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DELAWARE STEM MORPHOLOGY

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A Thesis Submitted to the
Faculty of Graduate Studies and Research
in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

Department of Linguistics
McGill University
Montreal, Quebec

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ABSTRACT

The derivational morphology of Munsee Delaware, an Eastern Algonquian language spoken in southwestern Ontario, is analysed and described. Chapter I presents general information about Delaware, including a summary of grammatical information necessary for the understanding of word structure. The theoretical constructs assumed are summarized. A distinction is made between primary derivation, in which suffixes are attached to roots (and affixes) to form stems; and secondary derivation, in which suffixes are attached to stems to form new stems. Inflectional affixes are attached to stems which are formed in primary or secondary derivation. Chapter II discusses verb-forming suffixes ('finals') added to roots and certain suffixes to form verb stems. Chapter III discusses verb-forming suffixes which attach to existing noun and verb stems to form verb stems (secondary derivation). Chapter IV discusses 'medials', which prototypically occur between roots and 'final' suffixes. Chapter V discusses noun-forming suffixes which are attached to roots and medials. Chapter VI discusses noun-forming suffixes which attach to existing noun and verb stems to form noun stems (secondary derivation). Chapter VII discusses bound variants of noun stems, morphological elements which occur as members of morphologically complex noun stems.

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RESUME

Ce travail est consacré à une description et analyse de la morphologie dérivationnelle du Munsee Delaware, une des langues de l'algonquin de l'Est, qui se parle dans le sud-ouest de l'Ontario. Le 1^{er} chapitre contient des renseignements généraux sur le Delaware. On y trouve aussi un compte rendu des données grammaticales nécessaires pour comprendre la structure des mots, et un récapitulation des structure hypothétiques. Point central, on fait la distinction entre dérivation primaire, où les suffixes sont liés aux radicales (et affixes) pour en créer des thèmes, et dérivation secondaire, où les suffixes sont liés aux thèmes pour produire de nouveaux thèmes. Les affixes flexionnels sont liés aux thèmes de dérivation primaire ou secondaire. Le 2^e chapitre traite des suffixes (ou "finales") qui se combinent avec des radicales et certains autre suffixes pour en faire des thèmes de verbe. Le 3^e chapitre est consacré aux suffixes qui se combinent avec des thèmes nominaux et verbaux pour en former de nouveaux thèmes de verbes (dérivation secondaire). Le 4^e chapitre traite des "médianes" qu'on trouve traditionnellement entre radicales et finales. Dans le 5^e chapitre il s'agit de suffixes nominaux qui sont liés aux radicales et aux médianes. Le 6^e chapitre présente les suffixes qui transforment les thèmes nominaux et verbaux en nouveaux thèmes nominaux (dérivation secondaire). Le 7^e chapitre discute les variantes liées des thèmes nominaux, unités morphologiques qui font partie des thèmes nominaux complexes.

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The Delaware speakers who helped me to learn about their language are listed on page two. It is appropriate to mention here Mrs. Emily Johnson (deceased 1984), Mrs. Ethel Peters (deceased 1988), and Mrs. Beulah Timothy. Their assistance was invaluable.

I am grateful to Glyne L. Piggott, my academic advisor, for advice and assistance during the preparation of this study.

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PREFACE

The purpose of this dissertation is to present a detailed analysis and description of the derivational morphology of Munsee Delaware, an Algonquian language presently spoken in southwestern Ontario.

In this study word stems are analysed as words minus their inflectional endings. Delaware word stems are traditionally considered to consist of three types of morphemes: roots, medials, and finals. Stem formation may be divided into two major subtypes. Primary derivation forms stems from roots followed by medial and final suffixes. Secondary derivation forms stems from stems by suffixation of finals, and more rarely, medials. It will be shown that a theory of word structure rules of the type proposed by Selkirk (1982) provides the most appropriate framework for the analysis of Delaware stem structure. I show that it is necessary to propose that affixes, as well as stems and roots, are lexical entries. The distribution of roots, medials, and finals in word stems is determined by their lexical properties.

The dissertation is organized as follows. Chapter I presents background information about the language and its speakers. Some of the major grammatical characteristics relevant to understanding the organization of Delaware morphological categories are summarized. In this study the theory of word structure rules outlined in Selkirk (1982) is assumed. The theoretical positions which I assume are outlined in this chapter.

Chapter II presents the system of primary verb finals, the suffixes which determine the classification of verb stems in Delaware. I present the traditional analysis of these morphemes, and propose revisions.

Chapter III discusses the verb finals which are used in the derivation of verb stems from existing noun and verb stems.

Chapter IV discusses the class of morphemes traditionally called medials. These morphemes are divided into two major types, the classificatory medials, and the incorporating medials. Classificatory medials are analysed as suffixes which do not contain specifications for grammatical category. That is, medials do not act as the head of a word. They must be followed by a suffix which transmits features which determine grammatical category. Stems containing incorporating medials are analysed as a type of compound stem containing a nominal and a verbal element.

Chapter V describes the primary derivation of noun stems, that is, the formation of noun stems from roots and suffixes. It is shown that these processes are largely unproductive.

Chapter VI describes the secondary derivation of noun stems, that is, the formation of noun stems from existing noun and verb stems. It is shown that these processes vary considerably in productivity.

Chapter VII describes the bound variants of noun stems. In this construction noun stems occur adjoined to roots and stems. It is argued that bound variants should be entered directly in the lexicon, in order to account for their distribution in this construction and also in the incorporating constructions discussed in Chapter V. Two analyses of this construction are compared. It is argued that an analysis which employs rules of allomorphy to derive bound variants from the corresponding free noun stems is superior on explanatory and descriptive grounds.

It is appropriate to note here some of the limitations of this study. In particular, it does not purport to present an exhaustive analysis and description of every morpheme found in Delaware word stems. While I have attempted a reasonably comprehensive exposition, systematically ignored topics include reduplication, verb diminutives, bound variants of verbs stems, most forms of compounding, and the stem structure of particles. Some suffixes which occur in verb and noun stems have not been discussed because of lack of space, and fragmentary or incomplete data. Analyses and remarks are based upon Delaware

forms as they are found in my field notes. In some cases it is possible that collection of further data would result in modification of the statements made here.

ABBREVIATIONS

AF	Abstract final
AI	Animate Intransitive
AI+O	Animate Intransitive plus Object
AN	Animate Noun
conj	conjunct order
CW	connective /-w-/
DA	Dependent Animate Noun
DI	Dependent Inanimate Noun
dim	Diminutive
exc	exclusive
ext	stem extender
II	Inanimate Intransitive
IN	Inanimate Noun
inc	inclusive
indic	indicative
inv	inverse
nom	nominalizer
obv	Obviative
OTI	Objectless Transitive Inanimate
pl	Plural
poss	possessive
PM	postmedial suffix
PN	Prenoun
PV	Preverb
redup	reduplication
refl	reflexive
subj	subjunctive
TA	Transitive Animate
TA+O	Transitive Animate plus Object
TI	Transitive Inanimate
sg	Singular
1	First person
2	Second person
3	Third person
1p	First person plural (exclusive)
12	First person plural (inclusive)
2p	Second person plural
3p	Third person plural

CHAPTER I

INTRODUCTION

1.0 Introduction

This study is intended as an analysis and description of the derivational morphology of Munsee Delaware. The term 'Delaware' is conventionally used to refer collectively to two closely related Eastern Algonquian languages spoken aboriginally in the area of the western end of Long Island and the adjacent areas of the mainland, that is, New Jersey, Delaware, Pennsylvania and southeastern New York state. Originally there were speakers of three more or less distinct varieties of Delaware occupying this territory. The northernmost of these groups is conventionally referred to as Munsee; the other two may be referred to as Northern and Southern Unami. Northern and Southern Unami were apparently mutually intelligible. Northern Unami is now extinct, although large amounts of material in this language were recorded by Moravian missionaries (Goddard (1979a: Ch. 1)). Southern Unami is presently spoken by a small number of individuals in several locations in Oklahoma. A survey of Delaware ethnohistory, including their westward migrations, may be found in Goddard (1978a).

Although Munsee and (Southern) Unami are closely related, they are nonetheless sufficiently distinct that they are to be considered separate languages (Goddard (1979a: v)). Since I have not examined any Unami Delaware data, the statements in this study apply solely to Munsee Delaware. This study is concerned only with Munsee Delaware, which I will refer to as Delaware (for a review of some of the names applied to Delaware groups, see Goddard (1974a)). At present there are approximately ten or fifteen surviving speakers of Munsee Delaware, all residing at or originally from Moraviantown, Ontario, fifty miles southwest of London, Ontario. Most speakers are elderly, and the language is no longer being learned as a first language, at Moraviantown or elsewhere. The last remaining speaker of Delaware at Six Nations, Ontario died in 1965 (Goddard (1978b: 70)). It is my

understanding that the last remaining speaker at Munceytown, Ontario, approximately thirty miles northeast of Moraviantown, died around 1975.

1.1 Sources of Information

My information on Delaware has been taken primarily from my own field notes, collected at Moraviantown, Ontario during the summers of 1980, 1981, 1984 and 1985. A small amount of data was collected during the fall of 1986. Most of my field work was done with three individuals: Mrs. Emily Johnson (deceased 1984), Mrs. Ethel Peters (deceased 1988), and Mrs. Beulah Timothy. Lesser amounts of information were obtained from Mrs. Mattie Huff, Mr. Enoch Jacobs (deceased 1981), Mr. Peter Noah, Mrs. Nellie Noah, and Mrs. Rebecca Snake (deceased 1985).

Other sources of information on Delaware include the studies of inflectional morphology and historical phonology undertaken by Ives Goddard, especially Goddard (1979a, 1982). Other less recent works which I have found helpful, at least as sources of vocabulary, include Brinton and Anthony (1888); Hewitt (1896); Michelson (1912, 1922); Prince (1900, 1902); Speck and Moses (1945); Wampum and Hogg (1887); Zeisberger (1887).

Leonard Bloomfield's publications on Algonquian languages serve as the basis for modern research on Algonquian languages. Most significant are his studies of Ojibwa (1958) and Menominee (1962). Useful as summaries and also as exemplifications of his approach to word formation are Bloomfield (1927b) and (1941). Other important publications include Bloomfield (1946) on Proto-Algonquian. Goddard (1979b) supplements and updates Bloomfield (1946). Drapeau's (1979) study of noun stem derivation in Montagnais Cree was also helpful.

1.2 Transcription and Citations

The transcription used in the representation of Delaware words is equivalent to that employed in Goddard (1979a, 1982). Long vowels are written double. Some of the phonological rules which produce alternations in the pronunciation of morphemes are

summarized in the Appendix to Chapter I. I have assumed the phonological analysis of Delaware presented in Goddard (1979a, 1982); my presentation of the phonological rules is based upon his. The transcriptions of words which I recorded usually reflects the effects of these phonological rules. Since I am not directly concerned with Delaware phonology, notwithstanding its inherent interest, phonology is not discussed any more than is necessary to understand the forms cited.

This study contains a large number of Delaware words. Although I have attempted to make the transcriptions of Delaware terms cited here as accurate as possible, there are several possible sources of error which should be noted. The most significant of these concerns the transcription of the allophones of the short vowels /a/ and /ə/. In unstressed (metrically weak) medial syllables (Appendix to Ch. II R23, R24) followed by a voiced consonant these two vowels are not distinct, with both being realized as an ultrashort schwa vowel. In some forms where this vowel is always unstressed it is possible that there has been a misassignment of allophones to phonemes. Forms which present this problem are relatively rare.

1.2.1 Citation Practices

Actually occurring forms presented in lists of examples and directly in the text are normally taken from my notes. Forms between diagonal slashes involve a non-surface level of representation, although the degree of abstractness may vary. Forms cited between diagonal slashes are usually not intended to represent the underlying representations of morphemes in a definitive way. Morpheme boundaries are indicated by hyphens.

Forms cited without indication of origin are from my field notes. Words taken from other sources which are written non-phonemically are usually rewritten in the transcription system used here, as well as being presented in the original orthography. Where relevant, an indication of their provenance is given.

In citing examples I usually follow certain practices. When giving examples of noun and verb stems I standardize the mode of citation to ignore or minimize the effects of

several phonological rules which are the source of variation in actual pronunciation. Word-final glides and vowels are subject to certain phonological rules. In particular, word-final /-w/ may optionally be deleted when preceded by a long vowel (R35, Appendix to Ch. I). If deleted, the secondarily-final long vowel may then be subject to vowel shortening (R41, Appendix to Ch. I). I ignore the effects of these two rules in citing forms of nouns and verbs. Hence an inflected stem such as /maxkee-w/ 'it is red' is cited as maxkeew even though other pronunciations are heard.

In citing first or second person singular forms of Animate Intransitive verb stems in the independent order,¹ I will give forms without the inflectional ending /-m/ which is optionally used in this paradigm after stems ending in a long vowel. The stem-final vowel is shortened (R41, Appendix to Ch. I). Hence 'I live' will be cited as mpəmaawsi rather than mpəmaawsiim (from underlying /nəpəmaawəsii(m)/), although both forms do occur.

1.3 Delaware Derivational Morphology

Here I give a brief overview of some of the main features of Delaware derivational morphology, and at the same time preview the topics which will be discussed in this study. I follow the Algonquianist practice of treating the stem as a structural unit which may be informally defined as a word minus its inflectional endings (compare Anderson (1985: 6)). Hence the term 'stem' is equivalent to 'lexeme' as that term is used by Matthews (1974), and is equivalent to 'word' as that term is used by Aronoff (1976: 9, Fn. 5). It is not equivalent to the use of 'stem' in the writings of certain morphologists, such as Siegel (1979), where 'stem' is equivalent to our use of 'root'.

In the sense in which the term is used here, stem morphology is derivational morphology. This presupposes an understanding of whatever distinctions can be made between derivational and inflectional morphology. I shall not attempt to rigorously defend or define

¹ These terms are explained in §1.3.1.

this distinction, other than to accept the conventional position that inflectional morphology deals with such categories as number and person, and specifies the feature values that a word has for these categories (Sadock (1985: 404)).² In Algonquian languages it is reasonably clear which morphemes are considered to be derivational and which are considered to be inflectional. While there are some cases, such as the morphemes referred to as the Transitive Inanimate theme signs (§2.3.1), which have been argued by different analysts to be either derivational or inflectional morphemes, they do not bear directly upon the nature of the distinction between inflectional and derivational morphology.

1.3.1 Grammatical Categories

In this section I briefly outline some of the salient characteristics of Delaware grammatical structure, particularly as they pertain to grammatical categories. There are two main grammatical categories in Delaware: nouns, and verbs. There is also a large and heterogeneous group of words which are traditionally classified as particles. The term 'particle' in effect is a cover term for word classes which are not marked inflectionally.

Nouns are subdivided into two types, according to gender. The two subcategories of nouns are referred to as animate nouns (AN) and inanimate nouns (IN).³ Animate nouns mark plurality by affixation of the suffix /-ak/. Inanimate nouns mark plurality by affixation of the suffix /-al/. Examples are given in (1.1) below:

(1.1)

- | | | |
|-----|-------------|----------|
| (a) | lənəw | 'man' |
| | lənəwak | 'men' |
| (b) | ahpapoon | 'chair' |
| | ahpapoon-al | 'chairs' |

Nouns may be inflected for possession. Some of the relevant paradigmatic data are

² Recent surveys of some of the criteria used in distinguishing between derivation and inflection may be found in Anderson (1982, 1985).

³ A complete list of abbreviations is given on page viii.

presented in §1.5.4. The structure of nouns inflected for possession is relevant for determining the form of certain word structure rules (§1.5.4), and also for the analysis of bound variants of noun stems (Ch. VII). Animate nouns are inflectionally marked for the category of obviation, an indication of disjoint reference, when they have a third person possessor in possessive noun phrases, and also in certain other syntactic constructions.⁴

Gender distinctions are also relevant for the description of verb classes, which are outlined here. There are four main subtypes of verbs, as well as three minor categories. Each type of verb stem is distinguished by specific morphological patterns of stem formation. In most cases, the category of the verb stem is determined by the suffix it ends in. The patterns of verb stem formation are discussed in detail in Chapters II and III.

Verbs are inflectionally marked in three patterns, referred to as orders. Each order corresponds approximately to a clause type. The independent order forms main clauses; the conjunct order forms embedded clauses; the imperative order forms commands. Each of the orders is divided into subtypes, referred to as modes. Some aspects of the patterns of verbal inflection are reviewed in §2.2.0; Delaware inflectional morphology is discussed in detail in Goddard (1979a).

Intransitive verbs are divided into two types, Animate Intransitive (AI) and Inanimate Intransitive (II). AI verbs take a grammatically animate subject. II verbs take a grammatically inanimate subject. Transitive Animate (TA) and Transitive Inanimate (TI) verbs both have grammatically animate subjects. TA verbs have a grammatically animate object; TI verbs have a grammatically inanimate object. A stem from each of the verb classes, inflected in the indicative mode of the independent order, is give in (1.2) below.

⁴ Goddard (1979a: 32) discusses obviation in Delaware. Grafstein (1984) and Dahlstrom (1986) propose analyses of obviation in the related languages Ojibwa and Cree, respectively.

(1.2)

(a) Animate Intransitive

maxksəw
/maxkəsii-w/⁵
be red-3
'he is red'

(b) Inanimate Intransitive

maxkeew
/maxkee-w/
be red-3
'it is red'

(c) Transitive Animate

kəneewaaw
/kə-neew-aa-w/
2-see-3-sg
'you see him'

(d) Transitive Inanimate

kəneemən
/kə-neem-ən/
2-see-3
'you see it'

The three minor types of verb are (a) the Objectless Transitive Inanimate (OTI); (b) Animate Intransitive plus Object (AI+O), and the Transitive Animate with second Object (TA+O).⁶ Bloomfield (1946) refers to the Objectless Transitive Inanimate (OTI) verbs as Pseudo-Intransitive verbs, and to the Animate Intransitive plus Object (AI+O) verbs as Pseudo-Transitive verbs. I have adopted the terms used in Goddard (1979a: Chapter III). The OTI verbs resemble TI verb stems in terms of stem structure, but are inflected as AI

⁵ The stem-final long vowel /-ii/ shifts to /ə/ when followed by the third person singular inflectional suffix /-w/ (R13).

⁶ Piggott (1979, 1989) has proposed a reanalysis of the traditional classification of verb types. See §2.3 for discussion.

stems. The stems of AI+O verbs have the morphological structure of AI verbs, but are inflected for an object. The TA+O verbs are transitive stems which occur with two objects. The structure of these stem types is discussed in §2.2.2 and §2.2.3, respectively. Examples are presented in (1.3) below.

(1.3)

(a) Objectless Transitive Inanimate (OTI)

kaanʃeeləntam	'he is surprised'
/kaanʃeeləntam-w/ ⁷	
be surprised-3	

(b) Animate Intransitive plus Object (AI+O)

kəmənēen	'you drink it'
/kəmənēen-n/	
2-drink-3	

(c) Transitive Animate plus Object (TA+O)

mpeetawaan	'I bring someone, something for him'
/nə-peetaw-aa-n/	
1-bring-3-3	

Particles may be divided into two general types. Free particles are elements which do not occur in construction with particular words of other categories. Particles which occur in compound stems with verbs and nouns are referred to as preverbs and prenouns, respectively. For convenience I use the term 'particle' to refer only to free particles.

Preverbs and prenouns may be distinguished from (free) particles in that, in construction with verbs and nouns respectively, preverbs and prenouns form a type of compound stem, as in (1.4a-b). Stem-level verb and noun prefixes which indicate person marking are added to compound stems, as will be discussed in §1.5.4. Free particles are not bound to a following noun or verb, as in (1.4c). The boundary between the first and

⁷ The suffix /-w/ '3' is deleted after consonants other than /-k/, when in word-final position (R21).

second members of preverb-verb and prenoun-noun compounds will be indicated by '=', as in the examples in (1.4a-b).

(1.4)

(a) Preverb-Verb

maxkii=šoohaasəw
/maxkii=šooḡaasii-w/
red=be painted-3
'he is painted red'

nəmaxkii=šooḡaasi
/nə-maxkii=šooḡaasii/
1-red=be painted
'I am painted red'

(b) Prenoun-Noun

maxkii=amoxool
red=boat
'red boat'

nəmaxki=amoxooləm
/nə-maxkii=amoxool-əm/
1-red=boat-poss
'my red boat'

(c) Particle Followed by Verb

ahweel
'deliberately'

ahweel mpakamaaw
/ahweel nə-pakam-aa-w/
deliberately 1-hit-3-sg
'I hit him on purpose'

1.3.2 The Structure of Stems

Word stems in Algonquian languages are traditionally analysed as composed of three types of morphemes: roots, medials, and finals. Informally, the structure of stems can be represented as in (1.5) below

(1.5) Stem ---> Root + Medial + Final

For example, in (1.6) the noun stem maxkahtakw 'red thread, yarn' contains a root /maxk-/ 'red'; a medial /-ahtak-/ 'stringlike'; and a noun forming final suffix /-w/.

(1.6)

maxkahtakw
/maxk-ahtak-w/
red-stringlike-noun final
'red string, thread'

In the clearest cases, this ternary division is straightforward, although there are numerous deviations. In traditional analyses, stems with ternary structure are considered to be the prototypical stem type (Bloomfield (1927b, 1946, 1962)). The three types of morphemes are traditionally defined purely in terms of their positional distribution. Some of the problems which arise from the traditional assumption that roots, medials, and finals are immediate constituents of stems are discussed in §1.5.4. It will be argued that the medial and final suffixes identified in (1.5) are not members of separate positional categories, as their labels imply, but are to be analysed as suffixes which have differing specifications in their lexical entries.

1.3.2.1 Roots

Some stems are monomorphemic; they consist solely of a root, and are not followed by a final suffix. There is also a large class of roots which can be classified as adjectival or adverbial, in terms of their meaning. In §1.6, I propose that many of these roots are unspecified for categorial features, which are assigned by finals.

1.3.2.2 Medials

The term 'medial' is used to refer to three types of morphemes which occur between roots and finals. The first two of these are frequently referred to as the classificatory medials and the incorporating medials. Both of these types of medials denote various types of nounlike elements. The incorporating medials are sometimes divided into two sub-

classes: 'body-part' medials and other incorporating medials. I shall argue in Ch. IV that the classificatory medial is a type of suffix which acts as a stem modifier. The incorporating forms will be analysed as a type of compounding construction, in which 'incorporated' noun stems are concatenated with verb stems and roots (Ch. IV).

A third group of morphemes which occur between roots and finals may also be recognized. These may be referred to as the 'Type C' medials (Ch. IV). The examples below illustrate the types of medials.

(1.7)

(a) Classificatory medial

šaaxkahtakat
/šaax(a)k-ahtak-at-w/
straight-stringlike-final-3
'it (stringlike object) is straight'

(b) Incorporating medials

Body part medial

niiskənaxkeew
/niisk-ə-naxk-aa-w/⁸
dirty-Ep-hand-final-3
'he has dirty hands'

Other incorporating medials

naačiičəwaakaneew
/naat-iičəwaakan-ee-w/⁹
go after-food-final-3
'he goes after food'

(c) Type C medials

mahkihteexiin
/mahk-i-htee-xiin-w/
detach-Ep-hit-lay, be-3
'he gets detached by hitting'

⁸ The final /-aa/ shifts to /-ee/ when followed by the third person singular inflection /-w/ (R13).

⁹ The final consonant of the stem /naa-ʈ/ is palatalized by R8.

1.3.2.3 Finals

The third major positional class is traditionally referred to as the class of finals. In the prototypical tripartite stem, finals occur after medials. Virtually all verb stems contain a final. Monomorphemic verb stems are rare. A partial list of monomorphemic verb stems may be found in §1.6. Noun stems frequently do not contain a final; they may be monomorphemic (§5.0.1), or they may consist of a root followed by a medial (§5.3.2).

Two types of finals are traditionally distinguished. The abstract finals show no internal structure and have no discernible lexical meaning. Concrete finals have some discernible element of meaning. Two types of concrete finals are traditionally distinguished (Bloomfield (1946: 56)), although not always explicitly. Many of the concrete finals are considered to consist of two morphemes, a prefinal and an abstract final. Other concrete finals are monomorphemic. My analysis of these morphemes is presented in Chapters II and III.

A common abstract final which forms Animate Intransitive (AI) verbs is /-əsii/. In the examples in (1.8) below, this final appears directly after a root in (1.8a), while in (1.8b) it appears immediately preceded by the prefinal /-iikw-/ 'crawl'.

(1.8)

(a) Abstract final

aləmsəw
/aləm-əsii-w/
motion away-abstract final-3
'he goes away'

(b) Concrete final

aləmiikwsəw
/aləm-iikw-əsii-w/
motion away-crawl-abstract final-3
'he crawls away'

Each of the four major subclasses of verbs is characterized by particular patterns of stem-formation. The verb finals are analysed and discussed in detail in Chapters II and III; the status of the prefinal suffixes is discussed in Chapter II. Although the system of noun finals is also fairly complex, nouns do not display a degree of structural differentiation comparable to that found in the verbal categories. The analysis of noun finals is presented in Chapters V and VI.

1.3.2.4 Bound Variants of Noun and Verb Stems

A type of morphologically complex word found in Delaware is traditionally referred to as the 'deverbal' stem (Bloomfield (1946)). In this type of word formation, noun and verb stems appear embedded within stems. I will refer to noun and verb stems which appear in such forms as bound variants of stems. Often, bound variants of stems display minor phonological differences when compared with their corresponding free stems, most commonly absence of an initial consonant, as in (1.9b). Forms containing bound variants of noun stems bear a close relation to the incorporating medials discussed earlier (1.3.2.2). However, the output of the incorporating constructions is invariably a verb stem. Bound variants of noun stems are nouns themselves, although they may be subject to further derivation.

In (1.9b), the free noun stem mahksən (1.9a) 'shoe' appears adjoined to a root. The bound variant has the form /-ahkəsən/, that is, it lacks the initial consonant of the free stem.

(1.9)

- (a) mahksən
/mahkəsən/
'shoe'
- (b) wəskahksən
/wəsk-ahkəsən/
new-shoe
'new shoe'

Similar constructions with a verb as the second member are also found. In (1.10b) the Animate Intransitive verb stem /apii-/ 'be there' (1.10a) is adjoined to a root /wəl-/ 'good'.

(1.10)

- (a) apəw
/apii-w/
be there-3
'he is there'
- (b) wəlapəw
/wəl-apii-w/
good-be there-3
'he is in a good place'

Bound variants of noun stems are discussed in Chapter VII; bound variants of verb stems will not be discussed in this study.

1.4 Primary and Secondary Derivation

In his work on Algonquian languages, Bloomfield (1925, 1927a, 1946, 1958, 1962) makes a distinction between primary and secondary derivation. This distinction originates in the Sanskrit grammatical tradition (see Whitney (1879: Chapter 17)). Primary derivation refers to the derivation of stems by the addition of affixes to roots. Secondary derivation refers to the derivation of stems by the addition of affixes to stems.¹⁰ Stems produced by primary and secondary derivation have the same status in that both may form the input to inflectional affixation. Primary derivation corresponds to the attachment of affixes to stems in Aronoff (1976) and Selkirk (1982). Secondary derivation corresponds to the attachment of affixes to 'words' in their frameworks.

The distinction between primary and secondary derivation is similar to the distinction made within the framework of Lexical Morphology and Phonology among levels of

¹⁰ Bloomfield (1933: 209; Ch. 14) presents an analysis which applies this distinction to English.

derivation.¹¹ In this framework, word formation is segregated into a series of levels or strata, with particular morphological and phonological operations assigned to particular Levels (Mohanan (1982, 1986), Kiparsky (1982)).¹² The output of a given Level forms the input to the succeeding Level. In a typical analysis of English (Kiparsky (1982)), the suffixation of deverbal -al is assigned to Level I, while suffixation of deadjectival -ness is assigned to Level II, as is compounding. Regular inflection is assigned to Level III.¹³

Primary derivation is usually considered to be less productive than secondary derivation. As in Lexical Morphology, affixes which occur closest to the root or stem may be subject to restrictions requiring that they be affixed to certain roots only. The resulting stems may be semantically noncompositional. Subsequent levels of affixation (secondary derivation) are generally considered to be more productive in that they have compositional semantics, and no or few arbitrary restrictions on affixation.

In Delaware, some suffixes are strictly primary, while others are strictly secondary. There are also a certain number of suffixes which are both primary and secondary; they may be attached to either roots or stems. As discussed in §1.5.2.2, the distinction between primary and secondary derivation is accounted for in terms of morphological subcategorization. Derivational suffixes which are attached in primary derivation subcategorize for roots. Derivational suffixes which are attached in secondary derivation subcategorize for stems.

Starting with Aronoff (1976), there has been a general assumption among generative morphologists that word formation processes are “word based” in the sense that affixes

¹¹ Kiparsky (1982) notes the similarities between Lexical Morphology and the concepts of primary and secondary derivation, as does Mohanan (1982, 1986).

¹² Halle and Vergnaud (1987a: 53) propose a variant of Lexical Morphology in which phonological rules are assigned to particular Levels, but morphological rules are assigned to a separate morphological component.

¹³ The parallelism between Levels in Lexical Morphology and the concepts of primary and secondary derivation is not exact, since most of the instances of English morphology discussed by Kiparsky and other generative morphologists involve secondary derivation.

are added to what I previously referred to as stems to make new stems. The claim therefore is that, at least in English, (productive) word formation only involves secondary derivation. However, Aronoff's position does not appear to be correct for Delaware. It is true that some instances of primary derivation in Delaware are not productive, particularly in the case of noun formation (Ch. V). Nonetheless it will be shown that a large part of the productive word formation in the language involves primary derivation.¹⁴

1.5 Theoretical Assumptions

In order to describe Delaware stem formation processes, some developments in morphological theory which have been proposed in recent years will be employed. I will assume that the structure of words can be represented by Word Structure Rules (WSRs) of the type discussed in Selkirk (1982). As well, it is assumed that not only some word stems, as defined above, but also roots and various types of derivational suffixes are lexical entries (Selkirk (1982), Lieber (1981a), Marantz (1984)). Many of the suffixes to be discussed have an effect on the argument structure of the items to which they are attached, and hence on the syntactic environment in which words may appear. The morphosyntactic properties of words are to a large extent determined by their lexical specifications; the Projection Principle (Chomsky (1981)) makes this explicit (§2.2.1).

In this study the properties of the representations of words are considered to be the result of the effects of a series of factors. The representations of words are assumed to be determined by (a) Word Structure Rules; (b) properties of the lexical specifications of the morphemes which occur in a given word; (c) principles of grammar which determine the wellformedness of particular structures. An account of the structure of a particular word must provide an explanation for the grammatical properties which it possesses. Labelled word structure trees are generated by the set of Word Structure Rules proposed for Delaware. Morphemes with the appropriate lexical specifications are inserted under nodes

¹⁴ A similar point is made in Drapeau (1980), discussing Cree-Montagnais, a related language.

which have nondistinct feature specifications. Syntactic and diacritic features of the inserted morphemes are distributed in accordance with percolation conventions which determine the distribution of features within tree structures.

1.5.1 Morphological Heads and Percolation

An important characteristic of Delaware word structure is that in a multimorphemic word stem there is one morpheme which serves to determine the grammatical category of the stem (Bloomfield (1946: §55)). This category determining morpheme is the head of the stem (Williams (1981a); Selkirk (1982)).

In Delaware, and many other languages, it is the rightmost derivational suffix which is the head. In Delaware, the morphological head usually also determines the distribution of the diacritic feature of gender in verbs (Chs. II, III) and in nouns (Chs. V, VI, VII). Delaware derivational suffixes may be divided into those which act as heads and those which do not. The suffixes traditionally referred to as finals (§1.3.2.3) usually have headlike properties.¹⁵ The suffixes referred to as classificatory medials (§1.3.2.2) do not have headlike properties. The differences between these types of suffixes are reflected in their lexical specifications. The lexical entries for finals contain specifications of syntactic features which determine grammatical category.

