in Billy's subcorpus

Session	Child age	Session length	Utterances	Nominals	Nominals per utterance
B3.02	4;05.04	40:24	478	213	0.45
B3.04	4;06.08	42:25	515	341	0.66
B3.06	4;07.27	43:53	544	318	0.58
B3.07	4;08.21	33:55	252	214	0.85
B3.09	4;10.08	36:28	535	212	0.40
B3.11	5;00.13	33:05	345	190	0.55
B3.13	5;02.12	24:24	268	99	0.37
B3.14	5;03.22	28:44	289	149	0.52
B3.15	5;05.00	41:09	379	218	0.58
B3.17	5;06.27	36:15	261	135	0.52
B3.18	5;10.06	44:42	427	185	0.43
Totals			4,293	2,274	0.53

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.64: Adult noun token production in Ani's subcorpus

Session	Child age	Session length	Utterances	Nouns	Nouns per utterance
A1.03	2;01.12	38:47	436	73	0.17
A1.06	2;03.24	37:08	453	73	0.16
A1.08	2;04.22	47:57	320	56	0.18
A1.09	2;05.14	35:13	557	71	0.13
A1.12	2;07.06	37:03	503	56	0.11
A1.15	2;08.23	51:10	663	53	0.08
A1.17	2;09.28	48:40	488	44	0.09
A1.20	2;11.16	36:30	334	113	0.34
A1.21	3;00.02	41:50	569	52	0.09
A1.24	3;02.05	38:16	589	47	0.08
A1.26	3;04.09	40:10	482	55	0.11
A1.30	3;06.23	31:52	280	47	0.17
A1.33	3;08.24	30:16	339	50	0.15
A1.35	4;00.13	36:45	323	20	0.06
A1.37	4;03.07	50:21	422	37	0.09
Totals			6,758	847	0.13

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.65: Adult noun token production in Daisy's subcorpus

Session	Child age	Session length	Utterances	Nouns	Nouns per utterance
B1.01	3;08.10	35:42	533	46	0.09
B1.02	3;09.01	14:00	203	19	0.09
B1.03	3;09.22	37:13	527	96	0.18
B1.04	3;11.11	58:29	699	41	0.06
B1.05	4;00.00	37:36	499	69	0.14
B1.08	4;02.06	50:25	624	69	0.11
B1.11	4;04.04	40:03	462	55	0.12
B1.14	4;06.02	41:58	433	50	0.12
B1.17	4;07.28	43:27	493	27	0.05
B1.20	4;10.03	43:24	542	51	0.09
B1.24	5;00.20	34:30	260	22	0.08
B1.27	5;04.12	33:29	328	49	0.15
B1.30	5;07.03	32:27	275	19	0.07
B1.31	5;10.02	36:46	252	21	0.08
Totals			6,130	634	0.10

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.66: Adult noun token production in Billy's subcorpus

Session	Child age	Session length	Utterances	Nouns	Nouns per utterance
B3.02	4;05.04	40:24	478	82	0.17
B3.04	4;06.08	42:25	515	61	0.12
B3.06	4;07.27	43:53	544	105	0.19
B3.07	4;08.21	33:55	252	59	0.23
B3.09	4;10.08	36:28	535	45	0.08
B3.11	5;00.13	33:05	345	53	0.15
B3.13	5;02.12	24:24	268	46	0.17
B3.14	5;03.22	28:44	289	47	0.16
B3.15	5;05.00	41:09	379	69	0.18
B3.17	5;06.27	36:15	261	30	0.11
B3.18	5;10.06	44:42	427	59	0.14
Totals			4,293	656	0.15

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.67: Adult POSS constructions in Ani's subcorpus

Session	Child age	Utterances	Utterances containing a POSS construction	Proportion of utterances w/ a POSS construction
A1.03	2;01.12	436	24	0.06
A1.06	2;03.24	453	19	0.04
A1.08	2;04.22	320	37	0.12
A1.09	2;05.14	557	52	0.09
A1.12	2;07.06	503	24	0.05
A1.15	2;08.23	663	22	0.03
A1.17	2;09.28	488	23	0.05
A1.20	2;11.16	334	1	< 0.01
A1.21	3;00.02	569	33	0.06
A1.24	3;02.05	589	26	0.04
A1.26	3;04.09	482	11	0.02
A1.30	3;06.23	280	20	0.07
A1.33	3;08.24	339	9	0.03
A1.35	4;00.13	323	8	0.02
A1.37	4;03.07	422	7	0.02
Totals		6,758	316	0.05

Notes. POSS = possessive. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.68: Adult POSS constructions in Daisy's subcorpus

Session	Child age	Utterances	Utterances containing a POSS construction	Proportion of utterances w/ a POSS construction
B1.01	3;08.10	533	12	0.02
B1.02	3;09.01	203	12	0.06
B1.03	3;09.22	527	23	0.04
B1.04	3;11.11	699	28	0.04
B1.05	4;00.00	499	15	0.03
B1.08	4;02.06	624	19	0.03
B1.11	4;04.04	462	15	0.03
B1.14	4;06.02	433	24	0.06
B1.17	4;07.28	493	12	0.02
B1.20	4;10.03	542	26	0.05
B1.24	5;00.20	260	8	0.03
B1.27	5;04.12	328	12	0.04
B1.30	5;07.03	275	5	0.02
B1.31	5;10.02	252	7	0.03
Totals		6,130	218	0.04

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 5.69: Adult POSS constructions in Billy's subcorpus

Session	Child age	Utterances	Utterances containing a POSS construction	Proportion of utterances w/ a POSS construction
B3.02	4;05.04	478	23	0.05
B3.04	4;06.08	515	24	0.05
B3.06	4;07.27	544	32	0.06
B3.07	4;08.21	252	31	0.12
B3.09	4;10.08	535	12	0.02
B3.11	5;00.13	345	27	0.08
B3.13	5;02.12	268	12	0.04
B3.14	5;03.22	289	22	0.08
B3.15	5;05.00	379	27	0.07
B3.17	5;06.27	261	11	0.04
B3.18	5;10.06	427	36	0.08
Totals		4,293	257	0.06

Notes. Session = the name of the recording session within the CCLAS corpus. Child age = the age of the child for the recording session, using the format *years;months.days*. Session length = the run time of the video recording, using the format *minutes:seconds*.

Table 6.25: All NEC alienable nouns occurring w/ and w/o a prefix, in adult production

Type	Gloss	Tokens w/ person prefix	Tokens w/o person prefix	Total
pîpî	baby	24	42	66
misinihîkin	book	11	38	49
tâhtipiwin	chair	22	25	47
mâtiwâkin	toy, game	13	29	42
utâpânâskw	car, vehicle	8	25	33
akuhp	coat	31	1	32
piyichîs	pants	22	2	24
achimushish	puppy	1	21	22
nimâs	fish	1	21	22
minihkwâkin	cup	5	16	21
mischisin	shoe	20	1	21
pichiwiyan	shirt	19	1	20
awâshishihkânish	doll	5	13	18
chiskutimâchâsiu	teacher	15	3	18
wâskâhîkin	house	1	16	17
tûhwân	ball	1	14	15
ishkwâshish	girl	1	12	13
mîchim	food	9	4	13
ashtutin	hat	8	4	12
mâmâpisun	swing	4	8	12
îyiyihkânish	figurine	1	10	11
âmihkwân	spoon	1	9	10
pîywâshikin	sock	5	5	10
âihkunâu	cake	2	7	9
atim	dog	3	6	9
chîmân	boat	4	5	9
pîsimuhkân	clock	1	8	9
wîhkwâyâ	sock	3	5	8
nipâwin	bed	5	1	6
tî	tea	1	5	6
wâshtânimâkin	light, candle	1	5	6
misinâpiskihîkin	camera	1	4	5
sisis	scissors	1	4	5
chûchû	bottle	2	2	4
kwâhpî	coffee	1	3	4
ût	canoe	2	2	4
wâpinichâwin	garbage	1	3	4
âpihîkin	key	1	1	2
nituhkuyin	medicine	1	1	2
Total		258	382	640

Notes. w/ = with. w/o = without.