Williams (1981a) claims that inflectional suffixes serve as morphological heads. Selkirk (1982) argues against this position. She shows that assuming that inflectional morphemes are heads leads to difficulties in determining headedness in languages where words have more than one inflectional suffix (Selkirk (1982: 74-77)). She proposes that it is the rightmost derivational morpheme which is the head, a position which is accepted here.¹⁶

¹⁵ Certain suffixes which might be considered finals on distributional grounds never determine grammatical category or gender. These include the diminutive noun suffix /-əʃ/ (§6.2.1).

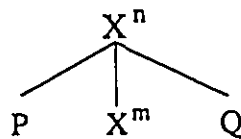
¹⁶ DiSciullo and Williams (1987) propose a relativized concept of head which, while accommodating Selkirk's objections, would allow inflectional suffixes to serve as heads. I will not pursue this proposal here.

The Right-hand Head Rule as reformulated by Selkirk will appropriately determine the headedness of stems in Delaware.

(1.11)

Right-hand Head Rule

In a word-internal configuration



where X stands for a syntactic feature complex and where Q contains no category with the feature complex X, X^m is the head of X^n .

(Selkirk (1982: 20))

The concept of headedness plays a role in the formulation of the Percolation conventions which are required to account for the relationships between features inherent to particular morphemes and features which are present at higher levels of word structure. Head morphemes have priority in assigning features to higher nodes; non-head morphemes may contribute features which have not been specified by the head.

In order to ensure that categorial and diacritic features associated with particular morphemes are correctly distributed in tree structures, it is necessary to make use of feature percolation conventions. Here I will assume the percolation conventions outlined in Selkirk (1982: 76). These are as given in (1.12). In the formulation given here, 'u' means 'unspecified for the feature in question'.

(1.12)

Percolation

- (a) If a head has a feature specification $[\alpha F_i]$, $\alpha \neq u$, its mother node must be specified $[\alpha F_i]$, and vice versa.
- (b) If a nonhead has a feature specification $[\beta F_j]$, and the head has the feature

specification [uF_j], then the mother node must have the feature specification [BF_j].

(Selkirk (1982:76))

Clause (a) of the Percolation convention guarantees that a feature specified on a head will be passed up to the mother node. Clause (b) guarantees that a feature which is not specified on a head but is specified on a non-head will be passed up to the mother node.¹⁷

1.5.2 Lexical Entries

Lexical entries provide information about the properties of stems, roots, and affixes which are listed in the lexicon. Minimally, the following information must be specified for each lexical entry:

(1.13)

- (a) Phonological representation
- (b) Semantic representation
- (c) Syntactic features
- (d) Diacritic features
- (e) Argument structure representation
- (f) Subcategorization frame

I assume that certain morphologically complex words must be entered in the lexicon. Lexical entries for words of this type will include a representation of their internal structure. It is shown in §1.5.3 that at least some morphologically complex words need to be listed.

1.5.2.1 Syntactic and Diacritic Features

The two major grammatical categories (Noun, Verb) may be characterized by using the syntactic features [$\pm N$, $\pm V$]. Nouns are specified [$+N$, $-V$], and verbs are specified [$-N$, $+V$]. The feature combination [$-N$, $-V$], which characterizes prepositions and postpositions, is not used in Delaware. There is a heterogeneous group of words which are traditionally referred to as particles. As discussed in §1.3.1, the status of 'particle' as a single

¹⁷ Alternative Percolation conventions are given by Lieber (1981: 49-51). See also Walsh (1985: 125-127) for a proposed refinement of Selkirk's Percolation conventions.

grammatical category is uncertain, since this term is often used as a cover term to refer to all uninflectable words. Some particles are adverbial in nature, in that they function as verb modifiers, and possibly in some cases as sentential modifiers. However, given the uncertain status of particles as a grammatical category, no attempt will be made to characterize them further. Drapeau (1979) notes that the feature combination [+N, +V] can be used to characterize preverbal and prenominal modifiers. Since the categorial status of these elements is not at issue here, I will not work out the details of arguments for this position.

The diacritic feature [\pm animate] is assigned to noun roots and nominal affixes. The subcategories of verb stem types discussed in §1.3.1 are also accounted for by the use of diacritic features. For instance, a final suffix which forms Animate Intransitive verb stems (intransitive verbs that require grammatically animate subjects) will contain the diacritic feature [+animate] in its lexical specification.

1.5.2.2 Morphological Subcategorization

In syntax, strict subcategorization refers to the types of complements that the head of a phrase may take. For example, transitive verbs are strictly subcategorized for Noun Phrase objects. Similarly, in morphology, particular affixes are analysed as having morphological subcategorization requirements. A given affix may require the presence of a preceding or following root or stem in order to form a word. Morphological subcategorization involves two types of information. First, it is necessary to specify categorial information about the unit which the subcategorizing element is being added to. Second, the position which the subcategorized element occurs in must be specified (Selkirk (1982: 60, 95)). This positional requirement in subcategorization is usually assumed to be restricted to immediately adjacent morphemes, in that the subcategorizing morpheme selects for an immediately adjacent sister morpheme to its right or left. For example, the English noun-forming suffix -ness requires a word stem of the category Adjective to its left. Since English derivational suffixes are heads of the words in which they occur, morphological subcategorization is similar to syntactic subcategorization in that it is the morphological head of the word

which has subcategorization requirements.

However, in some instances morphemes which have subcategorization requirements do not constitute the morphological head of the word in which they occur. In English it is necessary to recognize that certain prefixes, such as non- and un- are of this type, in that they select for a word to their right but are not the heads of the words in which they occur.

A similar situation also obtains with respect to bound roots. Bound roots have subcategorization requirements. They must co-occur with an affix in order to form a stem. A bound root which must be followed by a suffix is not the head of the word in which it occurs.

Hence, as noted by Selkirk (1982: 98-99), subcategorization in morphology does not have the same properties as subcategorization in syntax, at least with respect to headedness.¹⁸ Subcategorization requirements in morphology are not limited to morphological heads, since non-head morphemes may have subcategorization requirements. If the conventionally accepted approach to subcategorization in morphology is correct, then it is less restricted than subcategorization in syntax (Selkirk (1982: 99)).

1.5.2.3 Argument Structure

Lexical entries for affixes and for verb stems will contain information about argument structure. A predicate may be conceived of as taking a certain number of arguments. Argument structure refers to the list of thematic roles which may be associated with the arguments that a predicate has. The thematic relations of a lexical item are assigned in tree structures in accordance with the percolation conventions summarized in §1.5.1 above. Argument structure is discussed in more detail in §2.2.0.

Williams (1981a,b) has proposed that one of the arguments of a predicate, the ex-

¹⁸ Zwicky (1985) discusses some of the ways in which syntactic heads may differ from morphological heads.

ternal argument, has a special status. The external argument is realized 'outside' a maximal projection, the Verb Phrase. For example, the English verb 'see' assigns the thematic role 'Agent' to a position external to the Verb Phrase which it heads, while the thematic role 'Theme' is assigned internal to the Verb Phrase, to the object Noun Phrase.

The distinction between external and internal arguments is dependent upon the existence of a Verb Phrase (VP) node, since for example the thematic role 'Agent' is assigned external to the VP.

The distinction between external and internal arguments is uncertain in Delaware, because Delaware could be considered a language of the type referred to as nonconfigurational.¹⁹ A significant property of nonconfigurational languages is that there is no evidence, at least at the level of surface structure, for a VP node. It is sometimes argued that ostensibly nonconfigurational languages are in fact configurational at some non-surface level of analysis (Hale (1983), Williams (1984), and others). This position is controversial. Grafstein (1984), in her study of Ojibwa, a language related to Delaware, argues that Ojibwa is nonconfigurational, claiming that there is no evidence for a VP node at any level. It is not obviously the case that Delaware is nonconfigurational. However, resolving this question is beyond the scope of this study. If Delaware is indeed nonconfigurational, then the distinction between external and internal arguments cannot be maintained in Delaware, at least as it is conventionally interpreted. In representing argument structures in Delaware, I will assume that there is no distinction to be made between external and internal arguments.

1.5.3 Productivity

In discussions of word formation, the issue of the productivity of particular morphological processes is often relevant. A typical observation is as follows. It may be possible to identify a given affix. However, it occurs adjoined to only a limited number of

¹⁹ A survey of the properties of nonconfigurational languages may be found in Hale (1983).

forms, or cannot freely be added to forms which in principle should be potential candidates for affixation. It may be said that the affixation process in question is unproductive, or is of limited productivity.²⁰

It is often misleading to approach the notion of productivity directly, for example, simply by counting the total number of words which contain a certain affix. A given affix may be productive when attached to a particular potential input structure, but not another (Aronoff (1976: 36)).²¹ For example, the English noun forming suffix -ity does not attach freely to most adjectives, but does attach in a highly productive fashion to adjectives formed with the suffix -able. In cases of this type productivity can only be measured relative to particular potential input structures, rather than in an absolute manner. Apart from whatever inherent interest it may possess, the issue of productivity is of significance for another reason. Aronoff and Sridhar (1983: 15) have argued that the only morphological phenomena which are of theoretical interest are the totally productive ones. Arguments based upon morphological phenomena of limited productivity are likely to be of questionable relevance.

Morphological productivity is often treated as having a close relationship with semantic regularity, or compositionality (Aronoff (1976: 38-39)).²² Words which display the property of being semantically compositional have meanings which can be predicted from the meanings of the morphemes with which they are formed, and the manner in which they are combined (see Partee (1984) for an extensive review of compositionality). Aronoff considers compositionality (semantic coherence) to be the criterial factor in the characterization of productivity.

²⁰ Mohanan (1986: 53-59) proposes that morphological phenomena should be evaluated according to a continuum of productivity which distinguishes several degrees of productivity. This proposal will not be pursued here.

²¹ A Delaware example with this characteristic is discussed in §6.1.2.

²² Aronoff (1976: 38) uses the term 'coherent', rather than 'compositional'.

Similarly, he notes that once words are listed in the lexicon, for whatever reason, they are likely to undergo some loss of compositionality (Aronoff (1976: 43)). As a result, lexical listing of a stem formed with a particular affix may result in a loss in productivity, due to semantic drift (Aronoff (1976: 45)).

Another criterion for determining morphological productivity relates to the observation that less productive (or unproductive) rules often generate words which in principle should occur, but do not actually occur (Walsh (1985: 65-66)). For example, the English suffix -al forms nouns from some verbs, such as arrival from arrive, but not others. That is, there is no noun *derival from derive. In comparison, the outputs of a productive rule are almost invariably attested or actually occurring forms.

Morphological subcategorization frames (§1.5.2.3) offer a way of measuring the productivity of individual morphemes, since subcategorization frames reflect the freedom with which morphemes may combine with other morphemes.²³ Relatively unproductive morphemes will have subcategorization frames with more specific attachment requirements, perhaps even to the point of requiring that an affix be attached only to specific roots. Affixes or other morphemes which are productive will have only very general specifications for attachment. For example, an affix which attaches freely to nouns need only be specified as attaching to roots or stems specified [+N, -V].

In this study, discussions of the productivity of particular affixes will be evaluated primarily in terms of the three criteria discussed above: (a) whether the result of affixation is a semantically compositional word; (b) whether the result is an occurring word; (c) the extent of restrictions on morphological subcategorization.

Differences in productivity are not unusual in word formation, and Delaware morphology is no exception. The issue of productivity can be dealt with in a number of ways. One is to assume, as does Aronoff (1976: Chapter III), that affixation processes (Word

²³ Churma (1987) observes this property of morphological subcategorization.

Formation Rules, in his framework) can be distinguished as to degrees of productivity. Aronoff's approach leads to some difficulties, since it is not clear how to deal with ill-formed words produced by overapplying word formation processes of limited productivity.²⁴ For example, as mentioned above, the English suffix -al forms nouns from some verbs, such as arrival from arrive, but not others. That is, there is no noun *derival from derive. Assuming, in Aronoff's framework, that there is a Word Formation Rule which attaches -al to verbs, some mechanism will have to be invoked in order to block the formation of *derival.

Walsh (1985: 74) proposes that only affixes which are totally regular in every respect have lexical entries, and therefore can be inserted into tree structures. If a morphologically complex word were exceptional or irregular morphologically, phonologically, or semantically, it would be listed in the lexicon rather than being derived. Even a word with only one irregular property would be listed. Words of this type would be listed in the lexicon as units.²⁵ The internal structure of morphologically complex listed words would still have to be represented in lexical entries in order to ensure the correct application of phonological rules.²⁶

Kiparsky (1982: 39) has criticized this type of proposal, since "... it results in considerable redundancy with no compensating gain...The preferable procedure is to list only the unpredictable properties of words". Kiparsky argues that if a word is exceptional, for example with respect to a rule of phonology, it is more satisfactory to deal with the exceptional behaviour directly by making use of rule features in order to stipulate in what respect the form is exceptional. In doing so, one clarifies the locus of the exceptional behaviour,

²⁴ This problem is discussed in Walsh (1985: 65-66).

²⁵ A somewhat similar proposal is made in Wolff (1983).

²⁶ Under this proposal, in terms of Lexical Morphology and Phonology (Kiparsky (1982)), it is likely that there would be very few if any Level I morphological processes in English, since English Level I affixation is mostly unproductive.

rather than implying that the entire word is in some way irregular, as is the case with Walsh's proposal.

The distinction between listed morphologically complex words and derived ones is useful, particularly in the treatment of lexical 'gaps', as in the case of English **derival*. Since English deverbal *-al* only forms nouns from a small number of verb stems, listing nouns formed with *-al* appropriately characterizes the fact that *-al* may be a suffix, but only occurs attached to a small number of verbs. The distinction between lexically listed morphologically complex words and derived ones will be invoked in several places, particularly in Chapters III, V, VI, and VII, where it will be of use in dealing with word formation processes which are not productive. As a result, some morphologically complex words will be listed in the lexicon.

As discussed by Aronoff (1976: 18) and numerous others, it is clear that, in many cases, once words come into existence, they may in some respects become autonomous units which can develop independently with respect to their grammatical properties. Semantic irregularities and idiosyncratic morphological conditions on the attachment of particular affixes are not unusual in established vocabulary.

An example of a morphologically complex Delaware form which would be a good candidate for being listed in the lexicon is the Animate Intransitive verb stem /maxkaahee-/ 'tell a fib'. The stem consists of a root /maxk-/ 'red' and a final suffix /-aahee/ 'throw' (§2.2.2). While these morphemes occur productively in numerous words with their expected meanings, in this particular combination they form a stem with an idiosyncratic meaning which cannot be predicted from the meanings of its component morphemes and the structure of the word. Since I wish to provide an overall picture of Delaware word structures, I will discuss not only totally productive processes, but also ones which appear to be less productive.

1.5.4 Word Structure Rules

Generative morphologists have proposed several different means of accounting for the structure of words. Aronoff (1976) proposed that word structure be accounted for by a class of rules, referred to as Word Formation Rules (WFRs). Each WFR corresponds to a distinct process of affixation. Morphologically complex words are derived from word stems ("words" in Aronoff's terminology) by WFRs, each of which introduces or attaches a particular affix. Hence the lexicon consists of lexical entries (stems) plus Word Formation Rules.

Selkirk (1982) proposed that morphological structure be accounted for by Word Structure Rules (WSRs), the morphological counterparts to Phrase Structure Rules (PSRs). Roots, stems, and affixes are lexical entries. There are no Word Formation Rules, since lexical insertion inserts morphemes (roots, stems, and affixes) into appropriate word tree structures generated by WSRs.²⁷ Since affixes have morphological subcategorization frames, they are inserted under the appropriate nodes, adjacent to the appropriate roots and stems. Selkirk's approach is able to account for generalizations about the ordering of affixes which are dealt with in Lexical Morphology by assigning affixes to different Levels (strata). One of the merits of the use of word structure rules is that the set of word structure rules for a given language gives an explicit characterization of the possible word structures in that language (Selkirk (1982: 4)). I assume that the position taken by Selkirk is essentially correct. Therefore in Delaware roots, affixes, and some stems are all represented by lexical entries.

Let us now consider the nature of the Word Structure Rules. Selkirk (1982) proposes that Word Structure Rules (WSRs) have the form of a series of context-free rewriting

²⁷ Selkirk allows for roots to be inserted by lexical insertion; that is, she drops Aronoff's requirement that morphology is word based (Cf. Selkirk (1982: 98-99), where she discusses English non-native compounding).

rules, analogous to phrase structure rules which account for the structure of sentences. The word structure rules are constrained by extending the principles of the X-bar theory of phrase structure rules (Jackendoff (1977)) to the level of the word. Selkirk (1982: 6) discusses two characteristics of X-bar theories of phrase structure. First, X-bar theory defines a series of syntactic categories, which may be decomposed into syntactic features, and a specification of hierarchically organized levels. In the case of phrase structure rules the levels range from X^0 (the inflected word) to a series of higher phrasal levels (the exact number of these is not relevant here).

The second characteristic of X-bar theory, closely related to the first, is the hypothesis that phrase structure is organized into well defined patterns. In terms of the hierarchy of bar levels, phrase structure rules are organized as follows:

$$(1.17) \quad X^n \rightarrow X^m$$

where $n \geq m$

Necessarily, every syntactic category dominates a category which bears the same category name, but either is of the same level, or is one level down in the hierarchy defined by the X-bar schema.

Selkirk (1982) proposes to extend this X-bar approach to the level of word structure. Here I summarize the general characteristics of Word Structure Rules. I also outline the set of Word Structure Rules which will be formulated in this study, and present some of the Delaware word structures which they account for.

Selkirk assumes that it is possible to define English word structure in terms of two 'levels', which can informally be referred to as Word (X^0) and Root (X^{-1}). I propose a three level system for Delaware, arguing that a distinction must be made between Word (X^0), Stem (X^{-1}), and Root (X^{-2}). Selkirk's arguments proposing a two level distinction in English will also be considered.

Word structure rules produce labelled word structure trees (equivalently, labelled bracketings). A small set of word structure rules suffice to characterize the morphological structures found in Delaware. Setting aside the case of compound words, which will be discussed briefly below, the following rules account for the structure of most nouns and verbs, that is, the major lexical categories.²⁸

(1.18)

- (a) Word \rightarrow (Affix) Stem (Affix)
- (b) Stem \rightarrow Stem Affix
- (c) Stem \rightarrow Root (Affix)

The rules (1.18a-c) may be restated in terms of the X-bar formalism, where 'X' is a variable ranging over the categories Noun, Verb, Particle.

(1.19)

- (a) $X^0 \rightarrow$ (Affix) X^{-1} (Affix)
- (b) $X^{-1} \rightarrow$ X^{-1} Affix
- (c) $X^{-1} \rightarrow$ X^{-2} (Affix)

1.5.4.1 The Status of Affixes in the X-Bar Hierarchy

I will briefly review the nature of the X-bar hierarchy and in particular the place of affixes in the hierarchy. Words are part of the X-bar hierarchy in that roots and stems may be assigned to the categories X^0 , X^{-1} , X^{-2} , where X is a variable ranging over the grammatical categories of the language, and the negative integers specify levels in the X-bar hierarchy.

A few comments about the categorial status of affixes are in order. I assume that affixes are assigned to syntactic categories, but as Selkirk (1982: 7) points out, affixes have a special status in the system of bar levels, in that they do not actually enter into the X-bar

²⁸ The rules (1.18b) and (1.18c) will also account for the structure of particles, including preverbs and pre-nouns.

hierarchy. Rather, affixes are assigned to a special level 'Affix'.²⁹ For example, the node label of a verb-forming affix in a typical Word Structure Rule might be V^{Af} . Assigning affixes a special status is consistent with the observation (Selkirk (1982: 7)) that affixes appear to be invariably preterminal, in English at least, and makes the prediction that there are no complex affixes (Selkirk (1982: 129)). This latter prediction is a matter of some empirical interest in Algonquian languages, as many analyses of Algonquian languages have assumed at least tacitly that some suffixes (the 'concrete' finals) are bipartite in structure. I will show in Chapter II that this analysis need not be accepted, permitting retention of the claim that affixes do not enter into the system of bar levels.

The traditional position on the status of suffixes appears to arise from the way in which both the medial suffixes and the final suffixes are analysed. In traditional discussions of the finals and medials these two terms are often used inconsistently in two senses that are usually not distinguished. In one sense, the terms 'medial' and 'final' are used to denote units which are themselves constituents of a medial or final suffix. That is, medials and finals are immediate constituents of stems, and can dominate other constituents. In the other sense, they are used to denote strictly preterminal elements.

Alternatively, the terms 'medial' and 'final' may simply refer to classes of preterminal elements which may appear in particular stem types. Hence the terms have no theoretical status. Only the second interpretation is consistent with the position taken here that affixes do not enter into the system of bar levels, and are assigned to a special bar level. Henceforth, I treat the terms 'final' and 'medial' as convenient labels for classes of suffixes which are differentiated by properties reflected in their lexical entries.

I return now to the question of the number of bar levels required to account for Delaware word structure. Selkirk argues that in English only two levels of hierarchical

²⁹ Other positions on the bar level of affixes are possible; Fabb (1984: 36-37) assumes that affixes are of level \emptyset .

structure are necessary for the description of English word structure: X^0 (Word) and X^{-1} (Root). The specific argument for this position is based upon the distribution of inflectional affixes in compound nouns in English. I will review this argument and show that comparable Delaware data indicate that a three level analysis of Delaware is necessary.

In English, plural inflection may occur 'inside' noun compounds in examples such as those in (1.20), from Selkirk (1982: 52).

(1.20)

overseas investor
parks commissioner
buildings inspector
weapons analysis

sales receipt
parts distributor
arms race

The distribution of plural inflection would follow from a two level analysis in which inflectional affixes are added to words (X^0), since in this approach compounds are formed by a rule approximately of the form in (1.21a). The appearance of inflectional suffixes on the first members of compound nouns would be accounted for by (1.21b) (see Selkirk (1982: 53-54)).

(1.21)

- (a) Word \rightarrow Word Word
- (b) Word \rightarrow Word Af

Selkirk (1982: 52-54) argues that data of the type in (1.20) would not be consistent with a three level analysis in which inflections are added to stems. In a three level analysis inflected words are formed by the addition of inflectional affixes to stems, while compounds are formed by the concatenation of two stems. The WSRs for generating compound words would be as in (1.22a), while the rule for generating inflected words would be as in (1.22b).

(1.22)

(a) Stem --> Stem Stem

(b) Word --> Stem Af

Therefore, one would not expect inflectional affixes to occur inside compounds. Since there are some cases of inflectional affixes occurring inside compounds in English, Selkirk argues that only the two level analysis is appropriate for English.

While Selkirk's argument is not in dispute, most of the examples adduced by Selkirk as evidence in support of her argument for a two level system are not typical cases of compounding in English. Many of the examples Selkirk gives have a specialized collective interpretation, and are not just straightforward plurals of the basic noun. Some of the examples involve inherent plurality: arms race; overseas investor, etc. Selkirk (1982: 53) acknowledges that these data do not involve simple plurality, but argues that since they are indeed plurals, the rules of compounding for English should account for them. However plural inflection inside compounds is the exception in English, and Selkirk has no account of this. In general, notionally plural first members of noun compounds are not inflectionally marked for plurality in English (Churma (1983: 50)).³⁰ While it will be necessary to give some account of English internally inflected compounds, the examples discussed by Selkirk are marginal relative to the general patterns of compounding in English. Little weight should be attached to arguments for particular word structure rules based on such a peripheral part of English morphology.

By examining the distribution of possessive inflections in Delaware compound stems it is shown that a three level analysis of word structure is necessary in Delaware. One must assume the existence of X^0 (Word), X^{-1} (Stem), and X^{-2} (Root) nodes. I present only a partial analysis of compound stems in Delaware. However this brief exposition estab-

³⁰ Churma (1983) attempts to show that the rarity of internal inflection in English compounding is due to independently motivated factors. Walsh (1985: Ch. III) proposes a different analysis of these compounds.

lishes the point under discussion. I summarize the relevant data, followed by a 'three-level' analysis and a 'two-level' analysis.

Nouns in Delaware are inflected for possession by combinations of prefixes and suffixes.³¹ The suffix /-əm/ occurs only with certain nouns, but not with others. This is a largely arbitrary difference; for further discussion see §7.3.2.

(1.23)

nə- (əm)	1
kə- (əm)	2
wə- (əm)	3

An example of a noun inflected for these categories is given in (1.24).

(1.24)

šəlpəl	'money'
nšəlpələm /nə-šəlpəl-əm/ 1-money-poss	'my money'
šəlpələm /kə-šəlpəl-əm/ 2-money-poss	'your money'
wšəlpələm /wə-šəlpəl-əm/ 3-money-poss	'his money'

Some Delaware compound nouns are formed by adjoining prenominal particles, referred to as prenouns (PN), to noun stems. Prenouns always occur adjoined to nouns. Many prenouns are formed by adding the prenoun final suffix /-ii/ or /-iiwii/ to roots. From the root /məxəw-/ 'old', a prenoun /məxəwii-/ 'old' is formed. Prenoun-noun compounds,

³¹ Plural forms of possessive nouns are formed by suffixation. These are not relevant to the point under discussion.

as in (1.25a), may be inflected for possession, as in (1.25b) (the boundary between pre-noun and noun is indicated by '=').

(1.25)

- (a) xəwii=pampiil³²
'old book'
- (b) nəməxəwii=pampiiləm
/nə-məxəwii=pampiil-əm/
1-old=book-poss
'my old book'

In prenoun-noun compounds of the type exemplified in (1.25b) possessive inflections are always added 'outside' the compound. It is not possible to inflect only the right hand member. Examples of the type in (1.26), with the same meaning as (1.25b), are ungrammatical. The ungrammaticality of (1.26) is representative of the status of compounds formed in this manner.

(1.26)

*xəwii=mpampiiləm
'my old book'

The distribution of the inflectional affixes can be accounted for if it is assumed that pre-noun-noun compounds are generated by the rule given in (1.27a), and that the position of inflectional affixes is determined by the rule given in (1.18a), repeated here as (1.27b).

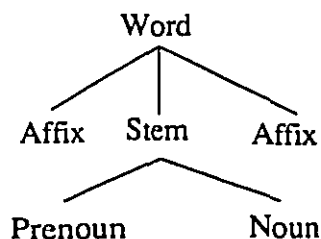
(1.27)

- (a) Stem --> Prenoun N⁻¹
(b) Word --> (Aff) Stem (Aff)

³² The initial consonant of the prenoun /məxəwii/ drops in word initial position (R40).

Under this analysis, inflected prenoun-noun compounds would have the structure given in (1.28).

(1.28)



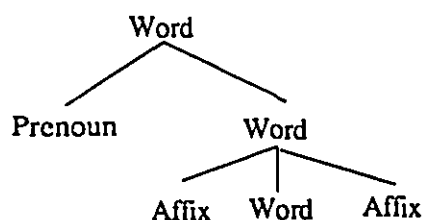
If Selkirk's claim that compounding in English involves the level of Word (X^0) were extended to Delaware, the rule for this type of compounding in Delaware would be as in (1.29a), and the rule accounting for the distribution of inflectional affixes would be as in (1.29b).

(1.29)

- (a) Word \rightarrow Prenoun Word
- (b) Word \rightarrow (Affix) Word (Affix)

Rules (1.29a-b) predict that inflectional affixes may be affixed to the right hand member of the compound. That is, word tree structures of the type exemplified in (1.30) should be permitted.

(1.30)



Such is not the case, as was exemplified in (1.26) above, where the first person singular prefix and the possessive suffix have been added to the second member of the compound. Rather the first person prefix and the possessive suffix are added to the entire

compound, as in (1.25b). The ungrammaticality of (1.26) supports the claim that a three level analysis is necessary. Hence the structure of prenoun-noun compounds would be as in (1.29) above. Therefore the structure of noun compounds is accounted for by (1.27a). The rule which accounts for the distribution of inflection is as in (1.27b).

It is necessary to posit a three way distinction of hierarchical word structure: X^0 (Word), X^{-1} (Stem), and X^{-2} (Root). Derivational affixes are added to roots to form stems (primary derivation), and to stems to form other stems. Inflectional affixes are added to stems to form inflected words.

1.6 The Categorical Status of Roots

I now return to the question of the categorial status of the morphemes referred to as roots, which was alluded to in §1.3.2.1. As has been discussed, Delaware stems conform to the Righthand Head Rule (§1.5.1). The rightmost morpheme in a stem determines the grammatical category of the stem, and also assigns diacritic features for gender to the stem. The righthandedness of stems has an interesting consequence in the case of multimorphemic stems which contain a bound root. It is not possible to assign categorial features to bound roots in a principled manner, because they are invariably followed by some other morpheme, that is, a final, which assigns categorial and diacritic features.

For example, the root /nəsək-/ 'black' may be followed by a verb final, as in (1.31a), or by a combination of medial and noun final, as in (1.31b), or by a noun final, as in (1.31c).

(1.31)

- (a) nsəksəw
/nəsək-əsii-w/
black-verb final-3
'he is black'
- (b) nsəkahtakw
/nəsək-ahtak-w/
black-stringlike-noun final
'black thread'
- (c) nsəkčəy

/nəsək-čəy/
 black-excrement
 'black excrement'

Because roots such as /nəsək-/ 'black' are always followed by some category determining suffix, there is no principled basis for claiming that bound roots are assigned to a particular syntactic category. Although bound roots have a lexical meaning, they are 'acategorial' in that their lexical entries contain no specifications for syntactic features.

This observation is not novel. Bloomfield (1946: §101-107) proposed that there was a class of 'general' roots which may occur with final suffixes from all grammatical categories. Piggott (1989: 40) has made a similar proposal based upon comparable Ojibwa data.

By contrast, there are roots which must be assigned syntactic and diacritic features. These are the monomorphemic noun and verb stems. Monomorphemic noun stems are common. Nouns such as those in (1.32) are not segmentable. Therefore the appropriate syntactic and diacritic features must be inherent to the lexical entries for these words.

(1.32)

asən	'stone'
mahksən	'shoe'
maxkw	'bear'

Similarly, there is a small number of monomorphemic verb stems, some of which are listed in (1.33).

(1.33)

/paa-/	'come'
/aa-/	'go'
/(s)ii-/	'say'
/əl-/	'say to someone'
/ləpak-/	'weep'
/wəm-/	'come from there'
/siin-/	'milk someone'

The stems in (1.33) cannot be assigned any internal structure, and their lexical entries must include specifications for syntactic and diacritic features.

There are also several roots which were only recorded in verb stems. For example, the root /nee-/ 'see' only occurs with the Transitive Animate final suffix /-w/ or the Transitive Inanimate suffix /-m/ (§2.1.5).

(1.34)

kəneewaaw
/kə-nee-w-aa-w/
2-see-final-3-sg
'you see him'

kəneemən
/kə-nee-m-ən/
2-see-TI-3
'you see it'

The size of the class of roots which only occur in verb stems has not been determined. Certain roots may only appear in verb stems (or only in noun stems). However, this may reflect an accidental gap in the lexical data which I collected, rather than being linguistically significant. More detailed collection of lexical data will be required in order to definitively determine the number of roots which only occur in verb stems.

In sum therefore, there is a very large class of roots whose lexical entries contain no specification for syntactic category, as well as a large class of noun roots and a small class of verb roots.

1.7 Connective /-w-/

A morpheme /-w-/, which I shall refer to as 'connective /-w-/', is used in a number of different types of word formation. I will review here some of the major aspects of its use and will attempt to clarify the distribution and function of this morpheme. In all examples recorded, connective /-w-/ followed by certain noun or verb finals is added to verb stems in order to form derived noun or verb stems.³³

Connective /-w-/ triggers certain phonological alternations which affect some pre-

³³ Discussions of apparent cognates of connective /-w-/ in other Algonquian languages may be found in Bloomfield (1946: §65), Goddard (1988), and Drapeau (1979).

ceding vowels. Certain instances of immediately preceding stem-final /-ii/ shifts to [-ə-], while preceding stem-final /-aa/ shifts to [-ee] (R13; see §2.4.2.1 for discussion). Other stem-final vowels are not affected. For example, the AI stem /mataawəsii-/ ‘be a sinner’ (1.35a) may be nominalized by adding /-w-/ and the nominalizing suffix /-aakan/ (§6.1.2); the stem final long vowel /-ii/ shifts to [-ə] (1.35b). Compare the AI first singular independent form nəmataawsi ‘I am a sinner’ in (1.35c) (R41, Final Vowel Shortening, also applies).

(1.35)

- (a) /mataawəsii-/
‘be a sinner’
- (b) mataawsəwaakan
/mataawəsii-w-aakan/
be a sinner-CW-nom
‘sin’
- (c) nəmataawsi
/nə-mataawəsii/
1-be a sinner
‘I am a sinner’

Similarly, the AI stem /kəšihlaa-/ ‘go fast’ (1.36a) may form a derived AI stem by adding connective /-w-/ and AI suffix sequence /-n-aw-ək-w-əsii/ ‘have the appearance of’ (1.36b). In the resulting complex stem the stem-final /-aa/ of ‘go fast’ shifts to /-ee/, kšihleewiinaakwsəw ‘he looks like he can go fast’. Compare nkəšihla ‘I go fast’ (1.36c), without alternation of the final vowel, which is shortened by R41.

(1.36)

- (a) /kəšihlaa-/
‘go fast’
- (b) kšihleewiinaakwsəw
/kəšihlaa-w-iin-aw-ək-w-əsii-w/
go fast-CW-have the appearance-3
‘he looks like he can go fast’
- (c) nkəšihla
/nə-kəšihlaa/

1-go fast
'I go fast'

However, when followed by connective /-w-/ certain verb stems do not undergo vowel shift. Hence for example when the AI stem /aamwii-/ 'get up from lying' is nominalized with /-w-aakan/, the stem-final vowel does not shift: /aamwii-w-aakan/ is realized as aamwiiwaakan 'resurrection'. Stems whose final long vowel does not undergo vowel shift may be said to end in 'stable' /-ii/ or /-aa/; those whose final vowel does undergo vowel shift may be said to end in 'unstable' /-ii/ or /-aa/.³⁴

The distribution of connective /-w-/ is not simply a matter of phonological conditioning. It is not inserted as an epenthetic glide in order to break up vowel sequences. Connective /-w-/ appears in examples which indicate that its occurrence is not phonologically conditioned. In (1.37) connective /-w-/ is added to a TI stem ending in a consonant.

(1.37)

neemwaakan
/neem-w-aakan/
see something-CW-nom
'sight'

The most common uses of connective /-w-/ in Delaware are discussed here. First, connective /-w-/ is used in forming nominalizations of AI and Objectless Transitive Inanimate (OTI) verb stems (§6.1.2).

(1.38)

/pəmaawəsii-/
'live'

pəmaawsəwaakan
/pəmaawəsii-w-aakan/
live-CW-nom
'life'

³⁴ See R13 and §2.4.2.2 for a more detailed discussion of unstable /-ii/.

Second, connective /-w-/ may be followed by certain sequences of suffixes which form AI verbs, such as /-n-aw-əkʷ-əsii/ 'have the appearance', deriving AI verbs (§2.4.3.2).

(1.39)

/kəʃihlaa-/
'go fast'

kʃihleewiinaakwsəw
/kəʃihlaa-w-ii-n-aw-əkʷ-əsii-w/
go fast-CW-appearance-3
'he looks like he can go fast'

Connective /-w-/ is also used in the formation of noun stems which contain AI verb stems as their left-hand element and have bound variants of noun stems as their head (Ch. VII). Relatively few tokens of this construction were recorded; see Ch. VII for further discussion.³⁵

(1.40)

/matahkee-/
'fight'

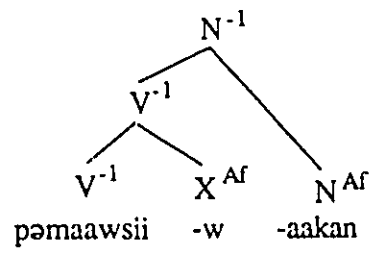
matahkeewiilənəw
/matahkee-w-iilənəw/
fight-CW-man
'fighting man, warrior'

Although other instances of the use of connective /-w-/ were recorded, the constructions listed above are those in which connective /-w-/ most commonly occurs. In all the cases I have recorded, connective /-w-/ is added to verb stems to form noun or verb stems. No cases were recorded of connective /-w-/ being added directly to roots. A typical word structure is as in (1.41), which I exemplify with the noun stem pəmaawsəwaakan

³⁵ Bloomfield (1946: §58, 65) briefly mentions examples of this type in other Algonquian languages.

'life' analysed in (1.38) above.

(1.41)



APPENDIX TO CHAPTER I: PHONOLOGY

The following is a brief and informal presentation of some of the phonological rules in Delaware which produce alternations in the form of morphemes cited in this study. Most of the rules presented here are based upon those given in Goddard (1979a, 1982). Other rules which produce alternations not exemplified in our data are not formulated. Purely allophonic rules, whose effects are not represented in the transcription used here, are not discussed at all, with the exception of R23, R27, R33. Certain phonologically irregular instances of allomorphy are dealt with on an individual basis. Although the transcription used here is essentially the same as that in Goddard (1979a, 1982), it is appropriate to mention some minor differences. Long vowels are written double; diacritics used to indicate the allophones of vowels resulting from the application of R28, R31, R34, are omitted. Stress, which is predictable, is not marked (R24). In a few words I have used the notation 'ǃ' to denote an underlying short vowel of undetermined quality which is always syncopated.

R1. L-Aspiration.

The segment /l/ is realized as /-h/ before /-kee/ 'derived intransitive'; /-l/ is invariably one of the TA finals ending in /-l/ (§2.2). Example: /naawal-kee-w/ 'he follows people' --> naawahkeew; cf. /kə-naawal-aa-w/ 'you follow him' --> kənaawalaaw. The segment /-l/ is also realized as /-h/ in AI stems when followed by the conjunct order suffix /-k/ '3'. Example: /eelii=aləl-k/ 'because he rots' --> eelii=alikh (for an example of /ə/ shifting to [-i-], cf. R7); cf. independent order /aləl-w/ 'he rots' --> aləl (for deletion of final /-w/ see R6).

R2. Obstruent Aspiration.

Obstruents are neutralized with /-h/ in certain positions in stem derivation and also in inflection. Most of the instances in which an obstruent is realized as /-h/ are unproductive and would have to be restricted in various ways. The segment /-t/ is realized as /-h/ before the conjunct order suffix /-k/ '3sg'. Example: /eelii=matət-k/ 'because it is evil' -->

ɛɛlii=matihk (for /ə/ --> [-i-] see R5); cf. independent order /matət-w/ 'it is evil' --> matət (for deletion of /-w/ see R6).

The segment /-t/ is also realized as /-h/ in stem derivation before /-p/; only one example of this alternation was recorded. Example: /nə-wiit-pee-m-aa-w/ 'I sleep with him' --> nəwihpeemaaw; cf. /wiit-ee-w/ 'he goes along' --> wiiteew.

The segment /-t/ is realized as /-h/ in stem formation before /-l/ (always the Transitive Animate final suffix /-l/), and before /-t/ in the Transitive Inanimate final /-t/ and the Inanimate Intransitive final /-tee/. All examples recorded involve the root /ap-/ '(be) there', and possibly also /nəp-/ 'die'. Examples: /nə-ap-l-aa-w/ 'I put him down' --> ntahlaaw (R4 and R5 also apply); /nə-ap-t-oo-n/ 'I put it down' --> ntahtoon (R4 and R5 also apply). Compare the form /ap-ii-w/ 'he is there' --> apəw (R7 also applies).

R3. N-Aspiration.

The segment /n/ is realized as [-h-] before /-l/; this accounts for alternations in stem derivation whereby the final /-n/ of a root or prefinal is realized as /-h/ before the Transitive Animate suffix /-l/ (§2.1.3).

n --> h/___l

Example: /nə-wiin-l-aa-w/ 'I name him' --> nəwihlaaw (for shortening of /-ii-/ see R23); cf. /nə-wiin-t-am-ən/ 'I name it' --> nəwiintamən.

R4. Postconsonantal W-Deletion.

The segment /w/ is deleted word-finally after consonants except /k/.

w --> ø/ C___#

$$\left\{ \begin{array}{l} [-\text{back}] \\ +\text{low} \\ +\text{back} \end{array} \right\}$$

This rule accounts for the deletion of the Animate Intransitive independent order inflection /-w/ '3' and the homophonous Inanimate Intransitive inflection after consonant-final stems. Examples: /ʒənkiixiin-w/ 'he lays down' --> ʒənkiixiin; cf. /alohkee-w/ 'he works' --> alohkeew.

R5. Schwa Raising.

Schwa is realized as [-i-] before /-h/ (when not rounded by other rules not formulated here; cf. Goddard (1979a: Ch. II)).

ə --> i/___h

Example: /eeli=alət-k/ 'because it rots' --> eeli=alikh (R2 feeds R5).

R6. Schwa Rounding

Schwa is rounded between a labial consonant and /x/.

ə --> o/x { $\begin{matrix} p \\ m \end{matrix} \}$ —

Example: /nə-məx-eeləm-aa-w/ 'I think well of him' --> nəmoxweeləmaaw (R25 also applies).

R7. Schwa Rounding.

Schwa is rounded when followed by /x/ plus /p/ or /kw/.

ə --> o/___x { $\begin{matrix} p \\ kw \end{matrix} \}$

Example: /nəkəx-pii-l-aa-w/ 'I tie him' --> nkoxpiilaaw.

R8. T-Palatalization.

The segment /t/ is palatalized when followed across a morpheme boundary by the high vowel /-ii/.

$t \rightarrow \check{c}/_+ii$

Example: /kəl-at-ii-t-ee/ 'if he is cold' --> kəlačiite; cf. /kəl-at-ən-w/ 'it is cold' --> kəlatən. There are many exceptions in derivation; in particular root-final /-t/ frequently fails to undergo palatalization.

R9. Diminutive Consonant Harmony.

The segments /t/ and /s/ are palatalized to /č/ and /š/ respectively, when followed by the nominal or verbal diminutive morphemes.

$\left\{ \begin{matrix} t \\ s \end{matrix} \right\} \rightarrow \left\{ \begin{matrix} \check{c} \\ \check{s} \end{matrix} \right\} /_ [+diminutive]$

Examples: /takwax-əš/ 'turtle (dim.)' --> čakwaxəš; /asən-əš/ 'stone (dim.)' --> ašənəš.

R10. T-Insertion.

The segment /t/ is inserted between a personal prefix and a vowel-initial noun or verb stem. Dependent (obligatorily possessed) noun stems do not undergo this rule.

$\emptyset \rightarrow t/CV_+V$

Condition: does not apply in dependent stems.

Examples: /nə-asən/ 'my stone' --> ntasən (R24 also applies); cf. /asən/ 'stone' --> asən.

Compare the vowel-initial dependent noun stem /nə-iimatəs/ 'my brother (man speaking)'

--> niimatəs (R16 also applies).

R11. Y-Epenthesis.

The segment /-y-/ is inserted in stem derivation between long vowels, and in inflection between any two vowels.

$\emptyset \rightarrow y/V_V$

Example: /nə-pəm-ii-nčəkwee-aahee-n/ 'I roll it' --> mpəmiinckweeyaaheen (R31 and R32 also apply).

R12. Long Vowel Y-Shift.

The long vowels /-ee/ and /-aa/ shift to /-a/ before /-y/. Most commonly this rule affects stem-final vowels before the /-y/ inserted by R11. Exceptionally, /-ee/ frequently fails to undergo R12 in stem derivation.

$\left\{ \begin{array}{c} aa \\ ee \end{array} \right\} \rightarrow a/_y$

Example: /eelii=wiitee-aan/ 'because I go along' --> eelii=wiitayaan; cf. /wiiteew/ 'he goes along' --> wiiteew.

R13. W-Shift.

Here I treat together two separate alternations. Long /-ii/ shifts to /-ə/ when immediately before /-w/ 'third' (used in inflection of AI stems) and also before /-w/ 'singular' (used in inflection of TA stems). Long /-aa/ shifts to /-ee/ when followed in a word by /-w/ 'third'. Example with stem-final /-ii/: /ləmatapii-w/ 'he sits' --> ləmatapəw; see also the form /kə-ləmatapii-m/ 'you sit' --> kələmatapiim. Example with stem-final /-aa/: /kəpəčaa-w/ 'he is foolish' --> kəpəčeeew; cf. /nə-kəpəčaa-m/ 'I am foolish' --> nkəpəčaam.

The morpheme referred to as 'connective /-w-/ ' also triggers the same alternations (see §1.7 for exemplification). Certain AI verb stems ending in /-ii/ or /-aa/ do not undergo

R13. These may be referred to as stems in 'stable' /-ii/ or /-aa/. Stems which undergo R13 may be referred to as stems in 'unstable' /-ii/ or /-aa/ (see §2.3.2.1 for further discussion).

R14. Vowel Epenthesis.

The vowels /-ii/ and /-ə/ are inserted in stem derivation and also in inflection. I make no attempt to formalize the distribution of the epenthetic vowels, which is in need of careful investigation.

R15. /w-a/ Contraction

Postconsonantal /w/ and /a/ contract to [-oo-] when /-w/ is the inflectional suffix '3', and /-a/ is part of the verb inflections /-al/ 'inanimate plural' or /-ak/ 'animate plural'. Example: /əspaakčeehl-w-ak/ 'they jump up' --> əspaakčehlook.

R16. /w-ə/ Contraction.

The sequence /-w-ə/ contracts to [-oo-] when /-ə/ is part of the TA theme signs /-əkʷ/ 'inverse' or /-əl/ 'I-you'. Examples: /nə-poont-ahw-əkʷ/ 'he weighs me' --> npoonthookw; /kə-poont-ah-wəl/ 'I weigh you' --> kpoonthool.

R17. /aw-ə/ Contraction.

The sequence /aw-ə/ contracts to [-oo-] when followed by /-l/, and to /-aa-/ when followed by /-k/ or /-n/.

$$aw-ə \rightarrow \left\{ \begin{array}{l} oo/_l \\ aa/_ \left\{ \begin{array}{l} k \\ n \end{array} \right\} \end{array} \right\}$$

Examples: /kə-pənaw-əl/ 'I look at you' --> kpənool; /nə-pənaw-əkʷ/ 'he looks at me' --> mpənaakw; cf. /nə-pənaw-aa-w/ 'I look at him' --> mpənawaaw.

R18. /əwə/ Contraction.

The sequence /-əwə-/ contracts to [-oo-] everywhere.

$$əwə \rightarrow oo$$

Example: /nə-wələsii/ 'I am pretty' --> noolsi; cf. /wələsii-w/ 'he is pretty' --> wələsəw (R13 also applies).

R19. /ay-ə/ Contraction.

The sequence /ay-ə/ contracts to [-ee-].

ay-ə --> ee /__C

Example: /aanay-ənk/ 'on the road' --> aaneenk; cf. aanay 'road'.

R20. /əy-ə/ Contraction.

The sequence /əy-ə/ contracts to /-ii/.

əy-ə --> ii /__C

Examples: /mohkaməy-ənk/ 'on the ice' --> mohkamiink; /mohkaməy-əš/ 'ice (dim.)' --> mohkamiiš; cf. mohkaməy 'ice'.

R21. W-Deletion.

When not contracted by R16, /w/ is deleted when preceded by /-h/, /-s/, or /-š/ (invariably in the prefinals /-ah-/ 'by tool'; /-əs-/ 'by heat'; and /-əš-/ 'by cutting'). Example: /nə-poont-ah-w-aa-w/ 'I weigh him' --> npoonthaaw. The segment /-w/ is not deleted after /-h/ in other morphemes, such as the root /ahw-/ 'intense': ahwat 'it is difficult'.

R22. Vowel Elision.

A short vowel is deleted when adjacent to a long vowel.

V --> ø / V__
[-long] [+long]

Example: /wəl-əčee-əsii-w/ 'he has a nice shape' --> wələčeesəw (R13 also applies); compare without elision /wəl-əsii-w/ 'he is pretty' --> wələsəw (R13 also applies).

R23. Foot Construction.

Foot construction will be stated informally only. Final syllables in words of more than two syllables are extrametrical; they are exempted from foot construction, and from the effects of various metrical processes. Any long vowel is metrically strong; any short vowel in a closed syllable is metrically strong; in a sequence of open syllables containing short vowels odd numbered vowels are weak; even numbered vowels are strong. Many short vowels in open syllables must exceptionally be marked strong, particularly in loan words and reduplicated syllables. The effect of R23 is exemplified in R24. The following rules are sensitive to metrical structure: R24, R28, R29, R31, R34.

R24. Main Stress Assignment.

In words of more than two syllables, penultimate strong syllables receive main stress. If the penultimate syllable is metrically weak, as defined in R23, the antepenultimate syllable is stressed. In disyllabic words the last strong vowel of the word is stressed. Although stress is not marked in this study, I give examples to illustrate the effects of R24.

Strong penultimate:

təmahíikan	'axe'
asónal	'stones'

Weak Penultimate:

təmahíikanal	'axes'
--------------	--------

Disyllables:

asón	'stone'
pəyool	'violin'
áhteew	'it is there'

R25. X-Labialization.

The segment /x/ is labialized when preceded by /oo/ or /o/.

x --> xw/o(o)___

Example: /aləm-oox-ee-w/ 'he walks away' --> aləmooxweew.

R26. Nasal Assimilation.

A nasal consonant assimilates to the place of articulation of a following obstruent. The effects of this rule are only indicated when /m/ --> /n/; allophonic place of articulation assimilation is not indicated.

$$\begin{array}{ccc} & C & C \\ [+nasal] & \rightarrow & [\alpha place]/_ [\alpha place] \end{array}$$

Example: /nə-pəntaw-aa-w/ 'I hear him' --> mpəntawaaw.

R27. Voicing Assimilation.

An obstruent agrees in voicing with an immediately preceding nasal. The effect of R27 is not indicated in the transcription used here.

$$\begin{array}{ccc} & C & C \\ [-sonorant] & \rightarrow & [+voice]/[+nasal]_ \end{array}$$

Example: /nə-məx-eeləm-sii/ 'I think well of myself' --> nəmoxweelənsi [nəmoxweeləzi]
(R6 and R25 also apply).

R28. A-Deletion.

In the first syllable of certain roots, /a/ deletes when between /n/ and a voiceless stop.

$$\begin{array}{ccc} & & C \\ a & \rightarrow & \emptyset/n_ [-voice] \\ & & | \\ & & WK \end{array}$$

Example: /nakihlaaw/ 'he stops' --> nkihleeew (R13 also applies) cf. /kə-nakihlaa/ 'you stop' --> kənakihla (R41 also applies).

R29. A-Syncope.

Short /a/ is deleted in weak syllables when followed by /h/ or /x/.

$$a \rightarrow \emptyset / \underset{\substack{| \\ \text{WK}}}{__} \begin{Bmatrix} h \\ x \end{Bmatrix}$$

Example: /axay/ 'skin' --> xay; cf. /nə-axay/ 'my skin' --> ni taxay (R10 and R31 also apply).

R30. Closed-Syllable Vowel Shortening.

Long vowels are shortened before underlying clusters of /-hC/. Long vowels before secondary clusters created by R31 are not shortened.

$$V \rightarrow [-\text{long}] / __ hC$$

Example: /nə-šəkw-ii-h-t-oo-n/ 'I crush it' --> nšəkwihtoon (R31 also applies); compare without shortening the related Transitive Animate stem /nə-šəkw-ii-h-aa-w/ 'I crush him' --> nšəkwiihaaw.

R31. Schwa Deletion.

Weak /ə/ is deleted in open syllables.

$$\text{ə} \rightarrow \emptyset / \underset{\substack{| \\ \text{WK}}}{__} C$$

Example: /nə-kəpəčaa/ 'I am foolish' --> nkəpčə (R41 also applies); cf. /kəpəčaa-w/ 'he is foolish' --> kəpəčeeew (R13 also applies) Before voiceless obstruents /ə/ is deleted entirely and is not indicated in the transcription of surface forms. Before sonorants there is fre-

R34. A-Weakening

Weak /a/ between /h/ and /m/ is reduced to /ə/; frequently it is deleted.

$$a \rightarrow \begin{array}{c} \text{ə/h} \text{---} \text{m} \\ | \\ \text{WK} \end{array}$$

Example: /nə-ʒəkəp-ahamaa/ 'I play cards' --> nʒəkɾahəma (R31 and R41 also apply); cf.
/ʒəkəp-ahamaa-w-/ 'he plays cards' --> ʒkəphameew (R13, R29 and R31 also apply).

R35. Final W-Deletion.

Word-final /w/ is optionally deleted following a long vowel. Some speakers never delete /w/; others invariably do.

$$w \rightarrow \begin{array}{c} \text{V} \\ \text{ø/[+long]} \text{---} \end{array}$$

Example: /ahte-w/ 'it is there' --> ahte (R41 also applies). In the transcription used here, the effect of R35 is usually not indicated.

R36. W-Deletion.

The segment /w/ is deleted between a consonant or word boundary and /oo/ or /o/.

$$w \rightarrow \text{ø/ } \text{---} \text{o(o)}$$
R37. Postconsonantal W-Metathesis.

The segment /w/ metathesizes with a following /h/ or /x/ when postconsonantal.

$$w \left\{ \begin{array}{c} \text{h} \\ \text{x} \end{array} \right\} \rightarrow \left\{ \begin{array}{c} \text{hw} \\ \text{xw} \end{array} \right\} / \text{C---}$$

Example: /nə-ʒəkwaɦiikan/ 'my pounding block' --> nʒəkɦwiikan (R29 feeds R37); cf. /ʒəkwaɦiikan/ 'pounding block' --> ʒkwaɦiikan (R31 also applies).

R38. Initial W-Metathesis.

When word-initial, /w/ metathesizes with a following /k/, /h/, or /x/.

$$w \begin{Bmatrix} h \\ x \\ k \end{Bmatrix} \rightarrow \begin{Bmatrix} hw \\ xw \\ kw \end{Bmatrix} / \# _$$

Example: /wə-kək-al/ 'his mother' --> kwək-al (R31 also applies); cf. /nə-kək/ 'my mother' --> nkək (R31 also applies).

R39. Initial W-Deletion.

Word-initial /w/ deletes when preceding /m/, /p/, or /kw/.

$$w \rightarrow \emptyset / \# _ \begin{Bmatrix} m \\ p \\ kw \end{Bmatrix}$$

Example: /wə-paxkʃiikan/ 'his knife' --> paxkʃiikan (R29 also applies); cf. /wə-ʒəlpəl-əm/ 'his money' --> ʒəlpələm (R29 also applies).

R40. M-Deletion.

Initial /m/ is deleted preceding /x/.

$$m \rightarrow \emptyset / \# _ x$$

Example: /məxəs/ 'wood' --> xwəs (R6 and R25 also apply); cf. /nə-məxəs-əm/ 'my wood' --> nəmxwsəm (R6, R25 and R31 also apply).

R41. Final Vowel Shortening.

Word final vowels are shortened.

V --> [-long]/___#

Example: /nə-sii/ 'I say so' --> nsi (R31 also applies).

R42. Initial Geminate Consonant Reduction.

Sequences of identical consonants are deleted word-initially.

C_i C_i --> C_i/# __

Example: /nə-naxk/ 'my hand, arm' --> naxk (R29 also applies); cf. /kə-naxk/ 'your hand' --> kə_nnaxk 'your hand, arm'.

R43. Initial N-Deletion.

Word-initial /n/ (invariably in the prefix /nə-/ '1') is deleted before stem-initial /l-/.

n --> ø/#__l

Example: /nə-laxkəsii/ 'I am angry' --> laxksi (R29 and R41 also apply); cf. /kə-laxkəsii/ 'you are angry' --> kə_llaxksi (R29 and R41 also apply).

R44. Consonant Deletion.

In certain patterns of reduplication an initial consonant is deleted when followed by a weak short vowel and an identical stem-initial consonant. Example: /naniiskənaxkaaw/ 'he has dirty hands' --> aniiskənaxkeew. Compare /kənaniiskənaxkaa/ 'you have dirty hands' --> kənaniiskənaxka.

CHAPTER II

VERB FINALS

2.0 Introduction

Verb finals are suffixes which specify two types of grammatical information. The final constitutes the head of a word in that it determines the grammatical category to which the word is assigned (§1.5.1). Verb finals determine which of the four main verb classes a given verb stem is assigned to (§1.5.1; see also Bloomfield (1946: §55)). Transitive Animate (TA) and Transitive Inanimate (TI) verbs often come in pairs which are differentiated by the gender of the object. Similarly, Animate Intransitive (AI) and Inanimate Intransitive (II) verbs often come in pairs which are differentiated by the gender of the subject (see (2.2a-d) for examples).

In this chapter I will discuss the verb finals which are used in the primary derivation of the four classes of verb stems. In §2.0 the traditional view of the verb finals will be summarized, as well as some recent refinements of the traditional view proposed by Denny (1989). I will also outline the approach to verb finals that I will be assuming, which is distinct in several respects from the traditional analysis. In §2.1 I discuss the finals which form Transitive Animate stems. In §2.2 I discuss argument structure, as well as two of the 'minor' verb classes, the Animate Intransitive plus Object (AI+O) stems, and the ditransitive (TA+O) stems. In §2.3 I discuss the derivation of Transitive Inanimate stems. In §§2.4 and 2.5 I discuss finals which form Animate Intransitive and Inanimate Intransitive verb stems, respectively.

2.0.1 The Structure of Verb Finals

Verb finals traditionally are divided into two major types, the abstract finals and the concrete finals. The abstract finals are monomorphemic and generally have no obvious lexical meaning (Bloomfield (1946: §55)). Denny (1984) has argued that the abstract finals

convey information about aspectual subclasses and semantic roles, as will be discussed in §2.4. The concrete finals have a discernable meaning. The concrete finals may be divided into two types. Some are monomorphemic; they cannot be assigned any internal structure. Other concrete finals are segmentable into two distinct morphemes. That is, they are analyzed as bipartite suffixes. Bloomfield (1946: §57) treats some concrete finals as consisting of a significant prefinal followed by an abstract final.¹ The significant prefinal usually has some determinable element of meaning. Some forms which illustrate the types of structures which may occur are given in (2.1); 'prefinal' is abbreviated as 'PF', and 'abstract final' as 'AF'.

(2.1)

- | | | |
|-----|--|----------------------|
| (a) | wələsəw
/wəl-əsii-w/
good-AF-3 | 'he is good, pretty' |
| (b) | wəliixsəw
/wəl-iix-əsii-w/
good-PF(speak)-AF-3 | 'he speaks well' |
| (c) | nəmoonənaaw
/nə-moon-ən-aa-w/
1-extract-by hand-3-sg | 'I pluck him' |

In (2.1a) the stem /wələsii-/ consists of a root /wəl-/ 'good, well', followed by an abstract final /-əsii/ 'state'. In (2.1b) the stem /wəliixəsii-/ consists of the same root /wəl-/ followed by a prefinal /-iix-/ 'speak' and the same abstract final /-əsii/ which is found in (2.1a). In (2.1c) the root /moon-/ 'extract' is followed by the monomorphemic concrete final /-ən/ 'by hand'.

Within a given verb class (TA, TI, AI, II), a prefinal usually co-occurs with only one abstract final; this characteristic may account for why sequences of prefinal and final

¹ Bloomfield (1946) does not explicitly state that a prefinal is invariably followed by an abstract final. However the examples which he gives support this interpretation. Compare also Bloomfield (1962: §3.55), where a similar discussion using Menominee examples is found.

are treated as units in the traditional analysis. In (2.2a) below, the prefinal /-x-/ 'lay, be' occurs immediately before the AI final /-iin/ but does not co-occur with any other AI final. Some prefinals may co-occur with a final from each of the four major verb subtypes. In (2.2), the prefinal /-x-/ 'lay, be' occurs in verbs from each of the four subtypes.

(2.2)

(a) Animate Intransitive

ʃənkiixiin
/ʃənk-ii-x-iin-w/
level-Ep-lay/be-final-3
'he lays down'

(b) Inanimate Intransitive

ʃənkiixən
/ʃənk-ii-x-ən-w/
level-Ep-lay/be-final-3
'it lays down'

(c) Transitive Animate

nʃənkiixəmaaw
/nə-ʃənk-ii-x-əm-aa-w/
1-level-Ep-lay/be-final-3-sg
'I lay him down'

(d) Transitive Inanimate

nʃənkiixtoon
/nə-ʃənk-ii-x-t-oo-n/
1-level-Ep-lay/be-TI-theme sign-3
'I lay it down'

Other prefinals are more limited in distribution. For example, the prefinal /-əl-/ 'by forceful contact' (§2.1) occurs in transitive stems, but was not recorded in any intransitive stem.

(2.3)

mpəkʷələwaaw
/nə-pəkʷ-əl-aw-aa-w/
1-hole-forceful contact-TA-3-sg
'I make a hole in him'

mpəkʷəlamən
 /nə-pəkʷ-əl-am-ən/
 1-hole-forceful contact-TI1a-3
 'I make a hole in it'

The distribution of the pefinals will be discussed at the same time as the distribution of the finals.

2.0.2 Denny on Finals

I will discuss a proposal by Denny (1989) in which he makes explicit some of the assumptions of the traditional analysis. In addition to assuming that there is a set of abstract finals, Denny (1989) extends the traditional analysis by claiming that every concrete final has internal structure, and can be divided into two constituents: a concrete subfinal and an abstract subfinal (the concrete subfinals are equivalent to Bloomfield's significant pefinals).

In Denny's analysis, the set of abstract subfinals is identical to the set of abstract finals which are assumed in the traditional analysis. Denny (1989) assumes that the set of abstract finals constitutes a system distinct from that of the abstract subfinals, although he asserts that the abstract finals are 'derived' from the abstract subfinals. Since the abstract subfinals and the abstract finals are identical in form, he is claiming that there are two sets of homophonous morphemes which are found in the verb system.²

As discussed above, there are also concrete finals which do not appear to be segmentable. Denny (1989) assumes that all concrete finals, including those with no readily apparent internal structure, consist of a concrete subfinal and an abstract subfinal. Verb finals which have lexical meaning are analysed as being morphologically complex, consisting of a concrete subfinal and an abstract subfinal, with the lexical meaning being assigned

² There are some exceptions in the AI system. The final /-iin/ occurs as an abstract final preceded by /-x-/ 'lie, be', but does not otherwise occur as an abstract final (§2.4.2.5). For some comments on abstract finals which only appear following pefinals, see §4.2.7.

to the concrete subfinal. In such cases, Denny takes the position that the abstract subfinal is a zero morpheme. An example will help to make clear what is being proposed. There is a final suffix */-ən/* 'by hand' which forms Transitive Animate (TA) verbs, such as the stem */nak-ən-/* 'stop someone by hand' (§2.1.4). This final has a discernable meaning, and also determines the stem type of the verb stem in which it appears. However it is not segmentable into two distinct morphemes. In Denny's framework it would be analyzed as consisting of a concrete subfinal */-ən/* 'by hand' and the abstract subfinal */-ø/*.³

Denny's analysis of the concrete finals appears to be based entirely upon distributional considerations, presumably resulting from a desire to make all of the concrete finals identical in structure. However, this proposal is not motivated by empirical factors in that no arguments are advanced which would support the necessity of postulating zero suffixes. While a priori it may not be possible to rule out analyses involving zero morphemes, making use of zero morphemes in the analysis of Delaware stem morphology leads to a result which is somewhat startling. The TA, AI, and II verb classes all contain non-segmentable concrete finals. Following Denny's analysis to its logical conclusion would result in there being at least three distinct zero morphemes, one in each category.

Denny's analysis entails that some verb finals are suffixes which have internal structure, as does the traditional analysis. However, in line with the position taken in Chapter I, I assume that a suffix node cannot be dominated by another suffix node. Therefore I reject Denny's proposal; I will outline my approach in §2.0.3.