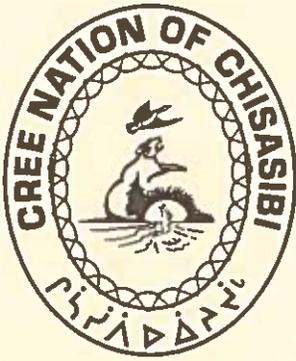
Table 7.44: NEC nouns as possessives outside of the top 25, in adult production

Type	Gloss	Category	Total tokens per type	
			+ -im	- -im
ashtutin	hat	ni	0	8
îwit	bag	nid	0	8
utâpânâskw	car, vehicle	na	0	8
tun	mouth	nid	0	6
awâshishihkânish	doll	na	5	0
châkwân	thing	ni	5	0
minihkwâkin	cup	ni	0	5
nipâwin	bed	ni	0	5
pîywâshikin	sock	ni	0	5
âshtimihkw	face	nid	0	4
chîmân	boat	ni	0	4
ischis	mitten	na	0	4
îshtâu	cousin	nad	0	4
kânichî	sweater	ni	4	0
mâmâpisun	swing	ni	0	4
sis	uncle	nad	0	4
skât	leg	nid	0	4
stâs	older brother	nad	0	4
atim	dog	na	0	3
skut	nose	nid	0	3
tâpishâhun	earring	na	0	3
wîhkwâyâ	sock	ni	3	0
Var. (2)	n/a	n/a	2	0
Var. (10)	n/a	n/a	0	2
Var. (9)	n/a	n/a	1	0
Var. (15)	n/a	n/a	0	1

Notes. NEC = Northern East Cree. na = animate noun. ni = inanimate noun. d = “dependent”, a term for inalienable possession in Algonquian literature. Var. = Multiple noun types occur with the same number of tokens, with the number of types is indicated in parentheses. n/a = not applicable.

Appendix B

The following three pages contain the support letter (Subject: Dissertation Research Project) and Band Council Resolution from the Cree Nation of Chisasibi (No. 2019-109: “Support for Ryan Henke’s Research Project”) that support this dissertation.



Cree Nation of Chisasibi

Chisasibi (Quebec)

August 16, 2019

Ryan Henke
University of Hawaii
1890 East-West Rd.
Honolulu, HI, USA
96822

Subject: Dissertation Research Project

Dear Ryan,

Please consider this as a support letter for your Dissertation research project that you wish to commence in the community of Chisasibi.

We are aware that the project is ready to begin. Moreover, the program will surely provide a myriad of benefits some of which are but not limited to the following:

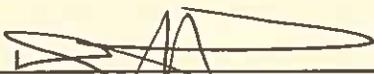
- Part time economic opportunity for adult speakers who work with you;
- Reporting the results of the research to the Nation;
- Helping to create the kinds of language tools and resources desired by people in the community;
- Can also contribute to creating the kinds of language tools and resources desired by people in the community;
- And much more.

The Cree Nation of Chisasibi fully endorses your Dissertation research project from Memorial University as well as the University of Hawaii that you wish to conduct in the community of Chisasibi, Quebec.

We wish you continued success in your endeavour!

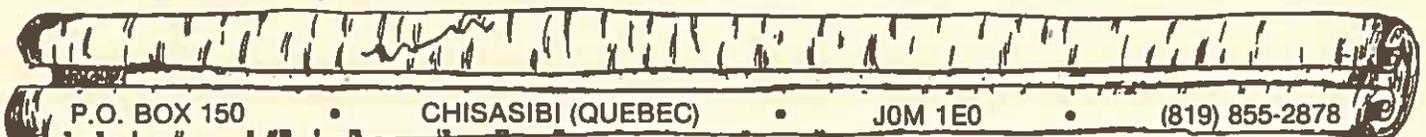
Yours truly,

CREE NATION OF CHISASIBI



Daisy House, Deputy Chief

cc. Chief Davey Bobbish & Council





Cree Nation of Chisasibi

Chisasibi (Quebec)

COUNCIL RESOLUTION

No. 2019-109

Page 1 of 2

SUBJECT: Support for Ryan Henke's Research Project

PROPOSED BY:

Lily Napash

SECONDED BY:

Kevin House

ACTION:

Carried

Certified true copy of a resolution adopted on July 3, 2019

Christina Kitty
Corporate Secretary

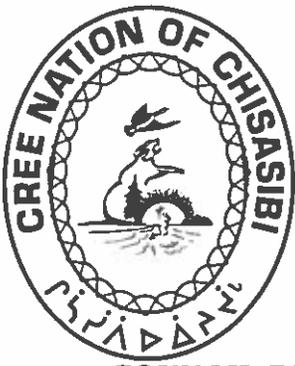
WHEREAS the Cree Nation of Chisasibi and its leadership continue to seek ways to preserve and strengthen the Cree language, which is an integral part of the community's heritage, culture, traditions, beliefs, and values;

WHEREAS Mr. Henke's research project helps shed light on how children learn to speak the Cree language as their mother tongue;

WHEREAS Mr. Henke's project is part of the Chisasibi Child Language Acquisition Study (CCLAS), which was initiated with the support of the Cree School Board and with permission from the Cree Nation of Chisasibi;

WHEREAS CCLAS has received support from the Cree School Board, the Anjabowa Childcare Centres, and the Social Sciences and Humanities Council (SSHRC) for Canada, and operates only with annual approval from Memorial University's Interdisciplinary Committee on Ethics in Human Research;

WHEREAS Mr. Henke and his colleagues Dr. Julie Brittain and Dr. Marguerite MacKenzie have met with the Speech-Language Pathologist from the Cree Health Board and with staff from Education Services



COUNCIL RESOLUTION

No. 2019-109

Page 2 of 2

at the Cree School Board about CCLAS research findings and how CCLAS can continue to benefit the community of Chisasibi:

WHEREAS Mr. Henke has explained in a letter to the Chief, Deputy Chief, and the Cree Nation of Chisasibi Council the details of his research project and how this project can offer specific benefits for the community of Chisasibi;

BE IT THEREFORE RESOLVED:

THAT the Council of the Cree Nation of Chisasibi fully supports and approves Mr. Henke's dissertation research project

Appendix C

The following two pages contain a letter from Dr. Julie Brittain, dated November 2018, which was written in support of my successful application for the National Science Foundation Doctoral Dissertation Research Improvement Grant (DDRIG) from the Documenting Endangered Language Program (DEL). (Award number: 1912062.) This letter confirms that I have access to the CCLAS corpus.