2.0.3 The Structure of Finals

I propose an analysis which does not require the types of morphological entities assumed within the traditional analysis. Abstract finals are suffixes which in their lexical entries contain features which determine grammatical category and verb class. The mor-

³ Denny's position is that only concrete subfinals have lexical meanings. Otherwise, there would be no impediment to claiming that */-ən/* is the abstract subfinal, and that */-ø/* has the meaning 'by hand'.

phemes which precede finals, called significant prefinals by Bloomfield and concrete subfinals by Denny, will be analyzed as 'prefinal' suffixes whose lexical entries do not contain features pertaining to grammatical category or stem type. They also require specifications which determine their morphological subcategorization; that is, what types of morphemes they are suffixed to. The term 'prefinal' will henceforth be used solely to denote suffixes of this type.

In the case of non-segmentable concrete finals such as /-ən/ 'by hand', discussed above, the lexical entry for this affix contains a specification of its meaning as well as its features for syntactic category, subcategorization requirements, and argument structure.

The approach taken here has two implications. The first is that the segmentable concrete finals (those that consist of a prefinal and a final) are not analyzed as being dominated by a suffix node, that is, as a complex suffix. Secondly, the use of zero morphemes will be significantly restricted if not eliminated, since there is no need to postulate zero morphemes in order to ensure that all 'concrete' finals have a bipartite structure. The term 'concrete' final is used here to refer solely to the non-segmentable morphemes which have a determinable lexical meaning. All other finals are referred to and analyzed as abstract finals.

2.1 Transitive Finals

Transitive verb stems are traditionally divided into two major types, Transitive Animate (TA) and Transitive Inanimate (TI). Most TI stems enter into regular relationships with corresponding TA stems. In many cases a given TI stem can, in a sense to be made precise, be 'derived' from the corresponding TA stem (Goddard (1979a: 75); Piggott (1979)).

In this section the finals which are used to form TA stems are discussed. The finals which form TA stems can be divided into four major subgroups, each of which is represented by a large number of stems. Apart from the four major subgroups, there are also a number of finals which do not fall into the major patterns, including several which only oc-

cur in a limited number of stems. Some TA and TI stems (or their finals) are suppletive. That is, there is no regular relationship between the two.

The four major groups of stems are defined in terms of two intersecting criteria: the final suffix which forms the TA stem, and the manner in which the corresponding TI stem is formed. The major groups are: (1) stems formed with the final suffix /-w/; (2) stems formed with the final /-aw/; (3) stems formed with a final or finals that end in /-l/; (4) stems formed with several different finals ending in /-m/, or in one case only, /-h/.⁴

Several finals do not fit into the major patterns listed above. These include the common TA final /-ən/ 'by hand', which is homophonous in the TI. Other TA finals which do not fit into the major patterns outlined above are listed in (2.32-2.33). Some TA stems which do not contain a final are listed in §1.6.

In order to better understand the relationships between TA and TI stems some basic information about TI stems will be summarized here. The TI verb stems can be divided into three groups, which may be referred to as Classes 1, 2 and 3, following Goddard (1979a: Ch. IV), whose analysis is based on that of Bloomfield (1962: Ch. VII). The Class 1 TI stems can be further subdivided into two subclasses, 1a and 1b. The classes are determined by the TI 'theme sign' which a given stem contains. The theme sign is a morpheme which occurs immediately after the TI verb stem.⁵ The function of the TI theme signs is controversial; see §2.3 for discussion. Class 1a TI stems take theme sign /-am/; Class 1b stems take theme sign /-əm/; Class 2 stems take theme sign /-oo/ alternating with /-aw/;⁶ Class 3 stems take no theme sign. The majority of TI stems are assigned to Class 1a, 1b, or 2.

⁴ Somewhat different groupings of stems can be made according to morphophonological criteria (Goddard (1979a: Ch. IV)).

⁵ The term 'theme sign' is also used in the analysis of TA verbs. The status of theme signs in TA verbs is not at issue here. See §2.2.0 and Goddard (1979a: Ch. V).

⁶ The distribution of the variants is morphologically conditioned: /-oo/ appears before all endings used in the independent and imperative orders, before the conjunct order third plural, and also before the diminutive and negative affixes in all verbal orders; /-aw/ occurs before all endings used in the conjunct order, except third plural and negative and diminutive endings (Goddard (1979a: 71-72)).

There is a small number of Class 3 TI stems; Goddard (1979a: 74) lists seven.⁷ All TI classes take the same inflectional endings; in TI 1a, 1b and 2 stems, inflections are added to the theme sign; in TI 3 stems inflections follow the stem.⁸ The theme sign /-əm/ is, historically, a variant of /-am/ which occurred after stems containing a final suffix whose vowel was /-ə-/. However, synchronically, its distribution is not entirely predictable, since it also occurs in certain other environments. Therefore, although its distribution is restricted, it is represented as a separate theme sign (see Goddard (1979a: Ch. IV) and (1982: 44-45) for remarks).

In (2.4) I give an example of a TI stem from each of the three classes. For the TI Class 2 examples, the first example shows the theme sign variant /-oo-/ in the independent order. The second example shows the theme sign variant /-aw/ in the conjunct order.

(2.4)

Class 1a

mpəntamən
/nə-pənt-am-ən/
1-hear-TI1a-3
'I hear it'

Class 1b

nkwətənəmən
/nə-kwət-ən-əm-ən/
1-try-by hand-TI1b-3
'I feel for it (by hand)'

Class 2

nkəʃiixtoon
/nə-kəʃiix-t-oo-n/
1-wash-TI-theme sign-3
'I wash it'

⁷ The combination of prefinal /-taačiin-/ 'drag' and TI /-t/, which occurs in TI Class 3 stems such as /pəm-taačiin-t/ 'drag something along', was recorded in a number of stems; therefore the total number of TI3 stems would be larger.

⁸ The affixes used in the inflection of TI stems are discussed in §2.2.0.

kʃiixtawaane
 /kəʃiix-t-aw-aan-ee/
 wash-TI-theme sign-1/3-subj
 'if I wash it'

Class 3

mpəmtaačiintən
 /nə-pəm-taačiin-t-ən/
 1-along-drag-TI-3
 'I drag it along'

The status of the theme signs is discussed in §2.3.1.

2.1.1 TA Stems Formed With the Final /-w/

I now discuss and exemplify the four main groups of TA stems. A summary table is presented in (2.34), at the end of this section. Group (1) stems are formed with the final /-w/ added directly to a root or preceded by a prefinal. This final has no phonetic realization when preceded by the instrumental prefinals. It either undergoes coalescence with adjacent vowels (R16) or is deleted in other environments (R21). Group (1) includes the large number of stems in which /-w/ is preceded by the 'instrumental' prefinals /-ah-/ 'by tool/instrument'; /-əʃ-/ 'by cutting action'; and /-əs-/ 'by heat'.

Group (1) stems form derived TI stems in a uniform manner, by deleting /-w/ and adding the appropriate TI theme sign (§2.3.2). Examples of TA stems formed with instrumental prefinals and /-w/ are given in (2.5), as are the corresponding TI stems, with theme signs.

(2.5)

/kwəlap-ah-w-/	'dent someone'
/kwəlap-ah-am-/	'dent something'
/kohpak-əʃ-w-/	'cut someone thick'
/kohpak-əʃ-əm-/	'cut something thick'
/peenkw-əs-w-/	'dry someone by heat'
/peenkw-əs-əm-/	'dry something by heat'

One TA stem appears to be formed with /-w/ added to a root ending in /-x/. The stem /kwax-w/ 'be afraid of someone' behaves morphophonemically as if it is formed with final /-w/, since it shows contraction (R16) in the same environments as TA stems formed with /-w/ (R16): nkwxaxaaw 'I am afraid of him', but with contraction, nkwxaxookw (i.e. /nə-kwaxw-əkʷ/) 'he is afraid of me'. However, several informants gave forms without contraction in verbs inflected for first person subject and second person object, where contraction would also be expected: kwaxəl for expected kwaxool 'I am afraid of you'.

A few stems appear to contain a prefinal /-as-/ 'by heat': /sal-as-w-/ 'fry someone'. The segmentation is supported by the occurrence of the root /sal-/ 'fry' in forms such as sal-apwaaŋ 'fried bread', where the second element is /apwaaŋ/ 'bread'.

The instrumental prefinals /-əš-/ 'by cutting' and /-əs-/ 'by heat' have the form /-š-/ and /-s-/ when added to certain roots ending in nasal consonants: /moon-š-w-/ 'cut someone's hair', and /wən-s-w-/ 'bring someone to a boil'. It could be argued that the schwa vowel preceding /-š/ and /-s/ in other stems (for example in (2.5)) is epenthetic. That is, the rule of epenthesis of /-ə-/ could be formulated as not applying after a nasal consonant. Since the exact form of the epenthesis rule has not been worked out, I will leave this problem in abeyance, and assume that the prefinals may be represented as /-əš/ and /-əs/. I will treat the stems /moon-š-w-/ 'cut someone's hair', and /wən-s-w-/ 'bring someone to a boil' as containing irregular instances of the prefinals /-əš-/ and /-əs-/, respectively.

The final /-w/ occurs without a prefinal, that is, added directly to a root, in only a few stems: /pəm-w-/ 'shoot someone (with an arrow)' (not recognized by my informants, but cited by Goddard (1979a: 68)). There are other TA stems, listed in (2.6), which occur with a TA final /-w/. The corresponding TI is also listed.

(2.6)

/mwəh-w-/	'eat someone'
/miičii-/	'eat something'

/kətam-w-/	'eat someone up'
/kətaam-m-/	'eat something up'
/məlaa-w-/	'smell someone'
/məlaa-m-/	'smell something'
/nee-w-/	'see someone'
/nee-m-/	'see something'
/katoo-p-w-/	'be hungry for someone'
/katoo-t-/	'be hungry for something'

2.1.2 TA Stems Formed With the Final /-aw/

Group (2) stems are formed with the final /-aw/ added directly to a root or preceded by a prefinal. The corresponding TI stems are formed by dropping /-aw/ and adding the TI1a theme sign /-am/. Group (2) stems formed by adding the final /-aw/ directly to roots are listed in (2.7), as are the corresponding TI stems, which are all formed with the TI 1a theme sign /-am/.

(2.7)

/pən-aw-/	'look at someone'
/pən-am-/	'look at something'
/mahl-aw-/	'buy someone'
/mahl-am-/	'buy something'
/kwiil-aw-/	'search for someone (esp. in vain)'
/kwiil-am-/	'search for something (esp. in vain)'
/moxk-aw-/	'find someone'
/moxk-am-/	'find something'
/pənt-aw-/	'hear someone'
/pənt-am-/	'hear something'
/nən-aw-/	'recognize someone'
/nən-am-/	'recognize something'
/tihl-aw-/	'chop someone down'
/tihl-am-/	'chop something down'

The final /-aw/ may be preceded by one of several prefinals, including /-əl-/ 'by forceful contact'; /-əsət-/ 'by hearing'; /-iin-/ 'by sight'; /-ht-/ 'by hearing'; /-hk-/ 'by foot/body'; /-sk-/ 'by foot/body'.⁹ Examples are given in (2.8), as are the corresponding TI stems, with theme signs.

(2.8)

/pas-əl-aw-/	'split someone (by forceful contact)'
/pas-əl-am-/	'split something (by forceful contact)'
/čan-əsət-aw-/	'misunderstand someone'
/čan-əsət-am-/	'misunderstand something'
/mač-iin-aw-/	'dislike the looks of someone'
/mač-iin-am-/	'dislike the looks of something'
/nəno-ht-aw-/	'understand someone'
/nəno-ht-am-/	'understand something'
/kaxk-ii-hk-aw-/	'break someone (by foot/body)'
/kaxk-ii-hk-am-/	'break something (by foot/body)'
/nak-ii-sk-aw-/	'meet someone'
/nak-ii-sk-am-/	'meet something'

2.1.3 TA Stems Formed With Finals Ending in /-l/

Transitive Animate Group (3) consists of the large number of TA stems which end in the segment /-l/. Usually they form a corresponding TI stem ending in /-t/. The analysis of some of the stems considered in this section is unclear. It is argued that there are several finals of the form /-l/, which will be distinguished as /-l/₁ and /-l/₂¹⁰. Some morphemes which precede the finals of the form /-l/ undergo rules of allomorphy triggered by the

⁹ The prefinal /-sk-/ occurs only in the TA stem /nak-ii-sk-aw/ 'meet someone', and in the corresponding TI stem /nakiisk-/ 'meet something'. The II verb *pxwiiskew* 'it is skinned' may also contain this prefinal, but this is not certain.

¹⁰ Although some instances of Delaware /-l/ are reflexes of Proto-Algonquian */l/, while others are reflexes of Proto-Algonquian */θ/, there is little motivation for assuming that this distinction is synchronically relevant.

finals. The morphophonology of stems formed with /-l/₁ and /-l/₂ is complex; the remarks made here are necessarily subject to revision.

A small number of TA stems are formed in primary derivation with TA final /-l/₁, and have a corresponding TI stem ending in /-t/. In all of the examples in (2.9), the final is added directly to a root, except in 'drag someone', the last example in (2.9), where it is added to a prefinal. The corresponding TI stem is also given, including theme sign. The meanings of some of these stems suggests that /-l/ has a causative sense, although this is not transparent for all.

(2.9)

/naa-l-/	'go after someone'
/naa-t-əm-/	'go after something'
/wih-l-/	'name someone' ¹¹
/wiin-t-am-/	'name something'
/wəh-l-/	'get someone (from somewhere)' ¹²
/wən-t-/	'get something (from somewhere)'
/ah-l-/	'place someone'
/ah-t-oo-/	'place something'
/kwəh-l-/	'swallow someone' ¹³
/kwən-t-am/	'swallow something'
/kaa-l-/	'hide someone'
/kaa-t-oo-/	'hide something'
/nih-l-/	'kill someone'
/nih-t-oo-/	'kill something'
/pak-ii-l-/	'abandon someone'
/pak-ii-t-oo/	'abandon something'
/noh-l-/	'nurse someone' ¹⁴

¹¹ The underlying form of the TA stem is /wiin-l-/; R3 and R30 apply.

¹² The underlying form of the TA stem is /wən-l-/; R3 applies.

¹³ The underlying form of the TA stem is /kwən-l-/; R3 applies.

¹⁴ The corresponding TI was not recorded, but /noon-t/ would be expected.

/pəm-taačih-l-/	'drag someone along' ¹⁵
/pəm-taačiin-t-/	'drag something along'

In a large number of stems which appear to be formed with TA final /-l/, the morphemes which immediately precede the final are subject to certain morphophonological alternations. The analysis of these stems is not always clear; I will proceed from the more straightforward to the more obscure cases.

The final /-l/ is added to roots or to certain combinations of root and medial which end in /-oo/, as exemplified in (2.10).¹⁶

(2.10)

(a)	/məšamoo-l-/	'pile someone in a heap'
(b)	/mačiisəmoo-l-/	'give someone something bad to drink'
(c)	/tahiixəmoo-l-/	'give someone a bath'
(d)	/poosoo-l-/	'give someone a ride'
(e)	/pahčoo-l-/	'cheat someone'
(f)	/kwəčiimoo-l-/	'ask someone'

The examples in (2.10) contain sequences preceding /-l/ which end in /-Cwii/ in other environments. For example the first three TA stems in (2.10) each have a corresponding AI stem, as in (2.11a-c). In the stems in (2.11), /-ii/ may be analysed as an AI final suffix, preceded by a prefinal.

(2.11)

(a)	/məš-amw-ii-/	'be in a pile'
	/məšamoo-l-/	'pile someone in a heap'
(b)	/mačii-səmw-ii-/	'take a drink of something bad'
	/mačiisəmoo-l-/	'give someone something bad to drink'

¹⁵ The underlying form of the TA stem is /pəm-taačiin-l-/; R3 and R30 apply.

¹⁶ In one example it appears that /-(oo)l/ is added to an AI stem followed by a connective /-w-/: /akiinsii-w-ool-/ 'read to someone'; see §1.7.

- (c) /tahii-xəmw-ii-/ 'be in the water (swimming)'
 /tahii-xəmo-1-/ 'give someone a bath'

If the TA forms in (2.11) are analysed as being derived from the corresponding AI stems, the alternations between /-Cwii/ and /-Coo/ in these forms suggest that, for example, /-amw-ii/ 'pile' has the form [-amoo-] before /-1/.

The TA final /-1/ also appears in a large number of stems where it is preceded by the segments /-aa/, or /-a/. The final suffix /-1/ occurs after many roots which end in short /-a/. Examples of /-1/ added directly to roots ending in /-a/ are listed in (2.12). The corresponding TI stems are formed with /-t/.

(2.12)

- | | |
|---------------|-------------------------------|
| /maača-1-/ | 'take someone home' |
| /maača-t-oo-/ | 'take something home' |
| /nəka-1-/ | 'abandon someone' |
| /nəka-t-əm-/ | 'abandon something' |
| /sahka-1-/ | 'boil someone' |
| /sahka-t-oo-/ | 'boil something' |
| /niipa-1-/ | 'stand someone up' |
| /niipa-t-oo-/ | 'stand something up' |
| /wiiša-1-/ | 'scare someone' ¹⁷ |

In a number of cases it can be argued that /-1/ is being added to existing AI stems, usually stems ending in /-ee/. Consider the TA stem for 'cover someone with water' in (2.13a).

(2.13)

- (a) /wan-əpa-1/
 out of sight-water-TA
 'cover someone with water'

¹⁷ No corresponding TI stem was recorded.

- (b) /wan-əp-ee-/
out of sight-water-AI
'be covered over with water'

Since there is an AI stem (2.13b) ending in /-ee/, it could be claimed that /-l/ is being added directly to the AI stem, with a morphologically governed shift of stem-final /-ee/ to /-a/ before /-l/. Bloomfield (1946: §81) assumed similar analyses in some cases for other Algonquian languages.

Similarly, the TA stem in (2.14a) is related to the AI stem in (2.14b), which is formed by adding /-ee/ to a root.

(2.14)

- (a) /wənkəa-l-/
bark-TA
'bark at someone'
- (b) /wənk-ee-/
bark-AI
'bark'

Since there is an AI stem 'bark' (2.14b), the TA stem can be analyzed as being formed by adding TA /-l/ to the AI stem with a morphologically governed shift of /-ee/ to /-aa/.

TA stems with final /-(a)l/ (2.15a) are productively formed with the prefinal suffix /-hl-/ 'motion'. Here, however, the corresponding AI is formed with the final /-aa/ (2.15b).

(2.15)

- (a) /weem-i-hl-a-l-/
all-Ep-motion-TA
'use someone up'
- (b) /weem-i-hl-aa-/
all-Ep-motion-AI
'be used up'

There is no phonologically motivated conditioning involved in these alternations of vowels before /-l/. Even if it is assumed that the conditioning of the alternations is morphologically governed, it does not appear possible to state distinct morphological

environments for each shift of the stem-final vowel, since in all cases the morpheme which is added is a TA final of the form /-l/. It is claimed that the alternations are morphologically conditioned, and that there are two distinct TA finals of the form /-l/, each associated with a distinct morphophonological alternation.

It is proposed that there are several homophonous finals of the form /-l/, each of which is associated with a distinct morphophonemic effect. The final /-l/₁ triggers the shift of /-ee/ to /-aa/, as in (2.14). The final /-l/₂ triggers the shift of /-ee/ to /-a/, as in (2.12) and (2.13). However, it is uncertain which final of the form /-l/ is added directly to roots, as in (2.9). Similarly, it is uncertain which of the finals occurs in stems which contain the allomorph [-oo-] preceding the final (2.10), and it is uncertain which of the finals occurs in the TA stems exemplified in (2.15) and (2.17-20).

The final /-l/ also occurs after certain suffixes. These include /-hl-/ 'motion', /-oox-/ 'bring', /-iin-/ 'to death', and /-əp-/ 'water'. Examples of /-l/ after these morphemes are listed in (2.16).

(2.16)

- | | | |
|-----|--------------------|--|
| (a) | /kwəč-i-hl-a-l-/ | 'try someone out; test someone' |
| | /kwəč-i-hla-t-oo-/ | 'try something out; test something' |
| (b) | /kaxk-oox-a-l-/ | 'return someone; bring someone back' |
| | /kaxk-oox-a-t-oo-/ | 'return something; bring something back' |
| (c) | /aapəč-iin-a-l-/ | 'work someone to death, very hard' |
| (d) | /niisk-əp-a-l-/ | 'get someone wet in rain' |
| | /niisk-əp-a-t-oo-/ | 'get something wet in rain' |

The examples in (2.17) and (2.18) all make TI stems with /-t/ replacing /-l/. TA stems formed with the prefinal /-kw-/ 'sew' and final /-(aa)l/ form their TI according to a different pattern, in which it appears that TA stem-final /-(aa)l/ is dropped in the corresponding TI (2.19) (see also §3.2.1.2). In the examples in (2.17) the status of the long vowel /-aa/ preceding the final is uncertain. In some cases where evidence is available,

there is little justification for proposing that /-aa/ is part of the root. For example, the root in /miixanaal-/ 'be ashamed of someone' (2.17) also occurs in the AI stem /miixan-əsii-/ 'be ashamed', which would justify analyzing the root as /miixan-/.

(2.17)

/miixan-aal-/	'be ashamed of someone'
/miixan-aat-am-/	'be ashamed of something'
/noon-aal-/	'suck on someone'
/noon-aat-am-/	'suck on something'
/šaw-aal-/	'be in a hurry for someone to die'
/tap-aal-/	'support, look after someone'
/nax-aal-/	'be wary of someone'

It might appear that a final of the form /-l/ has an allomorph /-aal/ in certain cases. However, analysing the segment /-aa-/ as a part of the TA final raises difficulties. In particular, /-aa/ also appears in the corresponding TI stems, as in (2.17). As will be discussed in §2.3, TI stems of the type exemplified in (2.17) are formed by adding a morpheme /-t/ to a TA stem. This morpheme /-t/ has the property of truncating the TA final of the stem to which it is attached. Aronoff (1976: 88) describes rules of truncation as deleting "a designated stem-final morpheme before a designated suffix". If the deletion of the stem-final segment of a TA stem ending in /-l/ is analysed as a case of truncation in the sense in which Aronoff uses the term, then either the preceding vowel /-aa-/ is not part of the final suffix, or the definition of a rule of truncation needs to be revised. Since truncation rules appear to have well-defined properties, it is concluded that /-aa/ is not part of the final.

The sequence /-aa-l/ is added to certain prefinals (2.18). In the examples in (2.18), /-aa-l/ is preceded by the prefinals /-m-/ 'smell'; /-onkw-/ 'sleep'. Again, in these examples the status of the segment /-aa/ preceding /-l/ appears to be uncertain, particularly since /-aa/ cannot be analysed as part of the prefinal suffix.

(2.18)

- | | | |
|-----|--|---|
| (a) | /kwakwəč-ii-m-aal-/
try (redup)-Ep-smell-TA | ‘sniff at someone’ ¹⁸ |
| (b) | /wiink-ii-m-aal-/
nice-Ep-smell-TA | ‘like the smell of someone’ ¹⁹ |
| (c) | /nam-onkw-aal-/
dream-sleep-TA | ‘dream about someone’ |
| | /namonkwaat-/
 | ‘dream about something’ |

Unlike the stems in (2.17) and (2.18), which also have TA stems formed with /-l/, in the example in (2.19) TA final /-(aa)l/ is preceded by the prefinal /-kw-/ ‘sew’. In (2.19), the corresponding TI is not formed by adding /-t/ to TA stems ending in /-(aa)l/, but rather the TI theme sign /-am/ occurs directly after the prefinal. There is no morphological or phonological factor which appears to be involved in the differences in how the TA stems in (2.17) and (2.19) form their corresponding TI stems.

(2.19)

- | | |
|---|--|
| /čan-ii-kw-aal-/
/čan-ii-kw-am-/
 | ‘make an error in sewing someone’
‘make an error in sewing something’ |
|---|--|

A few comments about the meaning of /-kw-/ will be made here. The prefinal /-kw-/ used to form TA and TI stems pertaining to sewing also occurs in stems whose semantics suggest that /-kw-/ has a somewhat broader meaning. Stems such as those in (2.20) suggest that the meaning of /-kw-/ is, roughly, ‘by contact with elongated object’.

(2.20)

- | | | |
|-----|--------------------------------------|---|
| (a) | /mahkii-kwaal-/
detach-contact-TA | ‘detach someone (esp. using pole, stick)’ |
|-----|--------------------------------------|---|

¹⁸ No TI corresponding to this TA stem was recorded, although /kwakwəčiimaat-/ would be expected.

¹⁹ No TI corresponding to this TA stem was recorded, although /wiinkiimaat-/ would be expected.

- (b) /wəlii-kw-/ 'scrape something'
good-contact
- (c) /naačii-kw-/ 'fetch something'
fetch-contact

Example (2.20a) could appropriately be used to describe knocking an apple down from a tree with a pole. Similarly, (2.20b) could be used to describe the action of the blade of a road grader which is scraping the surface of a road. Example (2.20c) could describe someone retrieving an object under a bed, using a broom.

2.1.4 TA Stems Formed With Finals Ending in /-m/ or /-h/

Group (4) is comprised of stems formed with several finals ending in /-m/ or, in one case only, /-h/. The finals in this group form TI stems by adding /-t/ directly to the TA stem. There are two distinct finals which have the form /-əm/. A TA abstract final /-əm/ follows the prefinal /-x-/ 'lay, be'. The corresponding TI stem is formed by adding /-t/. In this combination the TA final is truncated before /-t/, as in (2.21b). This peculiarity is confined to this one sequence of morphemes. No other TA finals are truncated when /-t/ is added, except for /-l/ (§2.3.3).

(2.21)

- (a) nšii piixəmaaw
/nə-šiip-ii-x-əm-aa-w/
1-stretch-Ep-lay-TA-3-sg
'I stretch him out'
- (b) nšii piixtoon
/nə-šiip-ii-x-t-oo-n/
1-stretch-Ep-lay-TI-TI2-3-sg
'I stretch it out'

In the case of the prefinal and final sequence /-eel-əm-/ 'by thought', however, there is no truncation of the final in the TI, as in (2.22) below.

(2.22)

- /kaanš-eel-əm-/ 'think highly of someone'
/kaanš-eel-ən-t-am-/ 'think highly of something'

I assume that there are two homophonous TA finals of the form /-əm/, which may be distinguished on the basis of their morphophonemic behaviour. I will denote the truncating suffix /-əm/ as /-əm/₁, and the corresponding non-truncating suffix as /-əm/₂.

The non-truncating final /-əm/₂ is also found in a number of stems, added directly to roots (see §2.2.3 for a discussion of the ditransitive (TA+O) stem /kəmoot-əm/ 'steal someone, something from someone', which also contains this final).

(2.23)

/wiič-əm-/	'help someone'
/wiič-ən-t-əm-/	'approve of something'
/mantoo-əm-/	'blame someone, be dissatisfied with someone's actions'
/waankoo-əm-/	'kiss someone'
/wəšii-əm-/	'flee from'

The non-truncating final /-əm/₂ also occurs preceded by the prefinals /-aankoo-/ 'relation'; /-pee-/ 'sleep'; /-aapee-/ 'man'; /-eel-/ 'by thought'. The corresponding TI stem, where formed, adds /-t/ directly to the TA stem, without truncation of the TA final.

(2.24)

/kaanš-eel-əm-/	'think well of someone'
/kaanš-eel-ən-t-əm-/	'think well of something'
/naxp-aankoo-əm-/	'be related to someone also'
/wih-pee-əm-/	'sleep with someone' ²⁰
/əl-aapee-əm-/	'be handy to someone'

A suffix of the form /-əm/ is also found, rarely, added to AI stems to form TA stems. No corresponding TI stem was recorded for the following examples, hence it is uncertain whether /-əm/₁ or /-əm/₂ is present. AI stems ending in /-ii/ have an allomorph /-o/

²⁰ The underlying form of this stem is /wiit-pec-əm-/; R2 and R30 apply.

before the suffix /-əm/ (2.25a-c). In one example, an AI stem ending in /-aa/ has a variant /-ee/ before /-əm/ (2.25d). The alternation of /-ii/ and /-o/ is irregular in that it is limited to these combination of morphemes and does not occur elsewhere.

(2.25)

- | | | |
|-----|-------------------------------------|---|
| (a) | /wiit-apo-m-/
/wiit-apii-/ | 'stay with someone; eat with someone'
'stay together' (AI) |
| (b) | /niiš-apo-m-/
/niiš-apii-/ | 'sit with someone; live with someone'
'live together' (AI) |
| (c) | /wiitaaw-əso-m-/
/wiit-aaw-əsii/ | 'live with someone'
'live with' (AI) |
| (d) | /niiš-kee-m/
/niiš-kaa-/ | 'dance with someone'
'dance in twos' (AI) |

The final /-am/ 'by the action of the mouth, in the mouth' forms a large number of TA stems. The corresponding TI adds /-t/, followed by the TI1a theme sign /-am/.

(2.26)

- | | |
|-----------------|-------------------|
| /kwət-am-/ | 'taste someone' |
| /kwət-an-t-am-/ | 'taste something' |

The final /-m/ 'by speech' forms a large number of TA stems. No corresponding TI stems were recorded.

(2.27)

- | | |
|---------------|-------------------------------|
| /čaank-ii-m-/ | 'make someone cry by talking' |
|---------------|-------------------------------|

The final /-aam/ 'by speech' forms a small number of verbs. Its relation to /-m/ 'by speech' is unclear. No corresponding TI stems were recorded.

(2.28)

laxkaamaaw
 /nə-laxk-aam-aa-w/
 1-bitter-speech-3-sg
 'I scold him'

The final /-aapam/ 'by sight' forms a corresponding TI by adding /-t/ to the TA stem. It is possible that /-aapam/ could be further segmented as /-aap-/ 'vision', and /-am/ 'TA'. However, the suffix /-am/ is distinct from the homophonous /-am/ discussed above (2.26), which consistently has the meaning 'by mouth'. Historically, /-aapam/ is the bound variant of a now non-occurring verb stem /waapam-/ 'see someone'.

(2.29)

natawaapamaaw
 /nə-nataw-aapam-aa-w/
 1-search-by sight-3-sg
 'I look around searching for him'

natawaapantamən
 /nə-nataw-aapam-t-am-ən/
 1-search-by sight-TI-TI1a-3
 'I look around searching for it'

One pair of stems is formed with /-oom/ 'on the back'; the corresponding TI stem adds /-t/. The final /-oom/ is more commonly found in AI stems formed with AI final /-aa/: mpceethooma 'I come hither on horseback'.

(2.30)

nayoomaaw
 /nə-nay-oom-aa-w/
 1-carry-on back-3-sg
 'I carry him on the back'

nayoontamən
 /nə-nay-oon-t-am-ən/
 1-carry-on back-TI-TI1a-3
 'I carry it on the back'

The common TA final /-h/ 'cause' forms its corresponding TI by adding /-t/ and the TI2 theme sign /-oo/ ~ /-aw/. However, when /-h/ 'cause' is preceded by the 'medial' suffix /-htee-/ 'hit' (§4.5.11) it does not add /-t/ and is followed by the TI1a theme sign /-am/. Compare the examples in (2.31).