Faculty of Humanities and Social Sciences

To: Dr. Andrea Berez-Kroeker, Department of Linguistics, University of Hawai'i at Mānoa, 1890 East-West Road, Moore Hall 569, Honolulu, HI 96822

From: Dr. Julie Brittain, Department of Linguistics, Memorial University, St John's, NL A1B 3X9

Re: Letter of support regarding Ryan E. Henke's application to the Documenting Endangered Language Program for a Doctoral Dissertation Research Improvement Grant.

November 6, 2018

I'm very pleased to provide this letter of support for Ryan Henke's application for a Doctoral Dissertation Research Improvement Grant (DDRIG). The requested funding would support the continuation of Ryan's doctoral work on Northern East Cree, which takes as its focus data collected by the Chisasibi Child Language Acquisition Study (CCLAS, www.mun.ca/cclas). I am the project director for CCLAS, and have been since its inception in 2004. As CCLAS director and a member of Ryan's dissertation committee, I can confirm that CCLAS has granted Ryan permission to work with CCLAS data, will help connect Ryan with speakers in Chisasibi, and can provide additional support for his project, such as consultation and workspace. In 2018 we provided Ryan with office space in our department, access to our Speech Sciences and Language Acquisition Laboratory, and to the MU QE2 Library. Throughout the course of his proposed dissertation project, we will be pleased to provide Ryan with these same facilities.

I have worked with Ryan for several years now, most recently and substantively this past summer when he came to St John's to work with myself and my colleague (and principal CCLAS team member) Yvan Rose. During this time Ryan was able to share with my colleagues and I the work he has been doing on the acquisition of possessive constructions, as well as more recent research on the demonstrative system. As attested by his numerous presentations to date, Ryan has made impressive inroads in a short period of time into these areas, contributing original and important research findings to the field. We are all excited to see Ryan's work as it progresses.

While Ryan was on campus with us, Cree language consultant [Margaret] joined us for a week. Ryan and [Margaret] worked together during this time to undertake fieldwork that is crucial to Ryan's research, work which is, I should stress, also contributing the documentation of East Cree. Cree in general is under-described; more particularly, East Cree, the dialect spoken in the James Bay area of Quebec, is urgently in need of documentation at this point in its history when there are so few native speakers. The funds Ryan requests in this application would enable him to continue this excellent work with [Margaret], and with other language consultants in Chisasibi and elsewhere.

The fieldwork to be supported by this funding will also enable Ryan to generate additional documentation within the CCLAS project. Recordings and notes from his work with linguistic consultants (e.g., to elicit target forms, to check the grammatical and semantic details of child utterances) will be integrated into the CCLAS project and archived at Kaipuleohone, the digital language archive of the University of Hawai'i. Importantly, Ryan's work on the CCLAS corpus advances our work to prepare the CCLAS corpora for public release through CHILDES/PhonBank.

The requested funding will also enable Ryan to work in-person with the CCLAS team in St. John's. We regard Ryan's research as one of our current key projects. I think it's important for him to be able to come to St John's and spend time with us; not only does this afford us the opportunity to strategize and consult

with each other in person, but it allows Ryan to spend time with me – I am the Cree language expert in his doctoral supervisory team.

Finally, since Ryan came to work with us this summer we have welcomed Dr Nicholas Welch to our department. Dr. Welch is the Canada Research Chair in Change, Adaptation, and Revitalization of Aboriginal Languages. A principal focus of his research is Cree-Innu-Naskapi and thus we really look forward to introducing these two linguists to each other in St John's. Ryan has a tremendous energy and enthusiasm for his research, and he is a meticulous and gifted fieldworker. Research funding is in short supply – I am confident that whatever monies are provided to Ryan Henke will be utilized with the utmost care and regard for best practices in the documentation of endangered languages.

Sincerely,



Julie Brittain, Ph.D.
Associate Professor
Department of Linguistics

References

- Ahenakew, F. (1987). *Cree language structures: A Cree approach*. Winnipeg: Pemmican.
- Allen, S. E. M. (1996). *Aspects of Argument Structure Acquisition in Inuktitut*. John Benjamins.
- Allen, S. E. M. (2017). Polysynthesis in the acquisition of Inuit languages. In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 449–472). Oxford University Press.
- Allen, S. E. M., & Dench, C. (2015). Calculating mean length of utterance for eastern Canadian Inuktitut. *First Language*, 35(4–5), 377–406.
- Ambridge, B., & Lieven, E. V. M. (2011). *Child language acquisition: Contrasting theoretical approaches*. Cambridge University Press.
- Anderson, A. (2015). *In search of an effective method of measuring First Nations children's speech and language development* [PhD dissertation]. University of Toronto.
- Argus, R. (2009). The early development of case and number in Estonian. In U. Stephany & M. D. Voeikova (Eds.), *Development of nominal inflection in first language acquisition: A cross-linguistic perspective* (pp. 111–151). Mouton de Gruyter.
- Baker, M. C. (1988). *Incorporation: A theory of grammatical function changing*. University of Chicago Press.
- Baker, M. C. (1996). *The polysynthesis parameter*. Oxford University Press.
- Ball, J. (2009). Supporting young indigenous children's language development in Canada: A review of research on needs and promising practices. *Canadian Modern Language Review*, 66(1), 19–47.
- Ball, J., & Bernhardt, B. M. (2008). First Nations English dialects in Canada: Implications for speech-language pathology. *Clinical Linguistics & Phonetics*, 22(8), 570–588.

- Ball, J., & Bernhardt, B. M. H. (2012). Standard English as a second dialect: A Canadian perspective. In A. Yiakoumetti (Ed.), *Harnessing linguistic variation for better education* (pp. 189–226). Peter Lang Publishing.
- Ball, J., & Lewis, M. (2005). What can speech-language partners contribute to Aboriginal early childhood development? *Research Connections Canada: Supporting Children and Families*, 12, 21–40.
- Bavin, Edith Laura, & Shopen, T. (1991). Warlpiri in the 80s: An overview of research into language variation and child language. In S. Romaine (Ed.), *Language in Australia* (pp. 104–117). Cambridge University Press.
- Blasingham, E. J. (1956a). The depopulation of the Illinois Indians: Part 1. *Ethnohistory*, 3(3), 193–224.
- Blasingham, E. J. (1956b). The depopulation of the Illinois Indians, Part 2. *Ethnohistory*, 3(4), 361–412.
- Bliss, H. (2005). Topic, focus, and point of view in Blackfoot. In J. Alderete, C. Han, & A. Kochetov (Eds.), *Proceedings of the 24th West Coast Conference on Formal Linguistics* (pp. 61–69). Cascadilla Proceedings Project.
- Blom, E. (2018). Morphological Theory and First Language Acquisition. In J. Audring & F. Masini (Eds.), *The Oxford Handbook of Morphological Theory* (pp. 511–521). Oxford University Press.
- Bloomfield, L. (1946). Algonquian. *Linguistic Structures of Native America*, 6, 85–129.
- Bowerman, M. (2010). Linguistic typology and first language acquisition. In J. J. Song (Ed.), *The Oxford Handbook of Linguistic Typology* (pp. 591–616). Oxford University Press.

- Braine, M. D. S., & Bowerman, M. (1976). Children's first word combinations. *Monographs of the Society for Research in Child Development*, 41(1), 1–104.
- Brittain, J. (2001). *The morphosyntax of the Algonquian conjunct verb: A minimalist approach*. Garland.
- Brittain, J., Dyck, C., Rose, Y., & MacKenzie, M. (2007). The Chisasibi Child Language Acquisition Study (CCLAS): A progress report. In H. C. Wolfart (Ed.), *Papers of the 38th Algonquian Conference* (pp. 1–17). University of Manitoba.
- Brittain, J., & MacKenzie, M. (2010). The Future of Cree. In E. Faries, M. MacKenzie, J. Brittain, L. Morris, S. Demers, M.-O. Junker, E. Chiskamish, N. Dostaler, & S. Runnels (Eds.), *Research Report: Cree School Board Language of Instruction Evaluation* (pp. 1–13). Cree School Board of Quebec.
- Brown, P. (1998). Children's first verbs in Tzeltal: Evidence for an early verb category. *Linguistics*, 36(4), 713–753.
- Brown, R. (1973). *A first language: The early stages*. Harvard University Press.
- Bryant, K. D. (2013). *The development of segmental phonology in a mixed language environment: A case study from Northern East Cree* [MA thesis]. Memorial University of Newfoundland.
- Bybee, J. L. (2010). *Language, usage and cognition*. Cambridge University Press.
- Bybee, J. L., & Beckner, C. (2015). Usage-based theory. In B. Heine & H. Narrog (Eds.), *The Oxford Handbook of Linguistic Analysis* (pp. 953–980). Oxford University Press.
- Casagrande, J. B. (1948). Comanche baby language. *International Journal of American Linguistics*, 14(1), 11–14.

- Casillas, M., Brown, P., & Levinson, S. C. (2019). Early language experience in a Tzeltal Mayan village. *Child Development, 00*, 1–17.
- Catalogue of Endangered Languages. (2020). *East Cree*. University of Hawaii at Manoa.
www.endangeredlanguages.com/lang/2165
- Chandler, M. J., & Lalonde, C. E. (1998). Cultural Continuity as a hedge against suicide in Canada's First Nations. *Transcultural Psychiatry, 35*(2), 191–219.
- Chandler, M. J., & Lalonde, C. E. (2008). Cultural continuity as a moderator of suicide risk among Canada's First Nations. In L. J. Kirmayer & G. G. Valaskakis (Eds.), *Healing traditions: The mental health of Aboriginal peoples in Canada* (pp. 221–248). University of British Columbia Press.
- Chee, M. R. (2017). *A longitudinal cross-sectional study on the acquisition of Navajo verbs in children aged 4 years through 11 years* [PhD dissertation]. University of New Mexico.
- Chilisa, B. (2012). *Indigenous Research Methodologies*. Sage Publications.
- Choi, S., & Gopnik, A. (1995). Early acquisition of verbs in Korean: A cross-linguistic study. *Journal of Child Language, 22*, 497–529.
- Chomsky, N. (1993). *Lectures on Government and Binding: The Pisa Lectures*. Mouton de Gruyter.
- Chomsky, N. (1995). *The Minimalist Program*. MIT Press.
- Clahsen, H. (1999). Lexical entries and rules of language: A multidisciplinary study of German inflection. *Behavioral and Brain Sciences, 22*(6), 991–1013.
- Clahsen, H., Rothweiler, M., Woest, A., & Marcus, G. F. (1992). Regular and irregular inflection in the acquisition of German noun plurals. *Cognition, 45*(3), 225–255.

- Clancy, P. M. (1985). The Acquisition of Japanese. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition, volume 1: The data* (pp. 373–524). Lawrence Erlbaum Associates, Inc.
- Clark, E. V. (2001). Emergent categories in first language acquisition. In M. Bowerman & S. C. Levinson (Eds.), *Language acquisition and conceptual development* (pp. 379–405). Cambridge University Press.
- Clark, E. V. (2009). *First Language Acquisition, 2nd Edition*. Cambridge University Press.
- Clark, E. V. (2015). Linguistic units in language acquisition. In B. Heine & H. Narrog (Eds.), *The Oxford Handbook of Linguistic Analysis* (pp. 27–42). Oxford University Press.
- Coe, K., Attakai, A., Papenfuss, M., Giuliano, A., Martin, L., & Nuvayestewa, L. (2004). Traditionalism and its relationship to disease risk and protective behaviors of women living on the Hopi reservation. *Health Care for Women International*, 25(5), 391–410.
- Collette, V. (2014). *Description de la morphologie grammaticale du cri de l'Est (dialecte du Nord, Whapmagoostui)* [PhD dissertation]. Université Laval.
- Collette, V. (2018). *Morphology and morphosyntax of eastern James Bay Creenglish* [Conference paper]. 50th Algonquian Conference, University of Alberta.
- Cook, E.-D. (2006). The patterns of consonantal acquisition and change in Chipewyan (Dëne Sų́líné). *International Journal of American Linguistics*, 72(2), 236–263.
- Courtney, E. H., & Saviile-Troiike, M. (2002). Learning to construct verbs in Navajo and Quechua. *Journal of Child Language*, 29(03), 623–654.
- Dahlstrom, A. (1991). *Plains Cree Morphosyntax*. Garland.

- Dahlstrom, A. (1996). Narrative structure of a Fox text. In J. D. Nichols & A. C. Ogg (Eds.), *nikotwâsik iskwâhtêm, pâskihtêpayih! Studies in Honour of H. C. Wolfart* (pp. 113–162). Algonquian and Iroquoian Linguistics.
- Dahlstrom, A. (2015). *Obviation and information structure in Meskwaki*. Society for the Study of the Indigenous Languages of the Americas, Winter 2015 Meeting.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.731.1907&rep=rep1&type=pdf>
- De León, L. (1999). Verbs in Tzotzil (Mayan) early syntactic development. *International Journal of Bilingualism*, 3(2–3), 219–239.
- Deen, K. U. (2012). The morphosyntax interface. In Edith L. Bavin (Ed.), *The Cambridge Handbook of Child Language* (pp. 259–280). Cambridge University Press.
- Diessel, H. (1999). *Demonstratives: Form, function and grammaticalization*. John Benjamins Publishing.
- Diessel, H. (2013). Construction Grammar and first language acquisition. In T. Hoffmann & G. Trousdale (Eds.), *The Oxford Handbook of Construction Grammar* (pp. 347–364). Oxford University Press.
- Drapeau, L. (1991). *Dictionnaire Montagnais Français*. Presses de l'Université du Québec.
- Drapeau, L. (2014). *Grammaire de la langue innue*. Presses de l'Université du Québec.
- Drapeau, L. (2017). Innu (Algonquian). In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 560–582). Oxford University Press.
- Dyck, C., Brittain, J., & MacKenzie, M. (2006). Northern East Cree accent. In C. Gurski & M. Radišić (Eds.), *Proceedings of the 2006 annual conference of the Canadian Linguistic Association*. York University.