(2.31)

- (a) nšaaxkihtoon
/nə-šaax(a)k-ii-h-t-oo-n/
1-straight-Ep-cause-TI-TI2-3
'I make it straight'
- (b) nəšaaxkihteehəmən
/nə-šaax(a)k-ii-htee-h-am-ən/
1-straight-Ep-hit-cause-TI1a-3
'I straighten it by hitting'

I analyse the stem-final morpheme in (2.31b) as the final suffix /-h-/ 'causative' rather than as the prefinal suffix /-ah-/ 'instrumental'. The motivation for doing so is that, in the analysis which will be discussed in §2.3, TI stems such as (2.31b) are formed from the corresponding TA stems. If the stem in (2.31b) were analysed as containing /-ah-/ 'instrumental', the TA stem upon which it would be based would be formed with the prefinal /-ah-/ and final /-w/. TA stems of this type undergo morphophonological contraction in several environments (R8). However, the TA stem corresponding to (2.31b) does not undergo contraction in these environments. As a result, I conclude that these stems are formed with /-h/ 'causative', and not with the prefinal suffix /-ah-/ 'instrumental'. It is not being suggested that the TA final /-w/ does not drop in TI forms, but that the TA stem /šaaxkihteeh-/ which corresponds to (2.31b) is formed with the TA final /-h/ 'cause', which does not end in the segment /-w/.

2.1.5 Other Patterns

Apart from the patterns discussed above, which account for the majority of transitive stems, there are a number of other patterns. Some of these are reflected by a single final or even by a single pair of stems. These will be taken up briefly.

The very commonly occurring TA final /-ən/ 'by hand' is homophonous in the TI.

(2.32)

ntəpənaaw
/nə-təp-ən-aa-w/
1-revolve-by hand-3-sg
'I turn him around by hand'

ntəpənəmən
/nə-təp-ən-əm-ən/
1-revolve-by hand-TI1b-3
'I turn it around by hand'

There are a number of TA and TI stem pairs which are suppletive. That is, it is not possible to state a regular relationship between the TA stem and the corresponding TI stem.

(2.33)

(a) nəmohaaw
/nə-mwəhw-aa-w/
1-eat-TA-3-sg
'I eat him'

nəmiičiin
/nə-miīčii-n/
1-eat-3
'I eat it'

(b) nkətamwaaw
/nə-kətamw-aa-w/
1-eat up-3-sg
'I eat him up'

nkətaamən
/nə-kətaam-ən/
1-eat up-3
'I eat it up'

(c) mpeešəwaaw

/nə-peeʃəw-aa-w/
1-bring-3-sg
'I bring him'

mpeetoon
/nə-peat-oo-n/
1-bring-TI2-3
'I bring it'

- (d) nkatoopwaaw
/nə-katoo-p-w-aa-w/
1-want-eat-TA-3-sg
'I am hungry for him'

nkatootamən
/nə-katoo-t-am-ən/
1-want-TI-TI1a-3
'I am hungry for it'

- (e) ntanhaaw
/nə-t-an-ah-w-aa-w/
1-Ep-lose-by tool-TA-3-sg
'I lose him'

ntanihtoon
/n -t-an-ii-h-t-oo-n/
1-Ep-lose-Ep-cause-TI-TI2-3
'I lose it'

- (f) ntakəniimaaw
/nə-t-akən-iim-aa-w/
1-Ep-report-by speech-3-sg
'I talk about him'

ntakənootəmən
/nə-t-akən-oot-əm-ən/
1-Ep-report-TI-TI1b-3
'I talk about it'

- (g) ntayəwaaw
/nə-t-ayəw-aa-w/
1-Ep-obtain-3-sg
'I get, have him'

ntayəntamən
/nə-t-ayən-t-am-ən/
1-Ep-obtain-TI-TI1a-3
'I get, have it'

A few TA verbs have a final suffix /-w/ following a root-final long vowel. Two of these stems form corresponding TI stems ending in /-m/, as in (2.34a-b) below. The third,

however, forms no TI (2.34c). For (2.34a-b), the final /-n/ of the TI stems could be analysed as the TI theme sign /-am/ or /-əm/ (see §2.3 for further discussion).

(2.34)

- (a) *kəneewaaw*
 /kə-nee-w-aa-w/
 2-see-TA-3-sg
 'you see him'
- kəneemən*
 /kə-nee-m-ən/
 2-see-TI-3
 'you see it'
- (b) *kəməlaawaaw*
 /kə-məlaa-w-aa-w/
 2-smell-TA-3-sg
 'you smell him'
- kəməlaamən*
 /kə-məlaa-m-ən/
 2-smell-TI-3
 'you smell it'
- (c) *kəwiičeeewaaw*
 /kə-wiičee-w-aa-w/
 2-accompany-TA-3-sg
 'you accompany him'

The major groups of TA finals and the corresponding TI forms are summarized in (2.35) below. Prefinals are separated from finals by hyphens.

(2.35)

<u>TA</u>	<u>TI</u>	<u>Meaning</u>
/-w/	/-ø/	
/-ah-w/	/-ah-/	'by tool'
/-əš-w/	/-əš-/	'by cutting edge'
/-əs-w/	/-əs-/	'by heat'

/-aw/	/ø/	
/-əl-aw/-	/əl-/	'by forceful contact'
/-əsət-aw/	/-əsət-/	'by hearing'
/-iin-aw/	/-iin-/	'by sight'
/-hk-aw/	/-hk-/	'by foot/body'
/-sk-aw/	/-sk-/	'by foot/body' ²¹
/-ht-aw/	/-ht-/	'by hearing'

/-l/	/-t/	'cause' (?)
/-oox-al/	/-oox-at/	'bring'
/-hl-al/	/-hl-at/	'motion'
/-iin-al/	---	'to death'
/-ool/	/-oot/	
/-aal/	/-aat/	
/-kw-aal/	/-kw-/	'sew'
/-əm/ ₁	/-ən-t/	'act in relation to'
/-əm/ ₂	/-ən-t/	
/-eel-əm/	/-eel-ən-t/	'by thought'
/-aankoo-m/	---	'be related to'
/-(ii)m/	/-(ii)n-t/	'by speech'
/-aam/	---	'by speech'
/-aapam/	/-aapan-t/	'see'
/-am/	/-an-t/	'by mouth'
/-oom/	/-oon-t/	'on the back'
/-x-əm/	/-x-t/	'(cause to) lie/be'
/-h/	/-h-t/	'cause'

Other patterns:

/-ən/	/-ən/	'by hand'
/-h/	/-h-/	'cause'
/-ənah/	---	'do by hand'

2.2 Argument Structure

2.2.0 Verb Inflection

Since details concerning verbal inflection are discussed in several places in §§2.2 and 2.3, I will present a review of information about clause types in Delaware and how they are marked morphologically, expanding upon information presented in §1.3.1. I will

²¹ The final /-sk-aw/ and the corresponding TI form occur in one set of stems only. Historically /-sk/ is a phonologically conditioned variant of the immediately preceding pair.

also summarize information about the subordinative mode, as well as the Objective-Absolute contrast in verbs.

The inflectional affixes are organized into paradigms. Combinations of affixes index information concerning gender, person and number of the arguments of a verb. Verbs are marked inflectionally by combinations of prefixes and suffixes which occur in different clause types. Three major clause types, referred to as orders, may be distinguished. Verbs inflected in the independent order take prefixes and suffixes, and form main clauses. Verbs inflected in the conjunct order take suffixes, and form embedded clauses of various types. The imperative order, which is marked by suffixes, forms commands. The three verb orders are further divided into subtypes called modes; see Goddard (1979a: Ch. III) for further details. Only basic relevant data concerning inflection are summarized here; the inflectional paradigms are discussed and exemplified in detail in Goddard (1979a: Chs. V, VI).

TA stems are inflected in four separate subparadigms. Each subparadigm is defined by a theme sign, which directly follows the stem (and in some cases is absent); person and number agreement suffixes, if present, follow the theme sign. The theme signs, and their conventional designations, are: /-aa/ ('direct' (2.36a)); /-əkw/ ('inverse' (2.36b)); /-ii/ ('you-me' (2.36c)); /-əl/ ('me-you' (2.36d)). I give one example of each, in the independent order.²²

(2.36)

(a) Direct

kəneewaaw
/kə-neew-aa-w/
2-see-3-sg
'you see him'

(b) Inverse

kəneewəkw
/kə-neew-əkw/
2-see-inv

²² TA and AI verbs may also be inflected for an indefinite subject; see Goddard (1979a: Chs. V, VI).

'he sees you'

(c) You-Me

kəneewi
/kə-neew-ii/
2-see-2/1
'you see me'

(d) Me-You

kəneewəl
/kə-neew-əl/
2-see-1/2
'I see you'

AI verbs are inflected in the independent order with the combinations of prefixes and suffixes in (2.37).²³ As will be discussed shortly, these affixes also occur on TA and TI verb stems in what is referred to as the Absolute construction.

(2.37)

/nə-/ - /-m/	1 ²⁴
/kə-/ - /-m/	2
/-w/	3
/kə-/ - /-hna/	1p (inc) ²⁵
/nə-/ - /-hna/	1p (exc)
/kə-/ - /-hmwa/	2p
/-w-ak/	3p

II verbs are inflected in the independent order with the suffixes in (2.38).

(2.38)

/-w/	3
/-w-al/	3p

²³ Some of the suffixes in (2.36) and (2.38) may be assigned further structure, which is ignored here; see Goddard (1979a: Ch. V).

²⁴ The suffix /-m/ in the first and second person singular occurs optionally after vowel-final stems.

²⁵ A distinction is made between first person plural inclusive, in which the addressee is included; and first person plural exclusive, in which the addressee is excluded.

TI stems are inflected in the Objective form of the independent order using the prefix and suffix combinations listed in (2.39) (the distinction between the Objective and Absolute constructions is discussed below). These affixes are also used in the inflection of AI+O and TA+O stems, as well as the subordinative mode of the independent order (to be discussed below).²⁶

(2.39)²⁷

/nə-/	/-n/	1-3
/kə-/	/-n/	2-3
/wə-/	/-n/	3-3
/kə-/	/-neen/	1p (inc)-3(p)
/nə-/	/-neen/	2l (exc)-3(p)
/kə-/	/-neewa/	2p-3(p)
/wə-/	/-neewa/	3(p)-3(p)

In the conjunct order TA verbs take inflectional suffixes in patterns which are unique to TA stems. For example, the 'direct' forms of TA verb stems (2.40) use the following suffixes:

(2.40)

/-ak/	1-3
/-at/	2-3
/-aat/	3-3 (obv)
/-eenkw/	1p (exc/inc)
/-eekw/	2p
/-aa-htit/	3p-3 (obv)

²⁶ Goddard (1983) presents a detailed discussion of these sets of affixes, and their distribution.

²⁷ Goddard (1979a: Ch. III) assumes that the suffix /-n(ee)/, in conjunction with the personal prefixes, indexes the subject ('central participant' in his analysis), although the general tendency is to analyse cognate morphemes in other languages as indexing the object. Remarks on these affixes may be found at the end of §2.3.3.

AI, AI+O, and TI verbs are inflected in the conjunct order with the set of suffixes in (2.41).

(2.41)

/-aan/	1
/-an/	2
/-ʉ/, /-k/	3 ²⁸
/-eenkw/	1p (exc/inc)
/-eekw/	2p
/-oohtii/	3p

Delaware verbs are inflected in a paradigmatic subtype which is called the subordinative mode of the independent order.²⁹ Verbs inflected in the subordinative mode are used as main verbs to form polite commands; more commonly, they form complements to certain verbs and to certain predicative particles (Goddard (1979a: 48-49; 1983)). The subordinative mode is conventionally assigned to the independent order, since it uses combinations of prefixes and suffixes.³⁰

The subordinative mode is marked inflectionally by the same combinations of affixes which are used to form TI, TA+O, and AI+O verbs in the independent order, given in (2.39) above. Verbs from all four verb classes may be inflected in the subordinative mode.³¹ For example, in (2.42a) the AI stem /aləmāsii-/ 'go away' appears in the subordinative, after the particle nal 'then'. TA stems in the subordinative add the inflections to the

²⁸ The ending /-ʉ/ is used after vowel-final stems; /-k/ is used after consonant-final stems.

²⁹ The subordinative mode is confined to the Eastern Algonquian languages. Proulx (1980) claims that it may be reconstructed for Proto-Algonquian; Goddard (1983) argues that it is an Eastern Algonquian innovation.

³⁰ For most Algonquian languages, it is traditionally considered criterial that conjunct order verbs are inflected with suffixes only, while independent order verbs are inflected with suffixes and prefixes. This is not relevant here.

³¹ II verbs are marked in the subordinative mode with an affix from another paradigm (Goddard (1979a: 114)).

theme sign; although obviation is not marked, number of subject and object is. In (2.42b) the TA stem /nəkəl-/ 'abandon someone' occurs after the particle nal 'then'.

(2.42)

- (a) nal ntələməsiin
 /nal nə-t-ələməsii-n/
 then 1-Ep-go away-sub
 'then I went away'
- (b) nal kənəkalaan
 /nal kənəkəl-aa-n/
 then 2-abandon someone-3-sub
 'then you abandoned him'

When used in the subordinate mode, AI verbs are not being marked for an extra argument, that is, an object. For example, (2.42a) is not interpreted as a two place predicate. That is, (2.42a) means 'I went away', not 'I went away from it', or the like. Hence it appears that, at least when used in the subordinative mode, endings of the set in (2.38) do not mark a third person argument. Precisely what grammatical information /-n/ does carry is unclear. Goddard (1983) takes the position that the suffix /-n/ refers to the same argument as does the personal prefix which occurs on the verb stem. Since, as will be discussed in §2.3.3, there are other constructions where the endings in (2.39) may be analysed as marking a third person argument, it is proposed that there are two homophonous affixes which have the form /-n/.

Delaware Transitive Animate and Transitive Inanimate verb stems may occur in two independent order constructions referred to as the Objective and the Absolute (Goddard (1979a: Ch. III)).³² In the Objective, the appropriate transitive inflectional markers are chosen, as given above, depending upon stem type; the direct object is definite, and may optionally be represented by an overt nominal phrase or not (2.43). In the Absolute construc-

³² The Objective-Absolute contrast only occurs in the Eastern Algonquian languages, although it may be reconstructed for Proto-Algonquian (Goddard (1967)).

tion, the verb is inflected as an intransitive, with the endings in (2.37), which occur on AI verbs in the independent indicative; the direct object must be indexed by an overt noun phrase, and is interpreted as indefinite.

(2.43)

(a) Transitive Animate Stem

Objective

nəməhaawəna
/nə-mwəhw-aa-w-əna/
1-eat-3-sg-pl
'we eat him, them'

Absolute

nəməhahna	ohpənək
/nə-mwəhw-ahna	ohpən-ək/
1-eat-pl	potato-pl
'we eat some potatoes'	

(b) Transitive Inanimate Stem

Objective

naatəmənēen
/nə-naat-əm-ənēe-n/
1-go after something-TI1b-3-3
'we go after it'

Absolute

naatəmohna	mpəy
/nə-naat-əm-ohna	nəpəy/
1-go after-TI1b-pl	water
'we go after some water'	

Although I will not attempt to present an analysis of the syntax of the Objective-Absolute constructions, the Absolute construction resembles the antipassive construction found in languages such as Eskimo (see Klokeid and Arima (1977) for a summary of basic data concerning antipassives in Eskimo).

2.2.1 Argument Structure of Verb Stems

Prefatory to the following sections I will outline the approach to argument structure which I will be taking. The argument structure of an argument taking lexical item is a specification of the thematic roles which it assigns (Williams (1981a)). The thematic roles include Actor, Theme, Goal, and others. I will employ the types of argument structure representations proposed by Hale (1983) and somewhat modified for the Algonquian language Ojibwa by Grafstein (1984). Morphemes which are lexically specified as bearing thematic roles form stems which assign their thematic roles to NPs. In Delaware the thematic role assigning morphemes are the verb finals and the monomorphemic verb stems.³³ A stem may have up to three arguments. The subject of a verb stem may be referred to as the x-argument; the object of a transitive verb may be referred to as the y-argument.³⁴ The argument structure of verb stems specified for three arguments will be discussed in §2.2.3. Each argument is lexically specified as being linked to a particular thematic role. As well, I will show that many arguments are specified for gender. The relationship between thematic roles and the NPs to which they are assigned is determined in accordance with the Theta-Criterion: thematic roles are uniquely assigned to NPs and vice-versa (Chomsky (1981)). The relationship between stems which assign thematic roles and the overt nominal phrases to which thematic roles are assigned will be mediated by the type of mechanism which Hale (1983) refers to as 'Evaluation', which has the effect of matching argument structure with noun phrases.

Another principle which determines the wellformedness of representations is the Projection Principle (Chomsky (1981)). Informally, the Projection Principle states that the

³³ Thematic role assignment in nouns is ignored here. See Williams (1981a).

³⁴ In the approach taken by Hale, 'x' and 'y' in argument structure representations correspond to variables in the semantic representations of lexical entries.

properties of lexical representations are preserved at all levels of a derivation. The relevance of the Projection Principle to morphological representations is a matter of some debate. Roeper (1987) assumes that some morphological representations may be subject to the Projection Principle, but others, involving rules not represented by an overt affix, may not be. In Chapter III I will discuss several suffixes which do not appear to be subject to the Projection Principle, even though they are overt affixes.

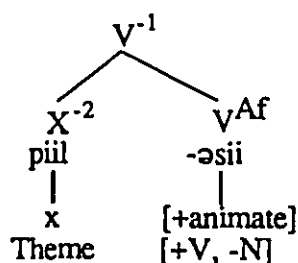
In his discussion of Ojibwa, Piggott (1989: 10-11) proposes an approach which differs in a few details. Most significantly, it is assumed that the lexical entries of acategorical roots (§1.6) have associated with the root a 'Theme' or 'Agent' thematic relation linked to the 'x' or subject argument (Piggott (1989: 11)). The root /piil-/ 'clean' might have the following partial lexical entry.

(2.44)

[/piil-/ 'clean']
[x- Theme]

The lexical entry for a verb-forming suffix such as the Animate Intransitive stative final /-sii/ (§2.4.2.1) would have no argument structure associated with it, although it would be specified for grammatical category and gender. The derived argument structure of the AI stem /piil-əsii/ 'be clean' formed by the concatenation of these two morphemes could be accounted for straightforwardly.

(2.45)



The properties of the verb stem may be accounted for by assuming the percolation conventions outlined in §1.5.1. Since the V^{-1} and VA^f nodes share the syntactic features $[+V, -N]$, the status of $/-əsii/$ as head of the verb is determined. The diacritic feature $[+animate]$ also percolates from the head. Since the head morpheme does not assign a thematic role, the 'Theme' role associated with the root is free to percolate to the V^{-1} node in accordance with the Percolation conventions.

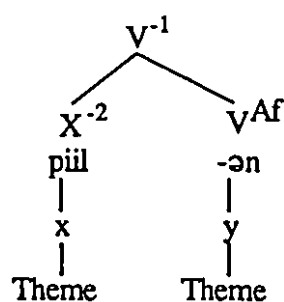
For Transitive Animate finals, Piggott (1989: 13-14) proposes that their properties may be accounted for by assuming that the lexical entry for a TA final includes the specification that a y-argument (i.e. object) specified $[+animate]$ is linked to a Theme. For example, the TA final $/-ən/$ 'by hand' might have a partial lexical entry as in (2.46).

(2.46)

$/-ən/$ 'by hand'
y- $[+animate]$ -Theme

Consider now a possible account of the formation of a Transitive Animate stem $/piil-ən/$ 'clean someone by hand'.

(2.47)



As it stands the representation (2.47) will not adequately account for the argument structure of the stem simply by assuming Percolation and the application of no other principle. The subject (x-argument) is not a Theme but rather an Agent. Presumably an adjustment convention of some kind would be required to convert an x-theme to an x-agent when a y-theme is present in the representation.³⁵ However, it seems reasonable to assume that these types of conventions should be ruled out, in order to avoid arbitrary switching of thematic roles during the course of a derivation. If the Projection Principle is relevant to morphological representations, then this derivation would be ruled out by the Projection Principle.

Notwithstanding the status of the Projection Principle, the need for adjustment conventions may be eliminated by modifying the analysis slightly, so that it accords with the assumptions made in this section. The difficulty arises because of the decision to associate thematic role assigning capacity with roots, and in particular with acategorical roots (§1.7). As a result, only one thematic role is associated with transitive finals, and no thematic role with intransitive finals.

The acategorical roots such as /niisk-/ 'dirty', /wəl-/ 'good', and others, are morphemes which have a meaning but have no morphosyntactic properties of any sort. They form stems which have the morphosyntactic characteristics of the morphemes which they combine with. There is no evidence that these roots contribute anything more than phonological substance and semantic information to the stems which they form. This suggests that the lexical entries for these roots should contain no specification for argument structure. The intransitive finals will contain specifications for argument structure, since they form predicates. For instance, the stative AI final /-əsii/ (§2.4.2.1) assigns a Theme role.

³⁵ Piggott (1989: 13-14) assumes that a somewhat analogous convention is operative in the formation of ditransitive stems, converting certain theme arguments into goal arguments; see §2.2.3 for discussion of an alternative interpretation.

(2.48)

/-əsii/

x- [+animate] - Theme

In the same vein, transitive finals usually assign two arguments, an Agent and a Theme.

The final /-ən/ 'by hand' would have the structure in (2.49).

(2.49)

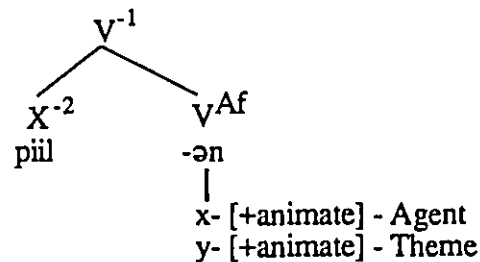
/-ən/ 'by hand'

x- [+animate] - Agent

y- [+animate] - Theme

Therefore the representation of the TA stem /piil-ən/ 'clean someone by hand' would be as in (2.50).

(2.50)



The argument structure of the final would percolate to the V^{-1} node. There would be no need to appeal to 'adjustment' conventions since the Agent thematic role of the x-argument is represented directly.

Nonetheless, there are certain roots which must be lexically specified as containing a listing for argument structure. Evidence suggesting that this position is correct comes from the fact that some AI finals which normally form AI stems occur in verb stems which are inflected as transitive (AI+O, §2.2.2) stems when they combine with certain roots. Among these roots are /naxp-/ 'in addition', which usually adds an argument to whatever final it combines with.

(2.51)

kənaxpooxween
 /kə-naxp-ooxee-n/
 2-in addition-walk-3
 'you bring him, it along as well'

I will say that /naxp-/ is lexically specified for a 'y-theme' argument. Concatenating /naxp-/ and the AI final /-ooxwee/ 'walk', which normally forms AI verbs, means 'bring someone, something in addition'. The final /-ooxwee/ only forms two place predicates when it combines with roots such as /naxp-/.

In §2.2.3 I will discuss certain verb roots which form ditransitive (TA+O) stems. These roots will be analysed as being specified for argument structure.

The position taken here is that in the typical case it is the verb finals that determine argument structure. By appropriately characterizing the argument structure of the different types of finals it will be shown in the following sections how the analysis of the verb classes may be unified.

2.2.2 Animate Intransitive Plus Object Verbs

Animate Intransitive verb stems are formed in primary derivation by adding AI verb finals to roots, or by adding prefinals and AI verb finals to roots, and in secondary derivation by adding finals to noun and verb stems. The processes by which AI stems are formed will be discussed in detail in §2.4, and in Ch. III. Some verb stems have the structural characteristics of AI stems but may be inflected for a third person object; these will be referred to as the AI+O stems. Unlike the TI verbs, the object of an AI+O verb may be animate or inanimate. I analyse these as AI verb stems which are transitive in certain cases. Since the analysis of these verbs is relevant to the discussion of the derivation of Transitive Inanimate stems in §2.3 I will outline their characteristics here.

It is necessary to lexically specify which AI finals are used in the formation of AI+O stems, since only some AI finals form stems which also function as AI+O stems. Whether a given AI suffix forms an AI+O stem depends upon the argument structure for which the final is specified. There are many idiosyncracies in the formation of AI+O stems, which cannot be reviewed in detail here. Some AI finals only occur in a small number of AI+O stems, while others productively occur in many AI+O stems. An AI stem which occurs in an intransitive construction is inflected with the affixes given in (2.37) above. If it also occurs as an AI+O stem, the same stem is inflected with the affixes given in (2.39) above.

Many AI stems may occur in both intransitive and transitive constructions. That is, many AI stems are optionally transitive. Goddard (1979a: Ch. III) states that some AI+O stems never occur as intransitives. For example, the numerous stems formed with the AI final /-aahee/ 'throw' are nearly always inflected as AI+O verbs, as in (2.52a), and many other examples. However, the idiomatic (2.52b) is intransitive, as is (2.52c). As a result, although some stems were only recorded as transitive, as in (2.53b) below, it is difficult to find any AI finals which only form AI+O stems.

(2.52)

- (a) nkawaaheen
/nə-kaw-aahee-n/
1-prostrate-throw-3
'I throw him, it down'
- (b) maxkaaheew
/maxk-aahee-w/
red-throw-3
'he tells a fib'
- (c) mənantaheew
/mənant-aahee-w/
lefthanded-throw-3
'he throws lefthanded'

The verbs in (2.53a) may be inflected either as transitive or intransitive stems. The stems in (2.53b) were only recorded in transitive constructions.

(2.53)

(a) Optionally Transitive

nəməneen

/nə-mənee-n/

1-drink-3

'I drink it'

nəwan'siin

/nə-wanəsii-n/

1-forget-3

'I forget him, it'

nteešiin

/nə-t-eešiin-n/

1-Ep-pass through-3

'I go/pass through him, it'

mpaalpeen

/nə-paal-əpee-n/

1-over/beyond-water-3

'I overfill him, it'

noočəwaapəween

/nə-wəčəw-aapəw-ee-n/

1-full-liquid-AI-3

'I fill him, it with liquid'

nsiin

/nə-sii-n/

1-say-3

'I say it'

(b) Obligatorily Transitive

laapiinaxkeen

/nə-laapiinaxkee-n/

1-have hands interlocking-3

'I lead him by the hand'

ntahpalihkeen

/nə-t-ahp-alihkee-n/

1-Ep-upon-take a step-3

'I step on him, it'

laapapiin

/nə-laap-apii-n/
 1-again-be there-3
 'I take his place'

ntaweeheen
 /nə-t-aweehe-n/
 1-Ep-use-3
 'I use him, it'

Even intransitive verbs formed in secondary derivation from transitive stems may be used as AI+O stems. The examples in (2.54) are AI stems formed on transitive stems, by the processes to be discussed in Ch. III; they are inflected as AI+O stems.

(2.54)

ntəloohəmaasiin
 /nə-t-əlooh-am-aw-əsii-n/
 1-Ep-show-TI1a-TA+O-AI-3
 'I show him, it'

mpənoontihkeen
 /nə-pənoontəl-kee-n/
 1-display-AI-3
 'I display/show someone, something of importance; display/show my feelings'

nəməhlamaakeen
 /nə-mahl-am-aw-kee-n/
 1-buy-TI1b-TA+O-AI-3
 'I sell him, it'

ntaləweelənsiin
 /nə-t-aləw-eləm-sii-n/
 1-Ep-more-by thought-AI-3
 'I think myself better than him'

nooliixtaakeen
 /nə-wəl-ii-x-t-aw-kee-n/
 1-good-Ep-lay/be-TI-TA+O-AI-3
 'I get him, it fixed'

The properties of AI+O stems may be derived from their argument structure, as well as the Argument Identification Condition, a condition on the interpretation of lexical representations proposed by Piggott (1989). This condition will be discussed below.

AI stems which are always intransitive are formed with finals which are specified for one argument. AI stems which are transitive are formed with finals which are specified for two arguments. The second argument may be animate or inanimate; this may be represented by stating that the second argument is unspecified for gender. I will give a possible lexical entry for the AI final /-ii/, which forms AI stems (§2.4.2.2). This final forms a stem which also functions as an AI+O stem, that is, it assigns the thematic role of its y-argument optionally. The x-argument of /-ii/ in (2.55a) is an agent; in the transitive construction in (2.55b) the x-argument bears the same thematic relation; the y-argument may be considered a Goal or Location.

(2.55)

- (a) *eešiiw*
 /*eeš-ii-w*/
 through-AI-3
 ‘he goes through’
- (b) *nteešiin*
 /*nə-t-eeš-ii-n*/
 1-Ep-through-AI-3
 ‘I go through him, it’

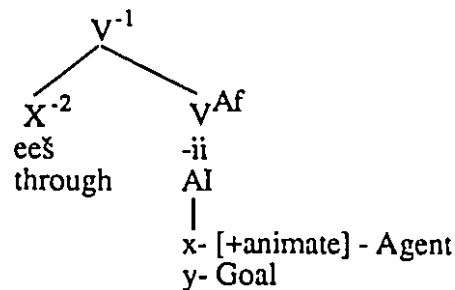
The final /-ii/ which occurs in stems such as those in (2.55) would have a partial lexical entry as in (2.56). In (2.56), optionality of an argument is shown by placing it in parentheses.

(2.56)

/-ii/ ‘process’
 x- [+animate] -Agent
 (y- Goal)

A representation of the AI+O stem in (2.55a) would be as in (2.57).

(2.57)



The Percolation Convention (§1.5.1) would allow the argument structure of the affix to percolate to the level of the verb stem.

Stems such as /kawaahee-/ 'throw someone, something down' (2.56a) contain the final /-aahee/, which is obligatorily transitive.

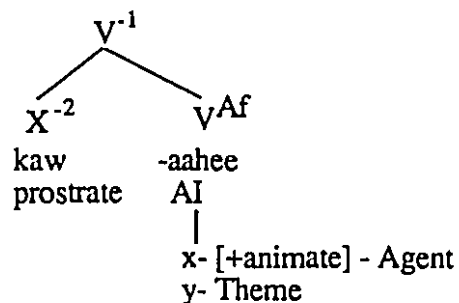
(2.58)

/-aahee/ 'throw someone, something'

x- [+animate] - Agent
y- Theme

A representation of the AI+O stem /kawaahee-/ would be as in (2.59).

(2.59)



Piggott (1989: 23) has proposed that arguments of verbs are subject to an Argument Identification Condition, according to which only arguments which are specified for gender

([+animate]) or person are identified. Identified arguments must assign their thematic roles to NPs; unidentified arguments assign their thematic roles optionally. Argument Identification accounts for the fact that some finals, which contain unidentified y-arguments, form optionally transitive verb stems. The role of Argument Identification will be discussed further in §2.3.3.

2.2.3 Ditransitive Stems

Some transitive stems may be inflected for a second object; these ditransitive stems are referred to as Transitive Animate Plus Object (TA+O) stems (Goddard (1979a: Ch. III)). Ditransitive stems are marked inflectionally in the independent order with the same endings as occur on the AI+O stems discussed in §2.3.1. Examples of ditransitive stems are given in (2.60) below. In a ditransitive stem, what I will refer to as the notional indirect object is always animate, while the notional direct object may be either animate or inanimate.

The notional indirect object always behaves morphosyntactically as a direct object, in that inflectional marking of the notional indirect object follows the same patterns of agreement as the direct object of a simple Transitive Animate stem. There is never inflectional agreement with the notional direct object of a TA+O stem.³⁶ That is, if object agreement is with y-arguments, then the notional indirect object of a ditransitive verb stem behaves morphosyntactically as a y-argument, while the notional direct object is a third argument, which may be referred to as a z-argument (see also Grafstein (1984) and Piggott (1989)). The Algonquian languages are not unusual in this regard, as this is a widely occurring cross-linguistic pattern (Marantz (1984)).

The pattern of agreement has led some to assume that there is an obligatory rule of 'Dative Movement' which converts indirect objects into direct objects (Rhodes (1976)).

³⁶ Marking of the objects of TA+O verbs for number is more complex than these remarks imply. See Russell (1987) for some comments from a general Algonquian perspective, and Goddard (1983) for details on Delaware.

Since there is no syntactic evidence which would support a claim that notional indirect objects are indirect objects, other analyses have been proposed which treat the direct object of simple TA stems and the notional indirect objects of TA+O stems as having the same syntactic status (Dryer (1986), Russell (1987), Goddard (1979a)). For example, Dryer (1986), assuming a Relational Grammar framework, proposes that a theoretical distinction be made between 'Primary Objects' (notional indirect objects and direct objects of monotransitive clauses) and 'Secondary Objects' (notional direct objects in ditransitive clauses). Goddard (1979a: Ch. III) and Russell (1987) propose a similar distinction.