- Eisenbeiß, S., Matsuo, A., & Sonnenstuhl, I. (2009). Learning to encode possession. In W. B. McGregor (Ed.), *The Expression of Possession* (pp. 143–212). Mouton de Gruyter.
- Feurer, H. (1980). Morphological development in Mohawk. In *Papers and reports on child language development, volume 18* (pp. 25–42). Department of Linguistics, Stanford University.
- Field, A., Miles, J., & Field, Z. (2012). *Discovering statistics using R*. Sage.
- Forshaw, W. (2016). *Little kids, big verbs: The acquisition of Murrinhpatha bipartite stem verbs* [PhD dissertation]. University of Melbourne.
- Forshaw, W., Davidson, L., Kelly, B., Nordlinger, R., Wigglesworth, G., & Blythe, J. (2017). The acquisition of Murrinh-Patha. In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 473–494). Oxford University Press.
- Fortescue, M. (1984). Learning to speak Greenlandic: A case study of a two-year-old's morphology in a polysynthetic language. *First Language*, 5(14), 101–112.
- Fortescue, M. (2017). What are the limits of polysynthesis? In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 115–134). Oxford University Press.
- Fortescue, M., Mithun, M., & Evans, N. (2017a). Introduction. In *The Oxford Handbook of Polysynthesis* (pp. 1–16). Oxford University Press.
- Fortescue, M., Mithun, M., & Evans, N. (Eds.). (2017b). *The Oxford Handbook of Polysynthesis*. Oxford University Press.
- Fortescue, M., & Olsen, L. L. (1992). The acquisition of West Greenlandic. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition, volume 3* (pp. 111–220). Lawrence Erlbaum Associates, Inc.

- Frohlich, K. L., Ross, N., & Richmond, C. (2006). Health disparities in Canada today: Some evidence and a theoretical framework. *Health Policy*, 79, 132–143.
- Fulford, G. T. (Ed.). (2007). *Sharing our success: More case studies in Aboriginal schooling*. Society for the Advancement of Excellence in Education.
- Garro, L. C. (1995). Individual or societal responsibility? Explanations of diabetes in an Anishinaabe (Ojibway) community. *Social Science & Medicine*, 40(1), 37–46.
- Garro, L. C. (1996). Intracultural variation in causal accounts of diabetes: A comparison of three Canadian Anishinaabe (Ojibway) communities. *Culture, Medicine and Psychiatry*, 20(4), 381–420.
- Gelman, S. A., Manczak, E. M., & Noles, N. S. (2012). The nonobvious basis of ownership: Preschool children trace the history and value of owned objects. *Child Development*, 83(5), 1732–1747.
- Genesee, F., Nicoladis, E., & Paradis, J. (1995). Language differentiation in early bilingual development. *Journal of Child Language*, 22(3), 611–631.
- Gentner, D., & Boroditsky, L. (2009). Early acquisition of nouns and verbs: Evidence from Navajo. In V. C. M. Gathercole (Ed.), *Routes to language: Studies in honor of Melissa Bowerman* (pp. 5–32). Routledge.
- Goddard, I. (1990). Aspects of the topic structure of Fox narratives: Proximate shifts and the use of overt and inflectional NPs. *International Journal of American Linguistics*, 56(3), 317–340.
- Goddard, I. (2002). Grammatical gender in Algonquian. In H. C. Wolfart (Ed.), *Papers of the 33rd Algonquian Conference* (pp. 195–231). University of Manitoba.

- Goldberg, A. E. (1995). *Constructions: A Construction Grammar approach to argument structure*. University of Chicago Press.
- Goldberg, A. E., Casenhiser, D. M., & Sethuraman, N. (2004). Learning argument structure generalizations. *Cognitive Linguistics*, 15(3), 289–316.
- Golinkoff, R. M., & Markessini, J. (1980). “Mommy sock”: The child’s understanding of possession as expressed in two-noun phrases. *Journal of Child Language*, 7(1), 119–135.
- Gracey, M., & King, M. (2009). Indigenous health part 1: Determinants and disease patterns. *Lancet*, 374(9683), 65–75–65–75.
- Grand Council of the Crees. (2019a). *Chisasibi*. Cree Nation Government.
<https://cngov.ca/community-culture/communities/chisasibi/>
- Grand Council of the Crees. (2019b). *Language*. Cree Nation Government.
<https://cngov.ca/community-culture/language/>
- Grand Council of the Crees. (2019c). *The Eeyou of Eeyou Istchee*. Cree Nation Government.
<https://cngov.ca/community-culture/communities/>
- Grand Council of the Crees. (2019d). *Cree Nation Government Bill 1: An Act respecting the Cree language of Eeyou Istchee*. <https://www.cngov.ca/wp-content/uploads/2019/09/cng-cree-language-act-final-sep-17-19.pdf>
- Guasti, M. T. (2002). *Language acquisition: The growth of grammar*. MIT Press.
- Gülzow, I., & Gagarina, N. (Eds.). (2011). *Frequency effects in language acquisition: Defining the limits of frequency as an explanatory concept*. Walter de Gruyter.
- Hack, J., & Mellow, J. D. (2007). A functional analysis of the acquisition of Oji-Cree (Severn Ojibwe). In H. C. Wolfart (Ed.), *Papers of the 38th Algonquian Conference* (pp. 273–288). University of Manitoba.

- Hallett, D., Chandler, M. J., & Lalonde, C. E. (2007). Aboriginal language knowledge and youth suicide. *Cognitive Development*, 22(3), 392–399.
- Hasler, L. A. (2002). *Obviation in two Innu-Aimun atanukana* [PhD dissertation]. Memorial University of Newfoundland.
- Haspelmath, M. (2018). The last word on polysynthesis: A review article. *Linguistic Typology*, 22(2), 307–326.
- Hay, D. F. (2006). Yours and mine: Toddlers' talk about possessions with familiar peers. *British Journal of Developmental Psychology*, 24(1), 39–52.
- Henke, R. E. (2019a). *Number marking for animate obviatives: Evidence from relational constructions*. The 51st Algonquian Conference, Montreal.
- Henke, R. E. (2019b). The development of possession in the L1 acquisition of Northern East Cree. *Journal of Child Language*, 46, 980–997.
- Henke, R. E. (2020). *The Henke Collection: Recordings and notes related to Northern East Cree*. Kaipuleohone. <https://scholarspace.manoa.hawaii.edu/handle/10125/58811>
- Henke, R. E., & Brittain, J. (2019). *Connecting language acquisition studies to language documentation and beyond: The Chisasibi Child Language Acquisition Study*. 6th International Conference on Language Documentation & Conservation (ICLDC), Honolulu.
- Hermes, M., & Bang, M. (2014). Theory and advocacy for Indigenous language revitalization in the United States. In M. Bigelow & J. Enns-Kananen (Eds.), *The Routledge Handbook of Educational Linguistics* (pp. 158–170). Routledge.
- Hermes, M., Bang, M., & Marin, A. (2012). Designing Indigenous language revitalization. *Harvard Educational Review*, 82(3), 381–402.

- Hinton, L., & Hale, K. (Eds.). (2001). *The green book of language revitalization in practice*. Brill.
- Hinton, L., Huss, L., & Roche, G. (Eds.). (2018). *The Routledge handbook of language revitalization*. Routledge.
- Hockett, C. F. (1966). What Algonquian is really like. *International Journal of American Linguistics*, 32(1), 59–73.
- Hockett, C. F. (1992). Direction in the Algonquian verb: A correction. *Anthropological Linguistics*, 311–315.
- Jackendoff, R. (2002). *Foundations of language: Brain, meaning, grammar, evolution*. Oxford University Press.
- Johansson, S. (2012). *Learning words before learning grammar: A case study of passives and unaccusativity in Northern East Cree first language acquisition* [MA thesis]. Memorial University of Newfoundland.
- Jones, L. M. (1988). *Cree Baby Talk and Universal Baby Talk* [PhD dissertation]. McMaster University.
- Jones, L. M. (1986). East Cree Baby Talk. In W. Cowan (Ed.), *Papers of the Sixteenth Algonquian Conference: Actes du 17e Congrès des Algonquiniste* (pp. 175–181). Carleton University.
- Junker, M.-O. (2003a). East Cree dependent nouns and disjoint reference. *Algonquian & Iroquoian Linguistics*, 28(1), 11–13.
- Junker, M.-O. (2003b). East Cree relational verbs. *International Journal of American Linguistics*, 69(3), 307–329.
- Junker, M.-O. (2004). Focus, obviation, and word order in East Cree. *Lingua*, 114(3), 345–365.

- Junker, M.-O., & Blacksmith, L. (2001). Obviation, coreference, and relational verb forms in East Cree. In J. D. Nichols (Ed.), *Papers of the 32nd Algonquian Conference* (pp. 258–268). University of Manitoba.
- Junker, M.-O., & MacKenzie, M. (2003). Demonstratives in East Cree. In H. C. Wolfart (Ed.), *Papers of the 34th Algonquian Conference* (pp. 201–216). University of Manitoba.
- Junker, M.-O., & MacKenzie, M. (2004). Southern East Cree pronouns. In H. C. Wolfart (Ed.), *Papers of the 35th Algonquian Conference* (pp. 187–205). University of Manitoba.
- Junker, M.-O., MacKenzie, M., Bobbish-Salt, L., Duff, A., Salt, R., Blacksmith, A., Diamond, P., & Weistche, P. (2012). *The Eastern James Bay Cree Dictionary on the Web: English-Cree and Cree-English, French-Cree and Cree-French (Northern and Southern dialects)*. <http://dictionary.eastcree.org/>
- Junker, M.-O., MacKenzie, M., & Brittain, J. (2012). *Comparative structures of East Cree and English*. http://eastcree.org/pdf/Cree_English_Structure_2012.pdf
- Junker, M.-O., Salt, L., & MacKenzie, M. (2005). *East Cree Pronouns (Northern Dialect)*. The Interactive East Cree Reference Grammar. <https://www.eastcree.org/cree/en/grammar/northern-dialect/pronouns/personal-prefixes/>
- Junker, M.-O., Salt, L., & MacKenzie, M. (2015). East Cree Demonstrative Pronouns (Northern Dialect). *The Interactive East Cree Reference Grammar*. <https://www.eastcree.org/cree/en/grammar/northern-dialect/pronouns/demonstrative/>
- Junker, M.-O., Salt, L., & Visitor, F. (2013a). *East Cree Nouns (Northern Dialect)*. The Interactive East Cree Reference Grammar. <https://www.eastcree.org/cree/en/grammar/northern-dialect/nouns/inflections-obviative/>

- Junker, M.-O., Salt, L., & Visitor, F. (2013b). The Interactive East Cree Reference Grammar. *The Interactive East Cree Reference Grammar*.
<https://www.eastcree.org/cree/en/grammar/>
- Kelly, B. F., Forshaw, W., Nordlinger, R., & Wigglesworth, G. (2015). Linguistic diversity in first language acquisition research: Moving beyond the challenges. *First Language*, 35(4–5), 286–304.
- Kelly, B., Wigglesworth, G., Nordlinger, R., & Blythe, J. (2014). The acquisition of polysynthetic languages. *Language and Linguistics Compass*, 8(2), 51–64.
- Ketrez, F. N., & Aksu-Koç, A. (2009). Early nominal morphology in Turkish: Emergence of case and number. In U. Stephany & M. D. Voeikova (Eds.), *Development of nominal inflection in first language acquisition: A cross-linguistic perspective* (pp. 15–48). Mouton de Gruyter.
- Kidd, A.-M. E. (2014). *Development of Ojibwe (Anishinaabemowin) speech phase I: Developing a word list to evaluate speech development* [PhD dissertation]. University of British Columbia.
- King, K. A., & Hermes, M. (2014). Why is this so hard?: Ideologies of endangerment, passive language learning approaches, and Ojibwe in the United States. *Journal of Language, Identity & Education*, 13(4), 268–282.
- King, M., Smith, A., & Gracey, M. (2009). Indigenous health part 2: The underlying causes of the health gap. *Lancet*, 374(9683), 76–85.
- Kirmayer, L. J., Simpson, C., & Cargo, M. (2003). Healing traditions: Culture, community and mental health promotion with Canadian Aboriginal peoples. *Australasian Psychiatry*, 11 supplement, S15–S23.

- Kirmayer, L. J., & Valaskakis, G. G. (Eds.). (2009). *Healing traditions: The mental health of Aboriginal peoples in Canada*. University of British Columbia Press.
- Kovačević, M., Palmović, M. P., & Hržica, G. (2009). The acquisition of case, number and gender in Croatian. In U. Stephany & M. D. Voeikova (Eds.), *Development of nominal inflection in first language acquisition: A cross-linguistic perspective* (pp. 153–177). Mouton de Gruyter.
- Kroeber, A. L. (1916). The speech of a Zuni child. *American Anthropologist*, 529–534.
- Laalo, K. (2009). Acquisition of case and plural in Finnish. In U. Stephany & M. D. Voeikova (Eds.), *Development of nominal inflection in first language acquisition: A cross-linguistic perspective* (pp. 49–89). Mouton de Gruyter.
- Leonard, W. Y. (2007). *Miami language reclamation in the home: A case study* [PhD dissertation, University of California, Berkeley].
<https://escholarship.org/uc/item/1c4779gb>
- Leonard, W. Y. (2012). Framing language reclamation programmes for everybody's empowerment. *Gender & Language*, 6(2), 339–367.
- Leonard, W. Y. (2017). Producing language reclamation by decolonising 'language.' *Language Documentation and Description*, Vol. 14, 15–36.
- Leonard, W. Y. (2018). Reflections on (de)colonialism in language documentation. In B. McDonnell, A. L. Berez-Kroeker, & G. Holton (Eds.), *Reflections on Language Documentation 20 Years After Himmelmann 1998* (pp. 55–65). University of Hawai'i Press.

- Leroy-Collombel, M., & Morgenstern, A. (2012). Rising grammatical awareness in a French-speaking child from 18 to 36 months: Uses and misuses of possession markers. *Journal of French Language Studies*, 22(1), 57–75.
- Levine, L. E. (1983). Mine: Self-definition in 2-year-old boys. *Developmental Psychology*, 19(4), 544.
- Lidz, J. L., Snyder, W., & Pater, J. (Eds.). (2016). *The Oxford Handbook of Developmental Linguistics*. Oxford University Press.
- Linn, M. S., Naranjo, T., Nicholas, S., Slaughter, I., Yamamoto, A., & Zepeda, O. (2002). Awakening the languages. Challenges of enduring language programs: Field reports from 15 programs from Arizona, New Mexico and Oklahoma. *Indigenous Languages across the Community: Proceedings of the Annual Conference on Stabilizing Indigenous Languages*, 105–126.
- Lokosh (Joshua D. Hinson). (2019). *Nanna ittonchololi' ilaliichi (We are cultivating new growth): Twenty years of Chikashshanompa' revitalization* [PhD dissertation]. University of Oklahoma.
- Macaulay, M. (2009). On prominence hierarchies: Evidence from Algonquian. *Linguistic Typology*, 13(3), 357–389.
- MacKenzie, M. E. (1980). *Towards a dialectology of Cree-Montagnais-Naskapi* [PhD dissertation]. University of Toronto.
- MacWhinney, B. (2015). Language Development. In L. S. Liben & U. Müller (Eds.), *Handbook of child psychology and developmental science, volume 2: Cognitive processes* (pp. 296–338). John Wiley & Sons, Inc.