In general, any TA stem which has a corresponding Class 1 or Class 2 TI stem may form a TA+O stem. Transitive Animate verbs with corresponding TI Class 1a stems form TA+O verbs by adding /-aw/ to the TI stem and theme sign /-am/ (2.60a); TA verbs with corresponding TI Class 1b stems form TA+O verbs by adding /-aw/ to the TI stem and theme sign /-əm/ (2.60b); Transitive Animate verbs with corresponding TI Class 2 stems form TA+O verbs by adding /-aw/ directly to the TI stem (2.60c). I do not have information on the formation of TA+O stems for verbs which have TI Class 3 stems. Two TA+O stems which are not formed with /-aw/ will be discussed separately below. TA+O stems are followed by the TA theme signs, as exemplified in (2.36) above, and the appropriate inflectional affixes. All of the examples in (2.60) contain the TA direct theme sign /-aa/ and the inflectional suffix /-n/, from the paradigm in (2.39).

(2.60)

(a) TI Class 1a

ntakiintamawaan
 /nə-t-akiin-t-am-aw-aa-n/
 1-Ep-read-TI-TI1a-TA+O-3-3
 'I read someone, something to him'

(b) TI Class 1b

nkəʔənəməwaaan
 /nə-kəʔən-əmə-aw-aa-n/
 1-take out-TI1b-TA+O-3-3
 'I take someone, something off for him'

(c) TI Class 2

noolihtawaan
 /nə-wəliih-t-aw-aa-n/
 1-make someone-TI-TA+O-3-3
 'I make someone, something for him'

In ditransitive stems of the type in (2.60) the notional indirect object typically receives either a Goal (2.64a) or Benefactive (2.60b-c) interpretation. Some stems appear to allow both interpretations; I will assume that there is only one thematic relation involved which subsumes a range of interpretations. The recurrence of /-aw/ in TA+O stems suggests that it assigns a thematic relation to the notional indirect object. I propose that /-aw/ adds a Goal argument to a verb stem specified for an Agent and a Theme. I also assume that /-aw/ in ditransitives is not the same affix as is found in the regular TA stems discussed in §2.1.2 in verbs such as /moxk-aw/ 'find someone'. Unlike the affix /-aw/ found in TA+O stems, the final /-aw/ in verbs such as /moxk-aw/ 'find someone' does not assign a thematic relation distinct from the Theme relation assigned by other TA finals such as /-ən/ 'by hand'. That is, the final /-aw/ found in ordinary Transitive Animate verbs such as /moxk-aw/ 'find someone' would assign two thematic rules (x-Agent, y-Theme), while the final /-aw/ in TA+O stems would only assign a Goal argument.

Piggott (1989: 13-14) proposes a slightly different analysis of similar Ojibwa data, in which the lexical entry of Ojibwa /-aw/ has a y-argument linked with a Theme. Since /-aw/ is added to a TI stem which is already specified for a y-Theme argument, this will result in representations in which two arguments linked with Themes are present. Piggott (1989: 13-14) proposes that there is a convention which would convert a y-Theme argument associated with /-aw/ into a y-Goal argument (and the other y-Theme into a z-Theme).

If the Projection Principle is applicable to morphological representations, this convention would result in a violation of the Projection Principle (Chomsky (1981)), since information about thematic relations is not being maintained throughout a derivation.

Assuming that /-aw/ assigns a Goal argument derives the right results straightforwardly. For example, a TA+O stem such as /kətən-əm-aw/ 'take someone, something off for someone' is based upon the TA stem /kətən-/, which is formed with the TA final /-ən/ 'by hand'. This final has the argument structure in (2.61).

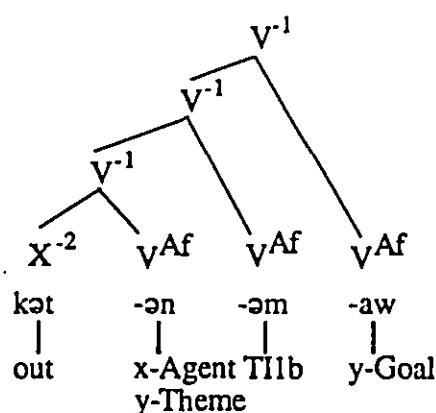
(2.61)

/-ən/
'by hand'

x- [+animate] - Agent
y- [+animate] - Theme

Adding the theme sign /-əm/ and the final /-aw/, which is specified for a Goal argument, would result in the following representation.

(2.62)



Since, as noted above, the Goal argument behaves like a direct object with respect to agreement processes, we need only assume that the presence of a y-argument specified as a Goal has an effect on the status of the y-Theme argument. To achieve this effect, the convention proposed by Piggott (1989: 13-14)) will be slightly restated to account for the ar-

gument structure of ditransitive stems, emending it as follows: “A y-theme becomes a z-theme in the environment of a y-goal”. In effect, this is a lexical rule of Dative Shift, since the presence of a y-argument linked with a Goal relation has an effect on the status of an existing y-argument (see also Poser (1982/1983)).

Two TA+O verbs were recorded which do not overtly mark a second object by adding the final /-aw/ to TI stems according to the pattern above. These are /miil-/ ‘give someone, something to someone’ (2.63), and /kəmootəm-/ ‘steal someone, something from someone’ (2.68a). These TA+O verbs are formed by adding a final to a root. These are the only TA+O stems recorded which are formed in this manner.

(2.63)

nəmiilaan
/nə-mii-l-aa-n/
1-give to-TA-3-n
‘I give someone, something to him’

The stem /miil-/ may be analysed as containing the TA final /-l/ (§2.1.3), although since the root /mii-/ is a hapax legomenon, it is difficult to determine its properties. The TA+O stem /kəmoot-əm-/ ‘steal someone, something from someone’, contains the root /kəmoot-/ ‘steal from’. This root also occurs in the AI and AI+O verb stem /kəmoot-kee-/ ‘steal (someone, something)’ (2.64b, c).

(2.64)

(a) Transitive Animate Plus Object

nkəmootəmaan
/nə-kəmoot-əm-aa-n/
1-steal-TA-3-3
‘I steal someone, something from him’

(b) Animate Intransitive Plus Object

nkəmootkeen
/nə-kəmoot-kee-n/

1-steal-AI-3
'I steal him, it'

(c) Animate Intransitive

nkəmootke
/nə-kəmoot-kee/
1-steal-AI
'I steal'

The root /kəmoot-/ 'steal' can be specified for two arguments: an x-Agent and a y-Goal. The final /-əm/ is also found in primary derivation of TA stems (§2.1.4), and also in certain Transitive Animate stems derived from AI stems (§2.1.4). If /-əm/ is specified for a single y-Theme argument, the argument structure of /kəmoot-əm/ 'steal from' would be derivable, given the assumption that the y-Theme is demoted to a z-Theme in this type of representation, in accordance with my earlier analysis of the derivation of other TA+O stems. That is, the presence of a y-Goal argument causes the y-Theme to be demoted to a z-Theme. The AI+O stem /kəmoot-kee/ 'steal someone', contains the suffix /-kee/, which is added to transitive stems to produce a stem with a derived indefinite or unspecified object (the properties of /-kee/ will be discussed in §3.2.2.2). It could be assumed that /-kee/ is added to the root /kəmoot-/ because it contains two arguments. This was the only stem recorded where /-kee/ appears to be added to a root.

2.3 Transitive Inanimate Verb Stems

The structure of the sets of TI verb stems is discussed here. The basic relevant data have been outlined above in §2.1. Recall that the TI stems are divided into three classes: 1a, 1b, 2, and 3. Stems assigned to Classes 1a, 1b, and 2 are followed by affixes traditionally referred to as theme signs; inflectional suffixes follow the theme signs. Class 3 stems have no theme sign; inflectional suffixes directly follow the stem.

(2.65)

Class 1a

mpəntamən
/nə-pənt-am-ən/
1-hear-TI1a-3
'I hear it'

Class 1b

nkʷətənəmən
/nə-kʷət-ən-əm-ən/
1-try-by hand-TI1b-3
'I feel for it (by hand)'

Class 2

nkəʃiixtoon
/nə-kəʃiix-t-oo-n/
1-wash-TI-TI2-3
'I wash it'

kʃiixtawaane
/kəʃiix-t-aw-aan-ee/
wash-TI-TI2-1/3-subj
'if I wash it'

Class 3

mpəmtaačiintən
/nə-pəm-taačiin-t- n/
1-along-drag-TI-3
'I drag it along'

There are two main issues in studying the structure of the transitive verb classes. The first concerns the status of the morphemes traditionally referred to as the TI theme signs. The second concerns the nature of the derivational relationship which obtains between most Transitive Animate and Transitive Inanimate stems. These two issues are inter-related; they will be taken up in the following sections.

2.3.1 Transitive Inanimate Theme Signs

I will summarize some of the proposals which have been made to account for the structure of the TI stems. One of the points of contention in the analysis of the TI stems has

been the status of the TI theme signs, in particular whether these elements are part of the TI stem.

The TI theme signs have not been treated consistently in the Algonquianist literature. Bloomfield's (1958) analysis of the organization of the TI stems in Ojibwa has been criticized by Piggott (1979) and Rhodes (1976). Bloomfield (1958: 33-34) assumed that the Ojibwa TI Class 2 stems were not TI stems but were rather AI stems which could be inflected for an object, that is, what we previously referred to as Animate Intransitive plus Object (AI+O) stems (§1.3); see Piggott (1979) for discussion of Bloomfield's analysis. As well, Bloomfield did not distinguish the TI Class 3 stems as a separate group, possibly because there are so few TI Class 3 stems in Ojibwa (for example, Nichols (1980: 162-163) lists only two for Minnesota Ojibwa).³⁷

Bloomfield's motivation for treating the Class 2 TI stems as AI stems appears to have been that since there were some apparent AI verbs ending in a putative morpheme /-oo/, all verb stems ending in this element should be assigned to the same class. He ignores the fact that Class 2 TI stems always take the same inflectional endings as do the Class 1 and 3 TI stems. In his study of similar data in Menominee, Bloomfield (1962) modified his analysis and treated the Menominee equivalent of Delaware stems ending in /-oo/ ~ /-aw/ as regular TI stems. Since this question is not at issue, it will not be discussed any further.

We have already noted that Bloomfield (1958) assumed that in Ojibwa the TI Class 2 stems were basically intransitive stems. However, he proposed that the Ojibwa TI1 theme sign /-am/ marked the presence of an object. In his study of Menominee, Bloomfield (1962) took the position that there were three types of TI stems, but does not specifically state that the Menominee theme signs mark the presence of an object.³⁸ Similarly, Rhodes

³⁷ There are seven TI Class 3 stems in Delaware (Goddard (1979a: Ch. IV); they will be discussed in §2.3.3.

³⁸ Denny (1983) has argued that the TI theme signs also have discernable semantic properties. The TI Class 1a and 1b theme signs co-occur with 'subject-oriented' stems. Semantically the stem emphasizes how the subject is doing the action. The TI Class 2 stems are said to be 'patient-oriented' in that the stem emphasizes the effect of the agent's action upon the patient. He does not discuss TI Class 3 stems.

(1976) assumes that the theme signs are inflectional morphemes marking a third person object.

In this section I will follow the analysis proposed by Piggott (1979, 1989). Piggott has argued that the theme signs are part of the stem, and furthermore that they are AI finals which are used in the formation of TI verb stems. He proposes that the TI stems are derivative in the sense discussed earlier, and also that TI stems are AI stems, in that they contain morphemes which are identifiable as AI finals. This proposal is a subcomponent of a more general claim that in Algonquian languages the traditional classification of verb stems, which assumes that there are four main verb classes, is incorrect. Rather, verb stems may be divided into two distinct types: the TA stems, and all others: TI, AI, II, AI+Object, Objectless TI.

Since Piggott's proposal is the most comprehensive discussion of TI stem derivation in the Algonquian languages, I will review the main arguments which support this position in some detail, using Delaware data. The fundamental insight of Piggott's proposal is that some of the verb stems which are traditionally assigned to different verb classes on the basis of purely morphological criteria share properties in that they have the same specifications for argument structure. For example, AI+O verb stems are formed with finals lexically specified for a y-argument which is unspecified for gender. TI stems, which are derived from TA stems, also have a y-argument which is unspecified for gender, because of the processes of derivation which form TI stems. AI stems and TI stems therefore have comparable argument structure; this accounts for the distribution of inflectional affixes. Argument Identification, a condition on the representation of stems, discussed in §2.2.2, accounts for the variations in transitivity which are found in TI and AI+O stems.

The proposal that the theme signs are verb finals is motivated in part by the distribution of certain affixes (Piggott (1979: 163-164, 169, 175)). As discussed earlier, TI

verbs end in the morphemes /-am/, /-əm/, or /-oo/ ~ /-aw/.³⁹ These morphemes are traditionally referred to as the TI theme signs, as exemplified in (2.69) above. The theme signs are identical in form to elements found in the Objectless TI (OTI) verb stems. These are verb stems which have the morphological characteristics of what are conventionally referred to as TI stems, but which are inflected as AI verbs. Some of these stems are unequivocally and invariably Animate Intransitive (AI) verb stems; these may also be analysed as containing morphemes /-am/, /-əm/, or /-oo/ ~ /-aw/. The stems in (2.66) were only recorded in intransitive constructions.

(2.66)

(a) /-am/

pənaham
/pən-ah-am-w/
down-by tool-TI1a-3

'he earns money, a wage'

mehtham
/meht-ah-am-w/
to exhaustion-by tool-TI1a-3

'he strikes out (baseball)'

məlantam
/məl-am-t-am-w/
putrid matter-by mouth-TI-TI1a-3⁴⁰

'he vomits'

šantham
/šant-ah-am-w/
stretch-by tool-TI1a-3

'he kicks out, stretches his legs'

wšiiłəntam
/wšiiłən-t-am-w/
marry s.o.-TI-TI1a-3

'he gets married'⁴¹

³⁹ As well, in most varieties of Ojibwa, there are two Class 3 TI stems which may be analysed as containing a final /-i/: /naat-i/ 'fetch something', and /miič-i/ 'eat something'; in Piggou's analysis these stems are treated as containing an AI final /-i/.

⁴⁰ The gloss of the root is uncertain; this is presumably the same root which appears in *məłəy* 'pus'.

⁴¹ Cited in Goddard (1979a: 41), but not known to my informants.

niiskeelham
/niisk-eel-ah-am-w/
dirty-track-by tool-TI1a-3

'he makes dirty tracks'

peeteewtam
/peet-ee-w-t-am-w/
hither-cry-TI-TI1a-3

'he comes here crying'

(b) /-əm/

psəm
/pəsəm-w/
mote-TI1b-3

'he has something in his eye'

ačiipənəm
/čačiip-ən-əm-w/
frightful (redup)-by hand-TI1b-3

'he acts up, out of the ordinary'

amaašənəm
/mamaaš-ən-əm-w/
strange (redup)-by hand-TI1b-3

'he acts strangely'

(c) /-oo/ ~ /-aw/

wiinihtoow
/wiin-ii-h-t-oo-w/
anger-Ep-cause-TI-TI2-3

'he is annoying'

kšiilawehtoow
/kəš-iilawee-h-t-oo-w/
intense-physical sensation-cause-TI-TI2-3

'he shows off'

eewatoow
/ee-wat-oo-w/
haul-TI2-3

'he transports'

pasəkwiipahtoow
/pasək-w-ii-pah-t-oo-w/
arise from sitting-Ep-run-TI-TI2-3

'he gets up in a hurry from sitting'

Since the elements found at the ends of the TI stems and at the ends of the stems in (2.66) are not distinct, it is claimed that they represent the same set of morphemes. Because the stems in (2.66) are always intransitive stems, the morphemes which appear in stem-final position must be AI finals. Hence, /-am/, /-əm/, and /-oo/ ~ /-aw/ found in TI stems are AI finals.

There are also certain apparent TI stems which can be both transitive and intransitive.

(2.67)

niiskeeləntam
 /niisk-eelən-t-am-w/
 dirty-by thought-TI-TI1a-3
 'he is angry'

wəniiskeeləntamən
 /wə-niisk-eelən-t-am-ən/
 3-dirty-by thought-TI-TI1a-3
 'he is angry about it'

The appearance of what are considered to be the same sets of morphemes in both verb classes and the variable transitivity of certain stems which may be analysed as basically intransitive stems supports analysing the morphemes /-am/, /-əm/, /-oo/ ~ /-aw/ as AI finals (Piggott (1989: 7)).

Another type of evidence is used to show that TIs and AIs should be treated as a single stem type, to be distinguished from the TA stems. Some sets of inflectional affixes occur with particular verb classes and not with others. Specifically, as discussed in §2.2.0, in the conjunct order, TA stems take a particular set of suffixes, while other verb classes (TI, AI, AI+O, OTI) take another (Piggott (1979: 156-157, 165, 175)). Hence these four verb classes pattern together with respect to the set of inflectional affixes they take in the conjunct order.⁴² In addition, in the independent order, TI stems and AI+Object stems (§2.2.2) take the same sets of inflectional suffixes. This is also interpreted (Piggott (1989: 17)) as showing that TIs and AIs represent the same stem type, since the two types are linked morphologically.

2.3.2 The Derivation of TI Stems

The second issue in the formation of transitive stems concerns how the relationships between TA and TI stems should be analysed. It was observed in §2.1 that there are

⁴² Drapeau (1979: 318-322) notes that in Cree-Montagnais, the inflection of AI and TI verb stems is virtually identical not only in the conjunct order, but also in the independent order.

regular relationships between most TA verb stems and the corresponding TI verb stems. In many cases it is possible to 'derive' the TI stems from the corresponding TA stems (Goddard (1979a: 75); Piggott (1979, 1989)). The basic data are summarized here. What were described as Group (1) and Group (2) TA stems, that is, those that end in the final suffixes /-w/ and /-aw/ respectively, form TI stems by dropping the final and adding the appropriate TI theme sign, usually TI1a /-am/ or TI1b /-əm/. Group (3) stems are formed with the final /-l/; they form TI stems by dropping the final, and adding /-t/, and the appropriate TI theme sign, usually TI2 /-oo/ ~ /-aw/. Group (4) TA stems, those that end in /-m/ or /-h/, add /-t/ to the TI stem, followed by the TI theme sign, usually TI1a /-am/. In sum, the two major derivational patterns involve (a) truncation of the TA final and addition of the appropriate TI theme sign; and (b) addition of the suffix /-t/ to the TA stem and addition of the appropriate TI theme sign. As Piggott (1979) notes, while there are regularities, the derivation of TI stems is fundamentally a lexical matter in that TA finals will have to be marked for which type of derivation they undergo in order to form a TI stem.

We can rule out an analysis which would treat the /-t/ found in TI stems as a marker which indicates agreement with an inanimate object. Piggott (1979, 1989), using evidence from the behaviour of ditransitive (T/.+O) verbs, has shown that it is difficult to defend the position that this morpheme marks agreement with an inanimate object, since it also appears in transitive stems used in sentences where both objects are animate (§2.2.3).

I will now discuss Piggott's analysis of TI stem derivation. Piggott (1989: 23) proposes that arguments are subject to an Argument Identification Condition, discussed in §2.2.2. This condition states that only arguments which are specified for gender ([±animate]) or person are identified. Identified arguments must assign their thematic roles to an NP; unidentified arguments assign their thematic roles optionally.

I now review how the sets of data summarized at the beginning of this section are accounted for in Piggott's proposal. Taking first the case of the TI stems which are formed by adding /-t/, the relationship between the TA and TI stems is accounted for by postulating

that the suffix */-t/* has an effect on the diacritic feature [+animate] of the y-argument of TA stems (the grammatical object). Affixation of */-t/* causes the “removal of the specification [+animate] from the y-argument of a TA stem” (Piggott (1989: 18)). The y-argument is no longer identified, since it is no longer specified for gender, although argument structure has not itself been modified, in that it is assumed that there are still two arguments. Since the morpheme */-t/* lacks categorial features, it cannot be the head of the stem in which it appears. Piggott (1989: 18) proposes that suffixation of an AI final (one of those traditionally referred to as TI theme signs) is necessary because TA stems which have undergone suffixation of */-t/* are not possible stems, since the suffix */-t/* lacks categorial features and therefore cannot be a head. A wellformed stem will only result if an appropriate final is added. For example, a TI stem such as */niiskeeləntam/* ‘be angry about something’ could be derived from the TA stem */niiskeeləm-/* ‘be angry at someone’, as follows.

(2.68)

- (a) */niiskeeləm-/*
 x - Agent
 y - [+animate] - Theme
- (b) */niiskeelən-t-/*
 x - Agent
 y - Theme
- (c) */niiskeelən-t-am-/*
 x - [+animate] - Agent
 y - Theme

In (2.68), attachment of the morpheme */-t/* to the TA stem (2.68a) has the effect of deleting the gender feature of the y-argument (2.68b). Attachment of the morpheme */-am/* (2.68c) produces a well-formed stem, in effect by inserting the feature [+animate] on the x-argument.

In a similar vein, the TI stems corresponding to TA Group (1) and (2) stems are derived by a process of ‘zero-derivation’, in which the TA final */-w/* or */-aw/* is truncated.

This process also removes identification from the second argument. For example, the TA stem /moxk-aw/ 'find someone' forms a TI stem /moxk-am/ 'find something' by deleting /-aw/ and adding /-am/. A sample derivation would be as follows.

(2.69)

- | | | |
|-----|-----------|-------------------------------------|
| (a) | /moxk-aw/ | x - Agent
y - [+animate] - Theme |
| (b) | /moxk-/ | x - Agent
y - Theme |
| (c) | /moxk-am/ | x - [+animate] - Agent
y - Theme |

Following Piggott (1989: 18), the derivation of stems of the type exemplified in (2.69) may be accounted for by proposing that there is a process of zero-derivation which truncates the TA final, as in (2.69b), and also has the same morphosyntactic effect as affixation of /-t/, that is, deletion of the diacritic feature for gender.

The TI stems which are assigned to TI Class 3 do not take a theme sign. It seems arbitrary that the Class 3 TI stems do not occur with a theme sign. The apparent irregularity may be represented by analysing these stems as having a suppletive zero form of the theme sign /-am/. The suffix /-oo/ ~ /-aw/ has two variants, neither of which appears in Class 3 stems. Hence it seems more likely that this zero allomorph is based upon the TI1a theme sign /-am/, which is deleted in these stems only.

Piggott (1989: 18) states that a TA stem which has the suffix /-t/ attached is not wellformed, "since the suffix ...lacking categorial features cannot be a head. A proper stem may be derived by the addition of a final" (that is, a theme sign). While it may be true that the suffix /-t/ lacks categorial features and cannot be the head of a stem, this does not entail that a TA stem which has /-t/ added to it is lacking a head, if we assume Selkirk's definition of headedness (§1.5.1). For example, in a TA stem such as /niisk-eel-əm-/ 'think poorly of someone', /-əm/ is the head of the stem; it is the rightmost morpheme which contains a

specification for grammatical category. If, in a further stage of derivation, the suffix */-t/* is added (accepting the correctness of the assumption that */-t/* is lacking in categorial features), the status of */-əm/* as head of the stem is unchanged; it is still the suffix which determines the grammatical category of the stem. Headedness requirements do not account for the appearance of the theme signs.

One means of accommodating these data would be to modify the Percolation Convention which we are assuming (§1.5.1). However, the Percolation Convention as currently formulated appears to be essentially correct. First, the intuitive claim made by the Convention appears to be correct: the rightmost morpheme in the stem which contains specifications for grammatical category is the head. As well, this formulation makes correct predictions in other cases where suffixes lacking categorial specifications follow stems (see §6.2.1 for a discussion of noun diminutives).

Alternatively, it could be proposed that affixation of */-t/* deletes both the gender specification and categorial features of the *y*-argument. In this case, a suffix which would furnish categorial features would have to be added. If the claim that the TI theme signs are AI finals is accepted, then suffixation of one of these morphemes would derive a stem which is specified for category.

At this point it is appropriate to note the similarities between the argument structure of the AI+O stems and TI stems. The analysis of the TI and AI+O verb classes is unified by assuming, as discussed in §2.2.2, that the lexical entries for AI+O verbs include an unidentified *y*-argument (Piggott (1989: 19, 25)); that is, one unspecified for gender or person. Therefore, AI+O stems have the same argument structure as TI stems. The AI+O stems may be transitive or intransitive, since unidentified arguments assign their thematic relations optionally. The common argument structures of AI+O and TI stems supports the proposal, discussed earlier, that AI+O and TI stems are fundamentally the same.

Although a TI stem will have a *y*-argument which is not specified for gender, it may be assumed that TI stems only take inanimate objects due to an effect comparable to the

Blocking phenomena discussed by Aronoff (1976). That is, TI stems do not take animate objects because they are related to TA stems, which do take an animate object (Piggott (1989: 20)). Similarly, AI+O stems, which have y-arguments which are unspecified for gender, may take animate or inanimate objects, since they are not related to TA stems.

I now turn to a prediction made by this account of the derivation of TI stems. As discussed above, it is assumed that only 'identified' arguments obligatorily assign their thematic roles, an identified argument being one which is specified for gender or person (Piggott (1989: 16, 25)). Unidentified arguments need only assign thematic relations optionally. The derivation of TI verbs removes argument identification from the object of the verb. Therefore TI verbs should be capable of occurring in transitive or intransitive contexts. This is in part correct, since some TI stems may be used transitively or intransitively, for example, those in (2.66). However, as discussed above, and as Piggott (1989: 20) notes, there are also TI stems which are invariably transitive, and never occur as intransitives. Similarly, OTI stems are always intransitive. The existence of the class of invariably transitive TI stems suggests that invariably transitive TI stems do not have unidentified arguments.⁴³ Piggott (personal communication) has suggested that Argument Identification could be extended by assuming that the suffix /-n/ found in the paradigm exemplified in (2.43) specifies third person, and that identification by person marking be extended to include this case. In this way, TI stems to which this suffix is attached will assign their thematic role, since their y-argument is identified. A TI stem which is not marked with /-n/ will not have an identified y-argument, and will not assign its y-argument.

⁴³ Piggott (1989: 21) notes that in the Algonquin dialect of Ojibwa (northwestern Quebec) TI stems which appear to be inflected for a third person object are ambiguous between transitive and intransitive readings. That is, there is apparently no class of invariably transitive TI stems. I have no account of this; the properties of the inflectional suffixes in this dialect may be somewhat different, but further investigation is required. Similar data are found in the dialects of Ojibwa spoken in Northwestern Ontario. This phenomenon does not occur in Delaware.

This proposal may be extended to the obligatorily transitive AI+O stems which were discussed in §2.2.2. Since these stems are obligatorily transitive, they will be marked with the suffix /-n/.

If this position is to be accepted, it will be necessary to analyse the suffix /-n/ which appears on TI stems and AI+O stems as distinct from the suffix /-n/ which occurs on verb stems in the subordinative mode and on TA+O stems. As discussed in §2.2.0, what appear to be the same combinations of prefixes and suffixes are used in the TI Objective construction, the AI+O, the TA+O, and the subordinative mode of the independent order (on TA, AI and TI stems). In the case of the TI and AI+O stems, it is being proposed that when /-n/ occurs on these stems, it indexes a third person. I noted earlier that in the subordinative mode the /-n/ endings does not appear to index a third person object. This is particularly clear for AI stems inflected in the subordinative mode (ex. (2.46)). Similarly, in the TA+O stems, there is little reason for claiming that /-n/ actually indexes an argument of the verb stem; only the x-argument (subject) and y-argument (notional indirect object) are overtly marked by inflectional affixes, that is, by combinations of prefixes and theme signs. Hence there are two homophonous affixes, which have distinct morphological properties.

2.4 Animate Intransitive Finals

Intransitive verb stems are divided into two subtypes: Animate Intransitive (AI) and Inanimate Intransitive (II) stems. AI and II stems frequently occur in pairs which are differentiated by their finals; see (2.74) for examples. Unlike the TA and TI stems, there is no question of there being a derivational relationship between the AI and II finals. As a result, the complexities of analysis which arise in the description of transitive stems do not occur in the analysis of intransitive stems.

In this section I will list and discuss most of the AI finals which form AI verb stems in primary derivation, as well as the prefinals which occur in AI verb stems. These finals are added directly to roots, forming an AI stem. They may also be added to combinations

of a root followed by a classificatory or incorporating medial. AI finals also occur following prefinal suffixes. The argument structure of the AI finals will be discussed, as well as their morphological subcategorization properties. Some finals appear in stems which may occur in intransitive sentence types with either an animate or inanimate subject. These are discussed in §2.4.1.

Similar to the TA finals, there are two main types of AI final suffixes. The abstract finals are unitary, that is, they have no internal structure and usually do not have an evident lexical meaning. As the term is traditionally used, 'concrete final' subsumes two distinct types of suffixes: (1) simple suffixes with a lexical meaning; and (2) suffixes that are traditionally segmented into a prefinal suffix and an abstract final. As outlined in §2.0, I assume that in cases of the latter type, the prefinal is a separate suffix and not part of the final. That is, the term 'concrete final' is used only to denote suffixes which have a lexical meaning.

2.4.1 Homophonous AI and II Stems

AI and II stems frequently come in pairs (see §2.4.2 for examples). There are also cases where there is no distinction between the forms of the AI and II stems; they are homophonous. There are several intransitive verb stems which may be inflected as both AI and II stems. However these stems occur with different inflectional endings in the conjunct order, depending upon whether they are occurring in an animate or inanimate context. For instance, the stem /wələlee-/ 'burn well' may be predicated of both animate entities (paper) and inanimate entities (wood).

(2.70)

eeli=wələleet
/eeli=wəl-əlee-t/
because=good-burn-3 (AI)
'because he burns well'

eeli=wələleek
/eeli=wəl-əlee-k/
because=good-burn-3 (II)
'because it burns well'

Some of the intransitive stems which may be used in both AI and II contexts are listed in (2.71).

(2.71)

/wəl-aam-ee-/	'be in a straight line'
/wəl-aapəw-ee/	'be pleasant tasting water, liquid'
/wəl-əl-ee/	'burn well'
/niisk-əw-ee/	'produce oral sound'
/wəl-ii-hl-aa/	'go well'
/wəl-aawat-ii/	'have a good price, value'
/məʃ-amw-ii/	'be in a bunch, pile'

There is no evidence that intransitive verbs which may be used as both AI and II stems are either basically AI stems or basically II stems. That is, there does not appear be any data which suggest a phenomenon of 'zero-derivation' which would convert the gender specification of an intransitive stem to the opposite value for gender. Piggott (1989: 11) proposes to account for cases of dual use of stems by assuming that the finals which form this type of stem are unspecified for gender. They may occur in either animate or inanimate contexts.

2.4.2 Distribution and Argument Structure of AI Finals

With the exception of the finals which occur in the homophonous AI and II stems discussed in §2.4.1, AI finals are lexically specified for a single argument which is [+animate] (the transitivized AI stems have been discussed in §2.2.2).

Denny (1984) has proposed that the abstract finals which occur in intransitive verbs determine semantic properties of the verb stem. In particular, he proposes that some abstract finals determine what is traditionally called aspect class, while the final suffixes which occur in incorporating constructions determine thematic relations (Denny (1984: 244)). The term 'aspect class' refers to a system of lexical semantic classification in which predicates may be assigned to distinct semantic classes. The most basic distinctions within

the system of aspect classes are often claimed to be between states, events, and processes.⁴⁴ For example, the AI abstract final /-əsii/ frequently forms stative verbs, as was noted by Bloomfield (1962: §14.165), discussing the Menominee cognate of this final.

Denny characterizes states as occurrences “in which there is only one condition, which does not change...Events are occurrences having a single change of state...Processes involve multiple changes of state” (Denny (1984: 262)). For example, a predicate such as ‘be red’ is a state; ‘arrive’ is an event, since it involves a single change of state; ‘grow’ is a process, since it involves multiple changes of state.