- Marinis, T. (2016). Acquiring possessives. In J. L. Lidz, W. Snyder, & J. Pater (Eds.), *The Oxford Handbook of Developmental Linguistics*. Oxford University Press.
- Mattissen, J. (2017). Sub-types of polysynthesis. In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 70–98). Oxford University Press.
- Max Planck Institute for Evolutionary Anthropology. (2015). *The Leipzig Glossing Rules: Conventions for interlinear morpheme-by-morpheme glosses*.
<https://www.eva.mpg.de/lingua/resources/glossing-rules.php>
- McEnery, T., & Hardie, A. (2012). *Corpus Linguistics: Method, Theory and Practice*. Cambridge University Press.
- Mellow, J. D., & Begg, K. (2014). Assessing North American Indigenous languages. In *The Companion to Language Assessment, Volume IV: Assessment Around the World* (pp. 1759–1768). John Wiley & Sons, Inc.
- Mithun, M. (1989). The acquisition of polysynthesis. *Journal of Child Language*, 16(2), 285–312.
- Mithun, M. (1996). Overview of general characteristics. In I. Goddard (Ed.), *Handbook of North American Indians, volume 17: Languages* (pp. 137–157). Smithsonian Institution.
- Mithun, M. (1999). *The Languages of Native North America*. Cambridge University Press.
- Morgan, J. (2017). *The learner varieties of the Chikasha Academy: Chickasaw adult language acquisition, change, and revitalization* [PhD dissertation]. University of Oklahoma.
- Nez Henderson, P., Cle, Jacobsen, C., Beals, J., & the Ai-SUPERPFP Team. (2005). Correlates of cigarette smoking among selected Southwest and Northern Plains tribal groups: The AI-SUPERPFP study. *American Journal of Public Health*, 95(5), 867–872.
- Nichols, J. (1986). Head-marking and dependent-marking grammar. *Language*, 62(1), 56–119.

- Nichols, J. (2017). Polysynthesis and head marking. In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 59–69). Oxford University Press.
- Nicoladis, E. (1998). First clues to the existence of two input languages: Pragmatic and lexical differentiation in a bilingual child. *Bilingualism: Language and Cognition*, 1(2), 105–116.
- Ninio, A. (1999). Pathbreaking verbs in syntactic development and the question of prototypical transitivity. *Journal of Child Language*, 26, 619–653.
- Nokony, A. (1977). *Meaning development in one child acquiring Dakota-Sioux as a first language* [PhD dissertation]. University of British Columbia.
- Oster, R. T., Grier, A., Lightning, R., Mayan, M. J., & Toth, E. L. (2014). Cultural continuity, traditional Indigenous language, and diabetes in Alberta First Nations: A mixed methods study. *International Journal for Equity in Health*, 13.
- Oster, R. T., Johnson, J., Hemmelgarn, B. R., King, M., Balko, S. U., Svenson, L. W., Crowshoe, L., & Toth, E. L. (2011). Recent epidemiologic trends of diabetes mellitus among status Aboriginal adults. *Canadian Medical Association Journal*, 183(12), E803–E808.
- Oxford, W. (2017a). Algonquian grammar myths. *Toronto Working Papers in Linguistics (TWPL)*, 39, 1–37.
- Oxford, W. (2017b). Proximate DP, obviateive KP: Balancing the morphosyntax and pragmatics of obviation. *Proceedings of the 2017 Annual Conference of the Canadian Linguistic Association*. Annual conference of the Canadian Linguistic Association, Toronto.
- Pedro, P. M. (2015). *The acquisition of inflection in Q'anjob'al Maya*. John Benjamins.

- Peltier, S. (2011). Providing culturally sensitive and linguistically appropriate services: An insider construct. *Canadian Journal of Speech-Language Pathology & Audiology*, 35(2), 126–134.
- Peltier, S. (2014). Assessing Anishinaabe Children's Narratives: An Ethnographic Exploration of Elders' Perspectives. *Canadian Journal of Speech-Language Pathology and Audiology*, 38(2), 174–193.
- Peter, L., & Hirata-Edds, T. E. (2006). Using assessment to inform instruction in Cherokee language revitalisation. *International Journal of Bilingual Education and Bilingualism*, 9(5), 643–658.
- Pfeiler, B. (2003). Early acquisition of the verbal complex in Yucatec Maya. In D. Bittner, W. U. Dressler, & M. Kilani-Schoch (Eds.), *Development of verb inflection in first language acquisition* (pp. 379–399). Mouton de Gruyter.
- Pfeiler, B. (2009). The acquisition of numeral classifiers and optional plural marking in Yucatec Maya. In U. Stephany & M. D. Voeikova (Eds.), *Development of nominal inflection in first language acquisition: A cross-linguistic perspective* (pp. 91–110). Mouton de Gruyter.
- Pile, S. C. (2018). *Monolingual Language Acquisition in a Mixed Language Community: A Case Study of Northern East Cree* [MA thesis]. Memorial University of Newfoundland.
- Pinker, S. (2013). *Learnability and cognition: The acquisition of argument structure*. MIT press.
- Pye, C. (1979). The acquisition of Quiche (Mayan). *Current Anthropology*, 20(2), 459–460.
- Pye, C., Pfeiler, B., & Pedro, P. M. (2017). Mayan language acquisition. In J. Aissen, N. C. England, & R. Z. Maldonado (Eds.), *The Mayan Languages* (pp. 19–42). Routledge.

- Pye, M. (1992). The acquisition of K'iche' Maya. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition, volume 3* (pp. 221–308). Lawrence Erlbaum Associates, Inc.
- Quay, S. (1995). The bilingual lexicon: Implications for studies of language choice. *Journal of Child Language*, 22(2), 369–387.
- Quinn, C. M. (2011). Algonquian linguistics. In M. Aronoff (Ed.), *Oxford Bibliographies* (online). Oxford University Press.
- Radford, A., & Galasso, J. (1998). Children's possessive structures: A case study. *Essex Research Reports in Linguistics*, 19, 1–10.
- Rea, L. M., & Parker, R. A. (2014). *Designing and conducting survey research: A comprehensive guide*. John Wiley & Sons.
- Rehg, K. L., & Campbell, L. (Eds.). (2018). *The Oxford Handbook of Endangered Languages*. Oxford University Press.
- Reyhner, J., & Lockard, L. (Eds.). (2009). *Indigenous language revitalization: Encouragement, guidance & lessons learned*. Northern Arizona University Press.
- Rhodes, R. A. (1990). Obviation, inversion, and topic rank in Ojibwa. *Proceedings of the Sixteenth Annual Meeting of the Berkeley Linguistics Society: Special Session on General Topics in American Indian Linguistics*, 101–115.
- Rose, Y., & Brittain, J. (2011). Grammar Matters: Evidence from Phonological and Morphological Development in Northern East Cree. *Proceedings of the 4th Conference on Generative Approaches to Language Acquisition in North America (GALANA)*, 193–208.
- Rose, Y., Brittain, J., Dyck, C., & Swain, E. (2010). The acquisition of metrical opacity: A longitudinal case study from Northern East Cree. In K. Franich, K. M. Iserman, & L. L.