Assessing the applicability of Denny’s proposals concerning aspect class to Delaware is beyond the scope of this investigation. Denny’s proposal is based upon the assumption that in Algonquian languages the final suffixes determine aspect class. However, it is generally the case cross-linguistically that assignment to a particular aspect class results from the inherent meaning of a given form (see, for example, Lyons (1977: 706)). Delaware abstract finals generally do not have a lexical meaning, notwithstanding their specifications for argument structure. Rather, the lexical meaning of a stem which contains an abstract final usually arises from other morphemes found in the stem. Many sets of data would require more detailed examination than is possible here. While the claim that verb stems may be assigned to aspect classes is likely valid cross-linguistically, there is little evidence that aspect class in Algonquian languages is determined by the abstract finals.

Although Denny (1984) takes the position that finals determine aspect class, it appears that selection for a particular prefinal suffix affects the aspect class to which a particular stem is assigned, as will be discussed in §§2.4.2.2 and 2.5.2.1. For example, the final suffix /-əsii/ usually forms stative verbs when added directly to roots (§2.4.2.1), as in (2.72a) below. However, /-əsii/ can also occur in verbs of motion. The AI stem in (2.72b)

⁴⁴ The literature on aspect class is voluminous; see Mourelatos (1978) for a useful review of proposals concerning the organization of aspect classes. Dowty (1979: Chs. II and III) presents an extensive review of syntactic tests which may be used to distinguish aspect classes in English. Jackendoff (1983) discusses some properties of stative and event predicates in English.

I consists of a root /wəl-/ 'good', a prefinal suffix /-iikw-/ 'crawl', and the AI final /-əsii/. Since verbs of motion cannot be analysed as stative verbs, this kind of data is not consistent with Denny's proposal.

(2.72)

- (a) wələsəw
/wəl-əsii-w/
good-final-3
'he is good, pretty'
- (b) wəliikwsəw
/wəl-iikw-əsii-w/
good-crawl-final-3
'he crawls nicely'

In languages such as English, where proposals concerning aspect class have been intensively investigated, justification for analyses is based upon a variety of syntactic and semantic considerations, as in Dowty's (1979) analysis of English verb class characteristics. This type of justification has not been advanced for any Algonquian language, and awaits more intensive investigation than is possible here.

In this study, the abstract finals will not be lexically specified as denoting 'aspect class' meanings such as 'state', 'event', and so on. The assignment of verb stems to aspect classes is derivative of the meanings of particular verb stems. The lexical entries of finals specify argument structure. Finals may have differing thematic role assigning properties. For example, the stative final /-əsii/ may be analysed as being specified for an x-argument which is a Theme.

The major AI abstract finals are listed in (2.73). Examples will be given in the remainder of this section. The AI abstract finals can be divided into two types. The AI finals /-əsii/, /-ii/, /-əl/, and /-iin/ form stems which are inherently intransitive. The AI stems which are formed with the finals /-aa/ and /-ee/ are analysed as instances of noun incorporation (§4.4).

(2.73)

/-əsii/	§2.4.2.1
/-ii/	§2.4.2.2
/-aa/	§2.4.2.3
/-ee/	§2.4.2.3
/-əl/	§2.4.2.4
/-iin/	§2.4.2.5

A few abstract finals do not occur directly after roots, but rather only occur with a prefinal, most notably AI /-iin/, which always occurs with the prefinal /-x-/ 'lay, be' (§2.4.2.5).

Verb stems containing AI abstract finals are often paired with a stem containing an II final, as in (2.74) below (see also the list in Goddard (1979a: 63)).

(2.74)

maxksəw, maxkeew	'he, it is red'
piilsəw, piilət	'he, it is clean'
alaxsəw, alaxən	'he, it is empty'
kohpakəsəw, kohpakan	'he, it is thick'
aləl, alət	'he, it rots, is rotten'
wiinkəl, wiinkan	'he, it tastes good'
apəw, ahteew	'he, it is there'
niiskiinaakwsəw, niiskiinaakwat	'he, it is dirty-looking'
pasihleew	'he, it splits in two'
atəsəw, atihteew	'he, it is ripe'

There is no evidence that these pairings are significant in themselves. They appear to be arbitrary. Therefore I will consider each final separately, and comment upon pairings only tangentially.

There is an asymmetry between the freedom of attachment of AI abstract finals directly to roots, and the freedom of attachment of particular combinations of prefinal and final to roots. Abstract finals generally do not attach freely to all roots. That is, a given abstract final is usually restricted to occurring only with certain roots. It is necessary to lexi-

cally list most of these combinations, as is done in §2.4.2, when the abstract finals are discussed. In contrast, sequences of prefinal and final may frequently be added to roots with relatively few limitations. Most sequences of prefinal and final may be added to virtually any acategorial root (§1.6; Drapeau (1980) has made the same observation about similar data in Montagnais Cree).

For example, there is an AI final suffix of the form /-ii/ which only attaches to a limited number of roots (§2.4.2.2).⁴⁵ However, when preceded by the prefinal suffix /-iik-/ 'grow', the suffix /-ii/ forms a large number of semantically compositional AI verbs. It is possible to generate a lengthy list of AI stems formed by adding the prefinal /-iik-/ 'grow' and the final /-ii/ to acategorial roots (§1.6).

(2.75)

piimiikəw
/piim-iik-ii-w/
diagonal-grow-AF-3
'he (plant) grows crooked'

spwiikəwak
/səpw-iik-ii-w-ak/
close together-grow-AF-3-pl
'they grow close together'

takwiikəwak
/takw-iik-ii-w-ak/
together-grow-AF-3-pl
'they grow together'

aapčiikəwak
/aapət-iik-ii-w-ak/
to death-grow-AF-3-pl
'they are overgrown, go to seed'

wəliikəw
/wəl-iik-ii-w/
good-grow-AF-3
'he grows nicely'

⁴⁵ There are two suffixes of the form /-ii/ which form AI verbs from roots and/or prefinals. The suffix under discussion is referred to as 'unstable' /-ii/. See §2.4.2.2 for details.

čačpiikəwak
 /čačəp-iik-ii-w-ak/
 separate (redup)-grow-AF-3-pl
 'they grow apart'

liikəw
 /əl-iik-ii-w/
 thus-grow-AF-3
 'he grows in a certain manner, direction'

waakiikəw
 /waak-iik-ii-w/
 bend-grow-AF-3
 'he grows crooked'

saakiikəw
 /saak-iik-ii-w/
 out-grow-AF-3
 'he sprouts, grows outwards'

aləmiikəw
 /aləm-iik-ii-w/
 away-grow-AF-3
 'he grows'

mačiikəw
 /mač-iik-ii-w/
 bad-grow-AF-3
 'he grows badly'

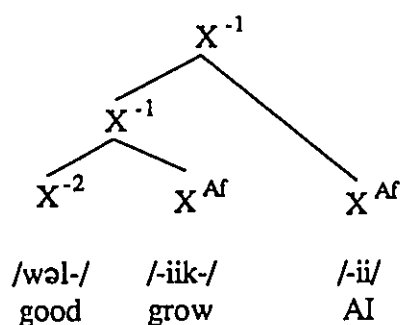
kšiikəw
 /kəš-iik-ii-w/
 fast-grow-AF-3
 'he grows quickly'

wsaamiikəw
 /wəsaam-iik-ii-w/
 excess-grow-AF-3
 'he grows too fast'

This differential behaviour may be accounted for by analysing the AI verb stems which consist of a root and the final suffix /-ii/ as being listed in the lexicon. However, the abstract final /-ii/ will subcategorize for particular prefinals, such as /-iik-/ 'grow'. Most prefinal suffixes subcategorize for acategorical roots, without any further restrictions. For example, the final /-ii/ optionally subcategorizes for prefinals such as /-iik-/ 'grow', in

sult if a structure is formed in which /wəl-iik-/ is followed by a morpheme which is specified for grammatical category, as in (2.78), such as /-ii/.

(2.78)



2.4.2.1 /-əsii/

The abstract final /-əsii/ is probably the most common of the AI abstract finals. The final /-əsii/ is suffixed to roots, to prefinals, and also occurs in stems where it is suffixed to classificatory medials. This final also occurs in certain other combinations following the morpheme /-əkʷ-/, which will be discussed in §3.2.4. A very large number of AI stems are formed by adding /-əsii/ to roots and to sequences of roots and medial. Representative samples are given in (2.79a) and (2.79b), respectively. A more complete, but not exhaustive listing is given in the Appendix to Ch. II. The classificatory medials are discussed in more detail in Chapter IV.

In the morpheme by morpheme translations, the abbreviation 'AF' is used for 'abstract final'. In the examples in (2.79), the verb stems have a stative interpretation.

(2.79)

(a) Added to Roots

wʔaksəw
/wəʔak-əsii-w/
damp-AF-3
'he is damp, wet'

wəksəw

/wəsk-əsii-w/
 young-AF-3
 'he is young, new'

wšapsəw
 /wəšap-əsii-w/
 thin-AF-3
 'he is thin (material)'

asksəw
 /ask-əsii-w/
 raw-AF-3
 'he is raw'

ptəkwsəw
 /pətək-w-əsii-w/
 round-AF-3
 'he is round'

čpəsəw
 /čəp-əsii-w/
 separate-AF-3
 'he is apart, isolated, separate from others'

wšaaxsəw
 /wəšaax-əsii-w/
 slippery-AF-3
 'he is slippery'

(b) Added to Root And Medial

awahləmahkwsəwak
 /wawahləm-ahkw-əsii-w-ak/
 far (redup)-wood-AF-3-pl
 'they (wood/solid) are far apart'

waakčeesəw
 /waak-əčee-əsii-w/
 bend-body-AF-3
 'he is bent/lopsided/not straight'

aapeeksəw
 /aap-eek-əsii-w/
 open-sheet-AF-3
 'he (page of book, newspaper) turns'

kiinaloosəwak
 /kiin-aloo-əsii-w-ak/
 sharp-pointed-AF-3-pl
 'they are sharp'

As noted, stems formed by adding /-əsii/ to roots generally have stative interpretations. However, several verbs of motion are formed by adding /-əsii/ to roots, as in (2.80).

(2.80)

aləmsəw
/aləm-əsii-w/
away from-AF-3
'he goes away'

pəməsəw
/pəm-əsii-w/
along-AF-3
'he walks'

Verb stems which are formed by suffixation of sequences of prefinal and the final suffix /-əsii/ to a root frequently do not have a stative interpretation. The prefinals identified in (2.81) form AI verb stems with the abstract final /-əsii/. When combined with prefinals, the final /-əsii/ forms some stems which could be described as stative (2.81d). However, /-əsii/ also forms verbs of motion (2.81a-b), and other types of action (2.81c, e). These sequences of prefinal and final are added to large numbers of roots to form AI stems.

(2.81)

- | | | |
|-----|--|------------------------------------|
| (a) | /akoo-əsii/
əspakoosəw
/əsp-akoo-əsii/
upwards-climb-AF-3 | 'climb'

'he climbs upwards' |
| (b) | /iikw-əsii/
aləmiikwsəw
/aləm-iikw-əsii-w/
away-crawl-AF-3 | 'crawl'

'he crawls away' |
| (c) | /əloo-əsii/
čiipəloosəw
/čiip-əloo-əsii-w/
frightful-eat-AF-3 | 'eat'

'he eats frightfully' |

- (d) /-aaw-əsii/ 'live'
 wəlaawsəw 'he lives well'
 /wəl-aaw-əsii-w/
 good-live-AF-3
- (e) /-iix-əsii/ 'speak'
 maašiixsəw 'he speaks oddly'
 /maaš-iix-əsii-w/
 strange-speak-AF-3

Sequences of prefinal and /-əsii/ are added to any root, forming a semantically compositional verb stem. That is, the final /-əsii/ attaches to (subcategorizes for) certain prefinals, which productively attach to roots. The status of the suffixation of /-əsii/ to roots is more difficult to determine. Many acategorial roots may form a stative stem by suffixing /-əsii/, as is attested to by the list of AI stems in the Appendix to Chapter II. In this respect, the AI finals /-əsii/ is unlike the other AI finals added to roots. As is discussed in the following sections, AI finals (other than /-əsii/) occur only after small numbers of roots. These combinations of root and AI final are analysed as being lexically listed. Since the attachment of /-əsii/ to roots appears to be productive, AI stems formed with this suffix are analysed as being derived by rule. The lexical entry of this suffix is as follows. In the subcategorization frame, 'X^{Af}' is used to represent the prefinals to which /-əsii/ may be attached.

(2.82)

$$\left[\begin{array}{l} /-əsii/ \\ \text{'state'} \\ [+V -N] \\ \left\{ \begin{array}{l} X^{Af} \\ X^{-2} \end{array} \right\} \text{ --} \\ x-[+animate]\text{-Theme} \end{array} \right]$$

2.4.2.2 Verb Suffixes of the Form /-ii/

A wide variety of AI verbs appear to contain a final suffix of the form /-ii/. It will be necessary to postulate that there are several homophonous suffixes which have the form /-ii/, since not all instances of /-ii/ have the same morphosyntactic or morphophonological characteristics. Many AI verb stems which appear to be formed with /-ii/ are, historically, based upon AI middle reflexive verb stems formed with PA *-o (§3.2.3.1). Certain stems which are formed with a suffix /-ii/ may function both as II and AI stems. These stems are analysed as containing a distinct suffix /-ii/ which is unspecified for grammatical category (§2.4.1). There are also several suffixes of the form /-ii/ which are added to noun stems in secondary derivation. These are discussed in §3.1.4.

This section focuses on two suffixes of the form /-ii/ which are added directly to roots, or to prefinal suffixes. A distinction must be made between two suffixes of the form /-ii/, which will be referred to as 'unstable' and 'stable' /-ii/. Unstable /-ii/ shifts to /-ə/ before the third person inflectional ending /-w/ (R13); stable /-ii/ does not.⁴⁶ It is not clear if this distinction is of any other significance, since both stable and unstable /-ii/ appear to attach to acategorial roots. Stable and unstable /-ii/ have distinct formal properties in that unstable /-ii/ is lexically marked to undergo R13, while stable /-ii/ is not. The behaviour of /-ii/ may be accounted for by proposing that there are two homophonous finals /-ii/ which are distinct only with respect to whether or not they undergo R13. Neither stable or unstable /-ii/ appear to be added to medials.

Examples of unstable and stable /-ii/ added to roots are given in (2.83a-b), respectively. These lists contain virtually all AI verb stems formed by adding unstable or stable /-ii/ to roots.

⁴⁶ Goddard (1979a: 64) suggests that unstable /-ii/ may have originated historically in an alternation found in 'middle' verbs.

(2.83)

(a) Unstable /-ii/

wiikəw
/wiik-ii-w/
dwell there-AF-3

‘he lives there’

apəw
/ap-ii-w/
be there-AF-3

‘he is there’

txəwak
/tax-ii-w-ak/
so many-AF-3-pl

‘they are so many’

ooteewəw
/ooteew-ii-w/
visit-AF-3

‘he visits’

wiisəw
/wiis-ii-w/
fat-AF-3

‘he is fat’

maaweewəwak
/maaweew-ii-w-ak/
gather-AF-3-pl

‘they hold, attend a service’

saakəw
/saak-ii-w/
protrude-AF-3

‘he sprouts, emerges’

niipawəw
/niipaw-ii-w/
stand-AF-3

‘he stands’

aašookəw
/aašook-ii-w/
poor-AF-3

‘he is poor’

(b) Stable /-ii/

kawiiw
prostrate-AF-3

‘he sleeps’

kčiiw
/kət-ii-w/
out-AF-3

‘he goes out’

škiiw
/šək-ii-w/

‘he urinates’

urinate-AF-3	
əsp-ii-w upwards-AF-3	'he rises'
kwaxk-ii-w return-AF-3	'he comes/goes back'
kohp-ii-w remove-AF-3	'he disembarks'
poos-ii-w embark-AF-3	'he embarks'
pəmp-ii-w down-AF-3	'he goes downhill'
niix-ii-w downwards-AF-3	'he descends from, gets out of vehicle'
aamw-ii-w arise-AF-3	'he gets up from lying'
pasəkw-ii-w arise-AF-3	'he gets up from sitting'
eeš-ii-w through-AF-3	'he goes through'
maač-ii-w go home-AF-3	'he goes home'
niink-ii-w growl-AF-3	'he growls'
alaw-ii-w hunt-AF-3	'he hunts'
mənanč-ii-w left handed-AF-3	'he is lefthanded'
kwčəkwiiw /kwəčəkw-ii-w/ motion-AF-3	'he moves, stirs'
səkw-ii-w spit-AF-3	'he spits'
tohk-ii-w awake-AF-3	'he wakes up'
kwələp-ii-w turn-AF-3	'he turns around'

In (2.84) are listed AI verb stems which are formed with unstable /-ii/ preceded by prefinal suffixes. When combined with prefinals, the suffix referred to as 'unstable' /-ii/ forms some verbs which refer to changes of state (processes), as in (2.84a,b).

(2.84)

- | | | |
|-----|---|--|
| (a) | /at-ii/
takwačəw
/takw-at-ii-w/
together-cold-AF-3 | 'be cold' ⁴⁷

'he is cold' |
| (b) | /iik-ii/
wəliikəw
/wəl-iik-ii-w/
good-grow-AF-3 | 'grow' ⁴⁸

'he grows well' |
| (c) | /ahteenam-ii/
matahteenaməw
/mat-ahteenam-ii-w/
bad-state of mind-AF-3 | 'state of mind'

'he is unhappy' |
| (d) | /asan-ii/
ntaləmasaniin
/nə-t-aləm-asan-ii-n/
1-Ep-away-carry-AF-3 | 'carry'

'I carry him, it away' |
| (e) | /iilən-ii/
niišiilənəwak
/niiš-iilən-ii-w-ak/
two-live-AF-3-pl | 'live'

'they live together, in twos' |
| (f) | /ahoos-ii/
kwənahoosəw
/kwən-ahoos-ii-w/
long-wear-AF-3 | 'wear clothing, a dress'

'she wears a long dress' |
| (g) | /iilat-ii/
ačiipiilatəw
/čačiip-iilat-ii-w/
frightful (redup)-eat-AF-3 | 'eat'

'he eats like a pig' |

⁴⁷ The consonant /-t-/ of the prefinal /-at-/ is palatalized to /-č-/ before a high front vowel (R8).

⁴⁸ See also (2.75) for a list of stems formed with prefinal /-iik-/ and /-ii/.

- (h) /-kaapaw-ii/ 'stand'
 šaax(a)kiiikaapawəw 'he stands straight'
 /šaax(a)k-ii-kaapaw-ii-w/
 straight-Ep-stand-AF-3
- (i) /-akw-ii/ 'dress'
 niiskakəw 'he dresses raggedly'
 /niisk-akw-ii-w/
 dirty-dress-AF-3
- (j) /-mw-ii/ 'make noise'
 niisktəyeeməw 'he makes a lot of noise'
 /niisk-təy-ee-mw-ii-w/
 dirty-backside-AF-make noise-AF-3
- (k) /-amw-ii/ 'adhere, be in a pile, lump'
 mšaməw 'he is in a pile'
 /məš-amw-ii-w/
 arranged-adhere-AF-3
- (l) /-səmw-ii/ 'drink'
 thiisəməw 'he has a cold drink'
 /tah-ii-səmw-ii-w/
 cold-Ep-drink-AF-3
- (m) /-xəmw-ii/ 'swim, be in water'
 thiixəməw 'he is in the water'
 /tah-ii-xəmw-ii-w/
 cold-Ep-swim-AF-3
- (n) /-aačiimw-ii/ 'tell a story'
 niiskaačiiməw 'he tells a dirty story'
 /niisk-aačiimw-ii-w/
 dirty-tell a story-AF-3
- (o) /-pw-ii/ 'taste'
 katoopəw 'he is hungry'
 /katoo-pw-ii-w/
 want-taste-AF-3

There are only a small number of AI stems which consist of a root followed by stable or unstable /-ii/. However, most sequences of prefinal and unstable /-ii/ appear to be

suffixed to roots without restriction. It is generally possible to freely form a large number of AI stems which consist of a root followed by a prefinal and the AI final suffix unstable /-ii/, as was exemplified in (2.75). I analyse unstable /-ii/ as subcategorizing for certain prefinals; these prefinals themselves subcategorize for roots. The stems which are formed by adding 'stable' or 'unstable' /-ii/ to roots, as in (2.83a-b), are listed in the lexicon.

(2.85)

/-ii/ [+V -N] [+R13] XAf x-[+animate]-Theme

In the lexical entry for 'unstable' /-ii/, the specification [+R13] indicates that /-ii/ is subject to the phonological rule which shifts /-ii/ to [-ə] in the appropriate environment. The term 'XAf' is employed as a cover term for the prefinal suffixes to which 'unstable' /-ii/ is attached.

2.4.2.3 /-aa/, /-ee/ 'incorporating'

Both the abstract final /-aa/ and the abstract final /-ee/ discussed in this section occur with 'incorporating' stems. These are verb stems consisting of a root or stem compounded with a bound variant of a noun stem. Although the analysis of incorporating constructions is deferred to §4.4, the finals /-aa/ and /-ee/ will be discussed here.

There appears to be no formal or functional explanation for the differentiation between the two finals, and there is some overlap between the use of the two finals. On occasion speakers will treat a stem as ending in the final /-aa/ and at other times treat the same stem as ending in the final /-ee/. As well, for some stems, one speaker may represent a given combination of root and incorporated stem as being formed with the final /-aa/ while another may represent the same combination as being formed with the final /-ee/. These inconsistencies may result from confusion caused by R13, which neutralizes the distinction

between /-aa/ and /-ee/ in third person independent order forms. That is, there may be some ongoing levelling.

An unresolved problem with the 'incorporating' finals is that some AI stems which are formed with the finals /-aa/ and /-ee/ appear to have a Theme subject, while others appear to have an Agent subject. Compare (2.86a) and (2.86b).

(2.86)

- | | | |
|-----|---|------------------------|
| (a) | kpakčaalaa
/kə-pak-čaal-aa/
2-flat-nose-AF | 'you have a flat nose' |
| (b) | ntaašəwahksəna
/nə-t-aašəw-ahkəsən-aa/
1-exchange-shoe-AF | 'I change my shoes' |

In these data, the semantic relation between the root and the incorporated element is different. In (2.86a) the root acts as an adjectival modifier, in that it 'modifies' or describes a property of the incorporated element. That is, the semantic relationship between the root and the incorporated noun is comparable to the relationship in English between an adjective and the noun which it modifies. In (2.86b) the incorporated element is 'affected', in that it undergoes the action described by the root. This phenomenon was first observed by Wolfart (1971), discussing comparable data in the related language Cree.

Examples of AI /-aa/ and /-ee/ after incorporated stems are given in (2.87a-b), respectively. In the examples in (2.87) stem-final long vowels have been shortened by R41.

(2.87)

- | | | |
|-----|--|-----------------------------|
| (a) | /-aa/

nəkwətənaxka
/nə-nəkwət-ə-naxk-aa/
1-one-Ep-hand-AF |

'I have one hand' |
| | niiskxa
/nə-niisk-ax-aa/
1-dirty-ear-AF |

'I have dirty ears' |

nšiiwaasiitəya /nə-šiiw-aasiitəy-aa/ 1-tired-backside-AF	'I have a tired/sore backside'
kpakčaalə /kə-pak-čaal-aa/ 2-flat-nose-AF	'you have a flat nose'
ntaltoona /nə-t-al-toon-aa/ 1-rot-mouth-AF	'I have trenchmouth'
nəməhčəkəkwana /nə-mehč-kəkwana-aa/ 1-used up-shin-AF	'I am barelegged'
ntaašəwahksəna /nə-t-aašəw-ahkəsən-aa/ 1-exchange-shoe-AF	'I change my shoes'
kpiintašiiikana /kə-piint-ašiiikan-aa/ 2-inside-socks-AF	'you put on socks'
(b) /-ee/	
ntaapiilənčə /nə-t-aap-ii-lənč-ee/ 1-open-Ep-hand-AF	'I open up my hands'
ntaašəwiinaxke /nə-t-aašəw-ii-naxk-ee/ 1-exchange-Ep-hand-AF	'I reach across'
nəkwtəkaate /nə-nəkwt-ə-kaate-ee/ 1-one-Ep-leg-AF	'I have one leg'
niiskaalohkwe /nə-niisk-aalohkw-ee/ 1-dirty-head-AF	'I have dirty hair'
nəwaaxeeliinkwe /nə-waaxeel-iinkw-ee/ 1-shiny-face-AF	'I have light-coloured eyes'
nəačəwale /nə-nəač-əwal-ee/ go after-bundle-AF	'I go to fetch a load'
naatxakwe /naat-axakw-ee/ go after-processed wood-AF	'I fetch wood'

niiskiike
/nə-niisk-iik-ee/
1-dirty-house-AF

'I have a dirty house'

nəmanxe
/nə-man-ax-ee/
1-cut-wood-AF

'I chop wood'

kəwiinkiilənəwe
/kə-wiink-iilənəw-ee/
2-good-man-AF

'you are (a woman) fond of all the men'

A small number of AI verbs are formed by adding /-ee/ directly to roots. Formation of AI verbs by suffixation of /-ee/ to roots appears to be limited to a small number of stems, and segmentation of some examples is uncertain. Since these verbs have agentive subjects, I assume that these are instances of the same final /-ee/ which marks AI incorporating stems.

(2.88)

wənkeew
/wənk-ee-w/
bark-AI-w

'he barks'

wiiteew
/wiit-ee-w/
accompany-AI-3

'he goes along'

məneew
/mən-ee-w/
drink-AI-3

'he drinks'

apiikweew
/apiikw-ee-w/
musical instrument-AI-3

'he plays a musical instrument'

paxkeew
/paxk-ee-w/
turn off-AI-3

'he turns off (the road)'

A large number of AI stems are formed with a prefinal followed by final /-ee/. Note also the stems formed with /-ee/ discussed in §2.4.1, which may be either AI or II. The combinations of prefinal and final discussed here invariably form AI stems.

(2.89)

- (a) /-aah-ee/ 'throw'
 nkətaahēen
 /nə-kət-aah-ee-n/
 1-out-throw-AF-3
 'I throw him, it out'
- (b) /-ahk-ee/ 'be gone/away'
 sahkahkeew
 /sahk-ahk-ee-w/
 so long-gone-AF-3
 'he is away a certain length of time'
- (c) /-aašook-ee/ 'swim'
 aləmaašookeew
 /aləm-aašook-ee-w/
 away-swim-AF-3
 'he swims away'
- (d) /-oonš-ee/ 'have children'
 xweeloonšeew
 /məxeel-oonš-ee-w/
 many-children-AF-3
 'he has many children'
- (e) /-iilaw-ee/ 'physical sensation'
 mačiilaweew
 /mat-iilaw-ee-w/
 bad-physical sensation-AF-3
 'he feels discomfort'
- (f) /-aankw-ee/ 'lay'
 niišaankweewak
 /niiš-aankw-ee-w-ak/
 two-lay-AF-3-pl
 'they lay in twos'

- (g) /-oox-ee/ 'walk'
- aləmooxweew
 /aləm-oox-ee-w/
 away-walk-AF-3
 'he walks away'

2.4.2.4 /-əl/

The final suffix /-əl/ occurs in a very limited number of AI stems. The examples in (2.90) appear to be the only stems formed by adding this suffix directly to a root. The suffix /-əl/ does not have a discernable meaning.

(2.90)

- | | |
|--------------------------------------|-----------------------|
| aləl
/al-əl-w/
rot-AF-3 | 'he rots' |
| wiinkəl
/wiink-əl-w/
nice-AF-3 | 'he has a good taste' |
| ʒəwəl
/ʒəw-əl-w/
sour-AF-3 | 'he has a sour taste' |

The suffix /-əl/ also occurs preceded by a prefinal suffix /-əkii-/ 'size, extent' in a small number of stems.

(2.91)

- | | |
|---|------------------------|
| xwəkiil
/məx-əkii-əl-w/
big-size-AI-3 | 'he is big' |
| ləkiil
/əl-əkii-əl-w/
thus-size-AI-3 | 'he is a certain size' |
| amankkiilook
/mamank-əkii-əl-w-ak/
big (redup)-size-AI-3-pl | 'they are big' |

Since /-əl/ occurs in only a few stems, and does not appear to form new stems I analyse words which contain this suffix as being listed in the lexicon.

2.4.2.5 /-iin/

The AI abstract final /-iin/ only occurs following the prefinal /-x-/ 'lay, be, fall'; it does not occur attached directly to roots or medials. This combination of prefinal and final forms a large number of stems. The following is a sample only.

(2.92)

ʃənkiiixin
/ʃənk-ii-x-iin-w/
level-Ep-lay-AF-3
'he lays down'

piimiiixin
/piim-ii-x-iin-w/
diagonal-Ep-lay-AF-3
'he lays crooked, sideways'

kpiixin
/kəp-ii-x-iin-w/
obstruct-Ep-lay-AF-3
'he is in the way'

kwələpiixin
/kwələp-ii-x-iin-w/
turn-Ep-lay-AF-3
'he turns over while laying'

maskaniixin
/maskan-ii-x-iin-w/
strong-Ep-lay-AF-3
'he (e.g. mitt) is a tight fit'

təpiixin
/təp-ii-x-iin-w/
rotate-Ep-lay-AF-3
'he turns (over)'

txeekiixin
/tax-eek-ii-x-iin-w/
so many-sheetlike-Ep-lay-AF-3
'he is in so many sheets, layers'

(2.96)

pən-onkw-aam	'he falls out of bed'
šeexkal-onkw-aam	'he sleeps naked'
wsaam-onkw-aam	'he oversleeps'
eel-onkw-aam	'he sleeps late'
wəl-onkw-aam	'he has a good dream'
čiip-onkw-aam	'he has a frightful dream'
kwaaxkws-onkw-aam	'he snores'

The lexical entry for /-aam/ is as in (2.97).

(2.97)

[-aam/	
'sleep'	
[+V -N]	
/-onkw-/	_____
x-[+animate]-Theme	

2.4.3.2 /-hl/ 'motion'

The final /-hl/ forms AI verbs involving certain kinds of motion, but has a very limited distribution. In all examples recorded it occurred after the sequence of morphemes /-aak-əčee-/ (§4.1.9), or after /-aašəw-/ 'across'. In form and meaning, this final resembles the prefinal /-hl-/ found in the sequence of prefinal and final /-hl-aa/ discussed in §2.4.1.1. However, since it does not co-occur with a final, I analyse /-hl/ as a final which is distinct from the homophonous prefinal suffix /-hl-/. In the examples in (2.98), the morpheme /-aak-/ has been tentatively assigned the gloss 'jump'; /-əčee-/ is assumed to be the morpheme which is glossed as 'body, shape' (§4.1.9).

(2.98)

- (a) ktaakčehl
 /kət-aak-əčee-hl-w/
 out-jump-body-motion-3
 'he jumps out'

apaamaakčehl
 /papaam-aak-əčee-hl-w/
 about-jump-body-motion-3
 'he jumps about'

čooxpwaakčehl
 /čooxpw-aak-əčee-hl-w/
 into water-jump-body-motion-3
 'he jumps in the water'

- (b) apaamaašəwihl
 /papaam-aašəw-i-hl-w/
 about-across-Ep-motion-3
 'he swims about'

aləmaašəwihl
 /aləm-aašəw-i-hl-w/
 away-across-Ep-motion-3
 'he floats away'

As there is no evidence that the morphemes which precede /-hl-/ are specified for grammatical category, /-hl-/ must be specified for grammatical category. Since /-hl-/ in the examples discussed in this section appears in the right-most position in the stem, /-hl-/ is the head of the word.

The lexical entry for this suffix is as in (2.99) below. Since /-hl-/ appears to select only for the immediately preceding suffixes /-aašəw-/ and /-əčee-/, these suffixes are explicitly mentioned in the morphological subcategorization frame for this final.