- Keil (Eds.), *Proceedings of the 34th Annual Boston University Conference on Language Development* (pp. 339–350). Cascadilla Press.
- Rose, Y., & MacWhinney, B. (2014). The PhonBank Project: Data and software-assisted methods for the study of phonology and phonological development. In J. Durand, U. Gut, & G. Kristoffersen (Eds.), *The Oxford handbook of corpus phonology* (pp. 308–401). Oxford University Press.
- Rose, Y., MacWhinney, B., Byrne, R., Hedlund, G., Maddocks, K., O'Brien, P., & Wareham, T. (2006). Introducing Phon: A software solution for the study of phonological acquisition. In D. Bamman, T. Magnitskaia, & C. Zaller (Eds.), *Proceedings of the 30th Annual Boston University Conference on Language Development* (pp. 489–500). Cascadilla Press.
- Russell, K. (1996). Does obviation mark point of view? In J. D. Nichols & A. C. Ogg (Eds.), *Nikotwâsik Iskwâhtêm, Pâskihîpayih! Studies in Honour of H. C. Wolfart* (pp. 368–382). Algonquian and Iroquoian Linguistics.
- Saville-Troike, M. (1996). Development of the inflected verb in Navajo child language. In E. Jelinek, S. Midgette, K. Rice, & L. Saxon (Eds.), *Athabaskan Language Studies: Essays in Honor of Robert W. Young* (pp. 137–192). University of New Mexico Press.
- Saylor, M. M., Ganea, P. A., & Vázquez, M. D. (2011). What's mine is mine: Twelve-month-olds use possessive pronouns to identify referents. *Developmental Science*, 14(4), 859–864.
- Slobin, D. I. (Ed.). (1985). *The crosslinguistic study of language acquisition, volume 2: Theoretical issues*. Lawrence Erlbaum Associates, Inc.
- Smith, L. T. (2013). *Decolonizing methodologies: Research and indigenous peoples*. Zed Books.

- Smith, L. T., Tuck, E., & Yang, K. W. (Eds.). (2019). *Indigenous and decolonizing studies in education: Mapping the long view*. Routledge.
- Statistics Canada. (2016a). *Census Profile, 2016 Census: Chisasibi, Quebec*.
www12.statcan.gc.ca
- Statistics Canada. (2016b). *Census Profile, 2016 Census: Eastmain, Quebec*.
www12.statcan.gc.ca
- Statistics Canada. (2016c). *Census Profile, 2016 Census: Wemindji, Quebec*.
www12.statcan.gc.ca
- Statistics Canada. (2016d). *Census Profile, 2016 Census: Whapmagoostui, Quebec*.
www12.statcan.gc.ca
- Statistics Canada. (2017). *Census in Brief: The Aboriginal languages of First Nations people, Métis and Inuit*. <https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016022/98-200-x2016022-eng.cfm>
- Stoll, S., Bickel, B., Lieven, E., Paudyal, N. P., Banjade, G., Bhatta, T. N., Gaenzle, M., Pettigrew, J., Rai, I. P., Rai, M., & Rai, N. K. (2012). Nouns and verbs in Chintang: Children's usage and surrounding adult speech. *Journal of Child Language*, 39, 284–321.
- Stoll, S., Mazara, J., & Bickel, B. (2017). The acquisition of polysynthetic verb forms in Chintang. In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 495–514). Oxford University Press.
- Stross, B. (1969). *Aspects of language acquisition by Tzeltal children* [PhD dissertation]. University of California, Berkeley.

- Swain, E. (2008). *The acquisition of stress in Northern East Cree: A case study* [MA thesis, Memorial University of Newfoundland].
www.mun.ca/cclas/work_completed/student_theses/Swain_MA_NEC_acquisition.pdf
- Taff, A., Chee, M. R., Hall, J., Hall, M. Y. D., Martin, K. N., & Johnston, A. (2018). Indigenous language use impacts wellness. In K. L. Rehg & L. Campbell (Eds.), *The Oxford Handbook of Endangered Languages* (pp. 862–883). Oxford University Press.
- Terry, K. (2010). *The emergence of intransitive verb inflection in Northern East Cree: A case study* [MA thesis, Memorial University of Newfoundland].
www.mun.ca/cclas/work_completed/student_theses/Terry_MA_NEC_verbinflection.pdf
- Thorburn, J. (2010). *On the acquisition of segments and syllables types: A case study of a first-language learner of Northern East Cree* [Comprehensive paper].
http://www.mun.ca/cclas/work_completed/student_theses/Thorburn_comp_final.pdf
- Thorburn, J. (2014). Acquiring Northern East Cree: A Case Study. In J. R. Valentine & M. Macaulay (Eds.), *Papers of the 42nd Algonquian Conference* (pp. 263–280). SUNY Press.
- Tomasello, M. (1998). One child's early talk about possession. In J. Newman (Ed.), *The Linguistics of Giving* (pp. 349–373). John Benjamins.
- Tomasello, M. (2003). *Constructing a Language: A Usage-Based Theory of Language Acquisition*. Harvard University Press.
- Upper, M. (1993). Lessons from language acquisition: Reports on a study of Ojibwe first language learning in the home. In *Selected papers from the 1988 and 1990 Mokakit conferences: Establishing pathways to excellence in First Nations Education* (pp. 109–124). Mokakit Indian Education Research Association.

- Upper, M., & McKay, M. (1987). *Acquisition of Oji-Cree as a first language: A preliminary study of children's language development, Phase 1*. Ontario Institute for Studies in Education.
- Upper, M., & McKay, M. (1988). *Acquisition of Oji-Cree as a first language: A preliminary study of children's language development, Phase 1 supplementary report*. Ontario Institute for Studies in Education.
- Viau, J., & Bunge, A. (2016). Argument structure. In J. L. Lidz, W. Snyder, & J. Pater (Eds.), *The Oxford Handbook of Developmental Linguistics* (pp. 157–178). Oxford University Press.
- Vihman, M. M. (1985). Language differentiation by the bilingual infant. *Journal of Child Language*, 12(2), 297–324.
- Whalen, D. H., Moss, M., & Baldwin, D. (2016). Healing through language: Positive physical health effects of indigenous language use [version 1; referees: 1 approved with reservations]. *F1000Research*, 5.
- Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Fernwood Publishing.
- Wolfart, H. C. (1973). Plains Cree: A grammatical study. *Transactions of the American Philosophical Society*, 63(5), 1–90.
- Wolfart, H. C. (1978). How many obviatives: Sense and reference in a Cree verb paradigm. In E.-D. Cook & J. Kaye (Eds.), *Linguistic studies of native Canada* (pp. 255–272). University of British Columbia Press.
- Wolvengrey, A. E. (2011). *Semantic and pragmatic functions in Plains Cree syntax* [PhD dissertation]. LOT: Netherlands Graduate School of Linguistics.

- Yang, C. (2016). *The price of linguistic productivity: How children learn to break the rules of language*. MIT press.
- Yang, C. (2018). A formalist perspective on language acquisition. *Linguistic Approaches to Bilingualism*, 8(6), 665–706.
- Young, T. K., Reading, J., Elias, B., & O’Neil, E., John D. (2000). Type 2 diabetes mellitus in Canada’s First Nations: Status of an epidemic in progress. *Canadian Medical Association Journal*, 163(5), 561–566.
- Zipf, G. K. (1935). *The psycho-biology of language*. Houghton Mifflin.
- Zipf, G. K. (1949). *Human behavior and the principle of least effort: An introduction to human ecology*. Addison-Wesley.