(2.99)

[-hl-]
'motion'
[+V -N]
{ /-aašəw-/ }
{ /-əčee-/ } —
x-[+animate]-Theme

For several stems ending in /-hl/ I also recorded equivalent forms ending in /-hl-aa/. For instance, aləmaaʒəwihl 'he floats away' was also recorded as aləmaaʒəwihleew, with no apparent difference in meaning. The latter form may suggest that the final /-aa/ is being added to a form which already contains a final. However, pairs of stems such as these were only recorded sporadically, and the significance of this phenomenon remains uncertain.

2.4.3.3 /-kaa/ 'dance'

The AI final /-kaa/ 'dance' forms AI stems. An allomorph /-kee/ was recorded in a transitivized AI, before TA final /-əm/ (§2.1.4) (2.100b).

(2.100)

(a) /-kaa/

kəntkeew⁴⁹
/kənt-kaa-w/
?-dance
'he dances'

ləkeew
/əl-ə-kaa-w/
thus, so-Ep-dance-3
'he dances in a certain manner; in a certain direction'

akətəkəkeew
/kakətək-ə-kaa-w/
actively (redup)-Ep-dance-3
'he does a fast dance'

ʒəhwkeew
/ʒəhw-kaa-w/
slow-dance-3
'he dances slowly'

niiʒkahna
/nə-niiʒ-kaa-hna/
1-two-dance-1p
'we (exc) dance in twos'

⁴⁹ The root /kənt-/ occurs in only a few stems, such as /kənt-eeləm/ 'condemn someone'. Its meaning is uncertain.

(b) /-~~kee~~/

niiškeemaaw
/nə-niiš-kee-əm-aa-w/
1-two-dance-TA-3-sg
'I dance with him'

The lexical entry for this suffix is as in (2.101).

(2.101)

/-kaa/ 'dance' [+V -N] X-2 _____ x-[+animate]-Agent

2.4.3.4 /-pahtoo/ 'run, hurry'

The final /-pahtoo/ 'hurry, run' forms AI verbs which are often translated as involving the notion 'be in a hurry'. Only a few stems containing /-pahtoo/ were recorded. It would be necessary to elicit further data in order to determine the productivity of this suffix.

(2.102)

mpaskwiiipahto
/nə-pasəkw-ii-pahtoo/
get up from sitting-Ep-run
'I get up in a hurry from sitting'

aamwiiipahtoow
/aamw-ii-pahtoo-w/
get up from lying down-Ep-run
'he gets up fast from lying down'

nəmaačiipahtoon
/nə-maač-ii-pahtoo-n/
1-go home-Ep-run-3
'I run him, it home; take him, it back to where he, it belongs'

2.5 Inanimate Intransitive Finals

In this section I list the Inanimate Intransitive (II) abstract finals. The abstract finals may be added directly to combinations of a root followed by a medial, or may be preceded by a prefinal. There are no II concrete finals.

2.5.1 Inanimate Intransitive Abstract Finals

As with the AI abstract finals, there is a small set of II abstract finals which are added to roots and also to sequences of root followed by a medial. The II abstract finals also occur preceded by prefinals. The II abstract finals assign certain thematic relations. The range of thematic relations assigned in II stems will be less than is found in AI stems, since there are no II verbs with agents. That is, 'agents' must be semantically animate as well as grammatically animate. The subjects of sentences containing II stems are invariably Themes.

The II abstract finals are listed in (2.103). Stems formed with II finals are frequently paired with corresponding verbs formed with II finals. See §2.4.2 for a brief discussion of pairings of AI and II finals.

(2.103)

(a) /-ee/	2.5.1.1
(b) /-at/	2.5.1.2
(c) /-an/	2.5.1.3
(d) /-ən/	2.5.1.4
(e) /-ət/	2.5.1.5

There are also several other Inanimate Intransitive finals which occur in a small number of stems. These include /-ii/, as in (2.104) below.

(2.104)

paas-ii-w
swell-AF-3
'it rises'

A few examples suggest that there may be an II final /-aa/: wsihkaa 'it is sunset'.⁵⁰

A putative II final /-aa/ would be distinct from the unspecified final /-aa/ which forms stems which may be either AI or II (§2.4.1.1).

2.5.1.1 /-ee/

The II abstract final /-ee/ forms a large number of II verbs. This is the most commonly occurring II final. When added to roots or medials, II stems formed with /-ee/ usually have a stative interpretation, as in (2.105) below. However, II stems formed with /-ee/ which also contain the prefinal suffix /-t-/ (2.107, 2.108) generally have a 'process' interpretation. That is, they would be analysed by lexical semanticists such as Denny (1984) as involving multiple changes of state. I analyse all instance of the II final /-ee/ as assigning the thematic role Theme. Putative differences in the assignment of aspect class will result from differences in the meanings of the morphemes which /-ee/ is added to.

Examples added to roots are listed in (2.105a); examples added to medials in (2.105b) (-y- immediately preceding the final /-ee/ is an epenthetic glide, R11).

(2.105)

(a) Added to Roots

sasapeew
/sasap-ee-w/
spotted-AF-3
'it is spotted (e.g. shirt, dress)'

skapeew
/səkap-ee-w/
wet-AF-3
'it is wet'

šiikaleew
/šiikal-ee-w/
transparent-AF-3
'it is transparent, thin (material)'

⁵⁰ Some speakers pronounce this stem as wsihkaan.

tamakeew
/tamak-ee-w/
bend at joint-AF-3
'it bends at a joint, is bent at a joint'

askaskweew
/askaskw-ee-w/
green-AF-3
'it is green'

(b) Added to Root Followed by Medial

skapahkeeyeew
/səkap-ahkee-y-ee-w/
wet-earth-Ep-AF-3
'it is wet ground'

ʒaapwʒeeyeew
/ʒaapw-əʒee-y-ee-w/
through-volume-Ep-AF-3
'it is/has a hole right through'

kwənakweeyeew
/kwən-askw-ee-y-ee-w/
long-grass-Ep-AF-3
'it is long grass'

pakčeeeyeew
/pak-əčee-y-ee-w/
flat-body-Ep-AF-3
'it is flat'

kiinaloo(wə)yeew
/kiin-aloo-y-ee-w/
sharp-pointed-Ep-AF-3
'it is sharp'

There are several II prefinals which occur with the II abstract final /-ee/. These include /-ahkam-/ 'day, sky', which forms verbs pertaining to meteorological conditions. This is a bound variant of a now non-occurring verb root which may be reconstructed as Proto-Algonquian */waxkam-/ 'bright, clear' (Goddard (1971: 141)).

(2.106)

thahkameew
/tah-ahkam-ee-w/
cold-day-II-3

'it is a cold day'

nkwətahkameew
/nəkwət-ahkam-ee-w/
one-day-II-3
'it is one day'

wəl-ahkam-ee-w
good-day-II-3
'it is a nice day'

mat-ahkam-ee-w
bad-day-II-3
'it is bad weather'

Other sequences which contain the II final /-ee/ include /-t-ee/ 'heat' (§2.5.2.7) and /-aan-t-ee/ 'sun's heat' (§2.5.2.8). The prefinal /-t-/ 'heat' is followed by the final /-ee/, forming II verb stems pertaining to heat and the application of heat. These stems correspond to TA and TI verb stems formed with /-əs-w/ and /-əs-/ 'by heat', respectively, and also to AI verbs formed with /-s-ii/ (§3.4.3.7). These II stems are formed by adding the prefinal suffix /-t-/, and the final /-ee/ to roots. As will be discussed in §3.2.8, the corresponding AI stems are formed by adding a suffix of the form /-ii/ to TA stems formed with /-əs-w/.

(2.107)

wənteew
/wən-t-ee-w/
boil-heat-II-3
'it comes to a boil'

looteew
/loo-t-ee-w/
burn-heat-II-3
'it burns'

pwahkteew
/pwahk-t-ee-w/
burst-heat-II-3
'it explodes'

mehhteew
/meht-t-ee-w/
used up-heat-II-3

'it burns up'

kšəteew
/kəš-ə-t-ee-w/
intense-Ep-heat-II-3
'it is hot'

atihteew
/atəh-t-ee-w/
ripe-heat-II-3
'it is ripe'

kiišteew
/kiiš-t-ee-w/
completed action-heat-II-3
'it is cooked done'

lənkteew
/lən-k-t-ee-w/
melt-heat-II-3
'it melts'

paasteew
/paas-t-ee-w/
rise-heat-II-3
'it raises'

naxkwteew
/naxkw-t-ee-w/
burn-heat-II-3
'it burns (fire)'

In the examples in (2.108a), /-t-ee/ is preceded by the morpheme /-əčee-/ 'body, shape' (§4.1.9), which has the allomorph /-əča-/ when followed by /-t-ee/ (compare also the morphophonological effect of /-s-ii/ (§3.2.8)). In the example in (2.108b), one instance of the medial /-əpee-/ 'water' (§4.1.4) with the allomorph /-əpa-/ before /-t-/ was recorded.

(2.108)

(a) Following /-əčee-/

nsəkčateew
/nəsək-əčee-t-ee-w/
black-body-heat-II-3
'it is burnt black (e.g. meat)'

piikčateew

/piik-əčee-t-ee-w/
 crumble-body-heat-II-3
 'it falls apart/to pieces in cooking'

powčateew
 /pow-əčee-t-ee-w/⁵¹
 lump-body-heat-II-3
 'it has lumps protruding from the surface'

škwəčateew
 /šəkw-əčee-t-ee-w/
 crush-body-heat-II-3
 'it falls apart in cooking, boils down'

(b) Following /-əpee-/

paalpateew
 /paal-əpa-t-ee-II-w/
 over-water-heat-3
 'it (heated water) overflows'

In several examples in which /-əpee-/ occurs before /-t-ee/ 'heat', the final vowel of the medial /-əpee/ did not shift to /-a/, unlike the examples in (2.109a). I have no explanation of this.

(2.109)

ihkpeeteew
 /ihk-əpee-t-ee-w/
 dry-water-heat-II-3
 'it boils dry'

kšəpeeteew
 /kəš-əpee-t-ee-w/
 intense-water-heat-II-3
 'it is hot water'

The II final /-ee/ also occurs in stems which refer to the heat of the sun. In these cases it is preceded by the prefinal /-t-/ 'heat', and also by a morpheme /-aan-/, which was

⁵¹ The transcription of the vowel of the root /pow-/ is uncertain; /paw-/ may be a more accurate underlying representation.

not recorded in any other forms. The meaning of /-aan-/ is uncertain; I have tentatively glossed it as 'sun'. The segmentation of examples (2.110-c-d) is uncertain.

(2.110)

- (a) wəlaanteew
/wəl-aan-t-ee-w/
good-sun-heat-II-3
'it (sun) shines'
- (b) waasəlaanteew
/waasəl-aan-t-ee-w/
shine-sun-heat-II-w
'it (sun) shines'
- (c) kʂəlaanteew
/kəʂ-əl-aan-t-ee-w/
intense-?-sun-heat-II-3
'it is a hot day'
- (d) eeʂəlaanteew
/eeʂ-əl-aan-t-ee-w/
through-?-sun-heat-II-3
'it is sun coming through'

The lexical entry for /-ee/ is as in (2.111). The suffix /-ee/ is added productively to roots. In the lexical entry 'X⁻²' denotes that /-ee/ may be added to acategorical roots. The non-root morphemes to which /-ee/ may be added include /-ahkam-/ 'day', /-t-/ 'heat', and the medial suffixes /-ahkee-/ 'earth', /-askw-/ 'grass', /-əʂee-/ 'volume' (?), /-əčee-/ 'body', and /-aloo(w)-/ 'pointed'. The symbol 'X^{Af}' is used as a cover term to denote these affixes.

(2.111)

<div style="display: flex; align-items: center; justify-content: center;"> <div style="font-size: 4em; margin-right: 10px;">[</div> <div style="text-align: center;"> <div>/ee/</div> <div>[+V -N]</div> <div> <div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 5px;">{</div> <div style="margin: 0 5px;">X^{Af}</div> <div style="font-size: 2em; margin-right: 5px;">}</div> <div style="margin: 0 5px;">---</div> <div style="font-size: 2em; margin-right: 5px;">{</div> <div style="margin: 0 5px;">X⁻²</div> <div style="font-size: 2em; margin-right: 5px;">}</div> </div> </div> <div style="margin-left: 10px;">]</div> </div> <div>x-[-animate]-Theme</div> </div>
--

2.5.1.2 /-at/

The II abstract final /-at/ forms verbs which have a stative interpretation. It is unclear why some II stative verbs are formed with this final and why others take /-ee/ (§2.5.1.1) or /-an/ (§2.5.1.3). There are only a small number of II stems which are formed by adding /-at/ directly to roots (2.112a). Most II verb stems containing classificatory medials were recorded with /-at/ (2.112b).

(2.112)

(a) Added to Roots

ahwat
/ahw-at-w/
intense-AF-3
'it is difficult'

peexəwat
/peexəw-at-w/
near-AF-3
'it is near, soon'

aapəwat
/aapəw-at-w/
easy-AF-3
'it is easy'

kwələkWat
/kwələkW-at-w/
bend-AF-3
'it has a bend in it'

wəyakat
/wəyak-at-w/
sufficient-AF-3
'it is in abundance'

laawii=tpihkat
/laawii=təpihk-at-w/
middle=night-AF-3
'it is midnight'

(b) Added to Root Followed by Medial

paptəkahtakat
/paptək-ahtak-at-w/
crooked-stringlike-AF-3
'it (stringlike object) is crooked'

sahkahkwat
 /sahk-ahkw-at-w/
 certain length-wood/solid-AF-3
 'it is a certain dimension, length, height'

thiikamiikat
 /tah-iikamiik-at-w/
 cold-house-AF-3
 'it is a cold house'

kwənaalakat
 /kwən-aal-ak-at-w/
 long-hole-AF-3
 'it is a deep hole'

II verbs are formed with /-at/ preceded by a morpheme /-əkw-/, as in the examples in (2.113). The suffix /-əkw-/ has the same form as the 'inverse' theme sign which occurs in TA verbs (§2.2). However, I analyse it as a distinct suffix (see §3.2.1.3 for discussion). The same remarks made about the comparable AI stems formed with /-əsii/ apply here (§3.3.2.3).

(2.113)

- | | | |
|-----|---|--------------|
| (a) | / <u>n-aw-əkw-at</u> / | 'appearance' |
| | wəliinaakwat
/wəl-iin-aw-əkw-at/
good-appearance-inverse-AF
'it has a nice appearance' | |
| (b) | / <u>p-w-əkw-at</u> / | 'taste' |
| | wəliipookwat
/wəl-ii-p-w-əkw-at/
good-Ep-taste-inverse-AF
'it has a nice taste' | |
| (c) | / <u>ht-aw-əkw-at</u> / | 'sound' |
| | wəlihtaakwat
/wəl-i-ht-aw-əkw-at/
good-Ep-sound-inverse-AF
'it has a nice sound' | |

- (d) /-maa-əkʷ-at/ 'smell'

wəl:iməkʷat
 /wəl-ii-maa-əkʷ-at/
 good-Ep-smell-inverse-AF
 'it has a nice smell'

The list of II stems formed by adjoining the suffix /-at/ to roots is small (2.112a). It is difficult to discern any feature which the roots to which /-at/ is added have in common. I analyse the stems in (2.112a) as listed rather than derived. The productive final /-ee/ (§2.5.1.1) will then be blocked from being adjoined to these roots, by virtue of the existence of listed II stems with similar meanings. The suffix /-a:ɬ/ does attach without restriction to classificatory medials (2.112b). In the lexical entry for /-at/, the symbol 'XAf' is used as a cover term to refer to the affixes to which /-at/ attaches, as exemplified in (2.112b) and (2.113).

(2.114)

/-at/ 'state' [+V -N] XAf ____ x-[-animate]-Theme

2.5.1.3 /-an/

The II abstract final /-an/ forms a small number of II stative verbs, mostly stems which relate to taste (2.115a), and others which may be characterized as relating to physical qualities (2.115b). This final was not recorded in any II stems containing classificatory medials.

(2.115)

- (a) Taste

ahwan
 /ahw-an-w/
 intense-AF-3
 'it is strong in taste'

laxkan
/laxk-an-w/
bitter-AF-3
'it tastes bitter'

wiinkan
/wiink-an-w/
good-AF-3
'it tastes good'

(b) Physical Qualities

wšaaxan
/wəšaax-an-w/
slippery-AF-3
'it is slippery'

wšapan
/wəšap-an-w/
thin-AF-3
'it is thin (e.g. slice of bread)'

kohpakan
/kohpak-an-w/
thick (dimension)-AF-3
'it is thick (dimension)'

laankan
/laank-an-w/
light in weight-AF-3
'it is light in weight'

tahtakan
/tahtak-an-w/
thick-AF-3
'it is thick'

laanšihkan
/laanšihk-an-w/
heavy-AF-3
'it is heavy'

waapan
/waap-an-w/
white-II-3
'it is dawn'

The final /-an/ appears preceded by /-əkw-/, recorded only in a single II verb relating to taste, as an alternative form to /-əkw-at/, discussed in §2.5.2.1 above.

(2.116)

/p-w-əkʷ-an/ 'taste'

wəliipookwan
 /wəi-ii-pw-əkʷ-an/
 good-Ep-taste-inverse-AF
 'it has a good taste'

Since there appear to be only a small number of verb stems formed with /-an/, I analyse stems containing this final as listed, rather than derived by morphological insertion.

2.5.1.4 /-ən/

The II abstract final /-ən/ is added directly to roots to form a small number of verbs, including number predicates (2.117a), and a few others (2.117b).

(2.117)

(a) Numbers

niišənool
 /niiš-ən-w-al/
 two-AF-3-pl
 'they (IN) are two'

nxənool
 /nax-ən-w-al/
 three-AF-3-pl
 'they (IN) are three'

neewənool
 /neew-ən-w-al/
 four-AF-3-pl
 'they (IN) are four'

naalanənool
 /naalan-ən-w-al/
 five-AF-3-pl
 'they (IN) are five'

txənool
 /tax-ən-w-al/
 so many-AF-3-pl
 'they (IN) are so many'

(b) Others

askən
 /ask-ən-w/
 raw-AF-3
 'it is raw; green, not ripe (plant)'

This final /-ən/ also occurs following several prefinals (2.118). These combinations of prefinal and final form a large number of stems.

(2.118)

- | | | |
|-----|---|----------------|
| (a) | /at-ən/ | ‘cold’ |
| | kəlatən
/kəl-at-ən-w/
firmly-cold-AF-3
‘it freezes solid’ | |
| (b) | /ax-ən/ | ‘wind’ |
| | kɾaxən
/kəp-axən-w/
shut-wind-AF-3
‘it blows closed’ | |
| (c) | /iik-ən/ | ‘grow’ |
| | wəliikən
/wəl-iik-ən-w/
good-grow-AF-3
‘it grows nicely’ | |
| (d) | /x-ən/ | ‘lay, be’ |
| | ʃənkiixən
/ʃənk-ii-x-ən-w/
level-E ₇ -lay-AF-3
‘it lays down’ | |
| (e) | /əlaa-ən/ | ‘rain’ |
| | sookəlaan
/sook-əlaa-ən-w/
pour-rain-AF-3
‘it rains’ | |
| (f) | /əkikhkw-ən/ | ‘size, extent’ |
| | ləkikhkwən
/əl-əkikhkw-ən-w/
thus-size-AF-3
‘it is a certain size’ | |

I analyse /-ən/ as being subcategorized for the prefinals which occur in (2.118). I also analyse /-ən/ as being subcategorized for number roots (2.117a). Forms such as II askən 'be raw' (2.117b) which do not fall into either of these categories will be listed in the lexicon.

(2.119)

[-ən/	
[+V -N]	
{ X ^{AF} }	
{ X ⁻² } ---	
x-[-animate]-Theme	

2.5.1.5 /-ət/

The II abstract final /-ət/ forms a small number of II verbs. Examples after roots are given in (2.120a); examples after the classificatory medial /-eel-/ 'number' (§4.1.5) are given in (2.120b).

(2.120)

(a) Added to Roots

alət
/al-ət-w/
rot-AF-3
'it rots'

matət
/mat-ət-w/
bad-AF-3
'it is evil'

wələt
/wəl-ət-w/
good-II-3
'it is good'

(b) Added to Root And Medial

neeweeltool

/neew-eel-ət-w-al/

four-classifier-AF-3-pl

'they (IN) are four'

txeeltool

/tax-eel-ət-w-al/

so many-classifier-AF-3-pl

'they (IN) are in so many pairs'

xweeltool

/məx-eel-ət-w-al/

many-classifier-AF-3-pl

'they (IN) are many'

There does not appear to be any productive pattern whereby /-ət/ is suffixed to roots, hence the verb stems in (2.120a) will be listed rather than derived. In my data, the only medial which /-ət/ attaches to is the classificatory medial /-eel-/, which will be reflected directly in the subcategorization frame for /ət/.

(2.121)

[-əɪt/]	
[+V-N]	
[-eel-]	___
x-[-animate]-Theme	

APPENDIX TO CHAPTER II

A more extensive list of Animate Intransitive verbs stems formed with the AI suffix /-əsii/ (§2.4.2.1) is presented here.

aaptəsəw
/aapət-əsii-w/
to death-AF-3
'he is dead with sweat, heat'

ahwsəw
/ahw-əsii-w/
intense-AF-3
'he is stingy; he (animal) is shy'

akayihksəw
/kakayihk-əsii-w/
tease-AF-3
'he teases'

askaskwsəw
/askaskw-əsii-w/
green-AF-3
'he is green'

asksəw
/ask-əsii-w/
raw-AF-3
'he is raw'

čpwəsəw
/čəpw-əsii-w/
pointed-AF-3
'he is pointed'

hašaweesəw
/ahašawee-əsii-w/
square-AF-3
'he is square'

kaaxkašəsəw
/kaaxkaš-əsii-w/
rough-AF-3
'he is rough, coarse'

kšiixsəw
/kšii-x-əsii-w/
wash-AF-3
'he washes'

kata=weewsəw
 /kata=weew-əsii-w/
 want=know-AF-3
 'he is nosy, wants to know'

kiihiitsəw
 /kiihiit-əsii-w/
 injured-AF-3
 'he is sore, tender, aches (body part)'

kwəlapsəw
 /kwəlap-əsii-w/
 dented-AF-w
 'he is dented'

kwənoosəw
 /kwənoo-əsii-w/
 long-AF-3
 'he is long'

kwiiskwsəw
 /kwiiskw-əsii-w/
 noise-AF-3
 'he squeaks, creaks'

lxaawsəw
 /laxaaw-əsii-w/
 forked-AF-3
 'he is forked'

maamaalsəw
 /maamaal-əsii-w/
 striped-AF-3
 'he is striped'

moošakəsəw
 /moošak-əsii-w/
 bare-AF-3
 'he is bare (lacking hair, fur, feathers)'

moxkawəsəw
 /moxkaw-əsii-w/
 pierced (?) -AF-3
 'he is stuck (by thorn, sliver, burr, thistle)'

paksəw
 /pak-əsii-w/
 flat-AF-3
 'he is flat'

papsaksəw
 /papsak-əsii-w/
 spotted-AF-3
 'he is spotted, has spots'

pasəsəw
/pas-əsii-w/
split-AF-3
'he is split'

psakwsəw
/psakw-əsii-w/
sticky-AF-3
'he is sticky'

pxwiiskəsəw
/pəxiisk-əsii-w/
skinned-AF-3
'he is skinned, pulled off (blister, bedsore)'

piikwʂəsəw
/piikwəʂ-əsii-w/
bushy-AF-3
'he is ragged, bushy'

piimsəw
/piim-əsii-w/
diagonal-AF-3
'he leans to one side'

piisələsəw
/piisəl-əsii-w/
limp-AF-3
'he is weak'

pihkəwəsəw
/pihkəw-əsii-w/
numb-AF-3
'he is numb'

pihtawəsəw
/pihtaw-əsii-w/
doubled-AF-3
'he is in layers'

pooxpsəw
/pooxp-əsii-w/
delicate-AF-3
'he is delicate, fragile, delicate in health'

sasapsəw
/sasap-əsii-w/
spotted-AF-3
'he is spotted'

siinksəw
/siink-əsii-w/
angle-AF-3
'he is the outside angle or a corner'

šawəsəw
/šaw-əsii-w/
fatigue-AF-3
'he is weak'

šeexkaləsəw
/šeexkal-əsii-w/
naked-AF-3
'he is naked'

šiikaləsəw
/šiikal-əsii-w/
transparent-AF-3
'he is transparent'

tamaksəw
/tamak-əsii-w/
bend at a joint-AF-3
'he bends at a joint'

thəsəw
/tah-əsii-w/
cool-AF-3
'he is cold'

neew=pankeesəw
/neew=pankee-əsii-w/
four=in layers-AF-3
'he is in four slices'

waaksəw
/waak-əsii-w/
bent-AF-3
'he is bent'

waalsəw
/waal-əsii-w/
hole-AF-3
'he has a hollow, is concave'

wawtamsəw
/wawətam-əsii-w/
busy (redup)-AF-3
'he works slowly, to suit himself'

wčəlsəwak
/wčəł-əsii-w-ak/
wrinkled-AF-3-pl
'they are wrinkled'

wčəpələsəw
/wčəpəi-əsii-w/
crumpled-AF-3
'he is bunched up'

wčiiksəw
 /wəčiik-əsii-w/
 bump-AF-3
 'he has a lump'

wtaksəw
 /wətak-əsii-w/
 damp-AF-3
 'he is wet, damp'

wəyaksəw
 /wəyak-əsii-w/
 sufficient-AF-3
 'he is in abundance, there is plenty'

wčiipsəw
 /wəčiip-əsii-w/
 fit-AF-3
 'he has a fit'

CHAPTER III

SECONDARY VERB FORMATION

3.0 Introduction

Verbs may be formed by secondary derivation, that is, by adding suffixes to existing stems. Secondly derived verbs may be divided into two major types: (a) denominal verbs; and (b) verb stems derived from verb stems. The latter are usually intransitive verbs formed from transitive stems, with the exception of the TA verbs formed by adding /-htaw/ to AI stems (§3.2.4.1).

In §3.1 denominal verbs are discussed. In §3.2 verbs derived from verb stems are discussed. The argument structure of verb-forming suffixes is analysed. Many of the processes which form secondarily derived verbs are highly productive in that they form semantically compositional verb stems, usually with few restrictions on the attachment of particular affixes.

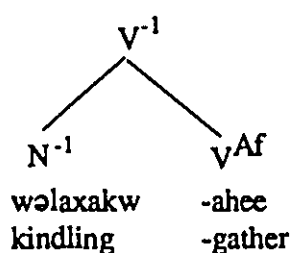
3.1 Denominal verbs

Denominal verbs are formed by adding suffixes to noun stems. The Word Structure Rule which generates most denominal verbs is given in (3.1). Suffixes which form denominal verbs are category changing morphemes, as is reflected in the rule (3.1).

$$(3.1) \quad V^{-1} \rightarrow N^{-1} V^{AI}$$

For example, AI verbs are formed by adding the suffix /-ahee/ 'make, gather' to nouns, as in /wəɫaxakw-ahee/ 'gather kindling' (§3.1.4). The structure of the resulting stems may be represented as in (3.2).

(3.2)



3.1.1/-ii/₁, /-ii/₂

Two distinct types of denominal verbs are formed by adding a suffix of the form /-ii/ to nouns. AI verbs denoting possession are formed by adding /-ii/ to noun stems preceded by a prefix /wə-/ (§3.1.1.1). Verbs of existence are formed by adding /-ii/ directly to noun stems (§3.1.1.2). Because these suffixes have different morphological properties I analyse them as two homophonous suffixes /-ii/₁ 'verb of possession', and /-ii/₂ 'equational'.

3.1.1.1 Verbs of Possession

Animate Intransitive 'verbs of possession' are productively formed by adding the suffix /-ii/₁ to noun stems which are marked with a prefix /wə-/. The status of this prefix will be discussed below. The resulting AI verb means 'have N', where 'N' is the noun stem upon which the verb is based. The intransitive verb which results from the suffixation of /-ii/ invariably has an animate subject, regardless of the gender of the noun to which it is attached. If the noun which serves as the base for the verb of possession normally occurs with the possessive suffix /-əm/ when forming a possessed noun, as in (3.3a-b) below, the verb of possession is based on this form (see §1.5.4 for a summary of noun inflection). Comparable data are also found in the formation of other denominal AI verbs formed with the suffixes /-ahamaa/ 'use' (§3.1.1) and /-iinee/ 'have an illness' (§3.1.6). Verbs of possession are inflected like any other AI verb stem.

In (3.3a) I give the singular forms for 'have money' in the independent indicative, based upon the noun stem /šəlpəl/ 'money'. In (3.3b-d) forms for verbs of possession are given based upon (3.3b) /kaal/ 'car' and the dependent nouns (3.3c) /-kwiisəs/ 'son', and (3.3d) /-taanəs/ 'daughter'. In the examples, /wə-/ is glossed as 'pre(fix)'. In some of the examples in (3.3), the prefix /wə-/ undergoes contraction to [-oo-] in derived stems inflected for first or second person (R18).

(3.3)

- (a) noošəlpələmi
/nə-wə-šəlpəl-əm-ii/
1-pre-money-poss-AI
'I have money'

koošəlpələmi
/kə-wə-šəlpəl-əm-ii/
2-pre-money-poss-AI
'you have money'

wšəlpələməw
/wəšəlpəl-əm-ii-w/
pre-money-poss-AI-3
'he has money'

- (b) nookaaləmi
/nə-wə-kaal-əm-ii/
1-pre-car-poss-AI
'I have a car'

- (c) nookwiissi
/nə-wə-kwiisəs-ii/
1-pre-son-AI
'I have a son'

- (d) nootaan'si
/nə-wə-taanəs-ii/
1-pre-daughter-AI
'I have a daughter'

The morpheme /-əm/ which appears in verbs of possession has precisely the same distribution in verbs of possession as it has in possessed nouns. It occurs only on certain possessed nouns; in verbs of possession it occurs in verb stems based upon nouns which

require /-əm/ when marked for possession. It is reasonable to propose that /-əm/ in verbs of possession is the possessive noun suffix.

The status of /wə-/ is less certain. It is clear that there is a prefix /wə-/ preceding the noun stems which appear in verbs of possession. The presence of /wə-/ is also supported by the contraction of underlying /-əwə-/ to [-oo-] in the first and second person forms, for example in (3.3a-d). Even when initial /wə-/ is regularly deleted before stem-initial non-coronal consonants (R31, R39), as in (3.4a) below, the presence of /wə-/ underlyingly is supported by contraction (3.4b, R18).

(3.4)

- (a) payaxkhiikanəw
/wə-payaxkahiikan-ii-w/
pre-gun-AI-3
'he has a gun'
- (b) noopayaxkhiikani
/nə-wə-payaxkahiikan-ii/
1-pre-gun-AI
'I have a gun'

In the Algonquianist literature, this prefix (and cognate prefixes in other Algonquian languages) is commonly identified as the third person prefix /wə-/ which occurs on nouns inflected for possession (§1.5.4), even though verbs of possession such as (3.4b) do not manifest the meaning 'third person'. The assumption that /wə-/ in verbs of possession is the third person prefix is likely based on the observation that Algonquian languages usually only have three prefixes which occur affixed to nouns. In Delaware these are: /nə-/ '1'; /kə-/ '2'; /wə-/ '3'. Analysing the prefix /wə-/ which occurs prefixed to nouns in verbs of possession as the person prefix /wə-/ '3' permits analysts to maintain that there is one prefix /wə-/ rather than two homophonous prefixes. The prefix /wə-/ in verbs of possession may have some diachronic connection with the third person prefix, but this is uncertain.

The formation of verbs of possession is a common Algonquian phenomenon. Sherwood (1983) discusses similar data from Maliseet, another Algonquian language; Bloomfield (1946: §68) reconstructed verbs of possession for Proto-Algonquian. The formation of verbs of possession in other Algonquian languages has been used to support the position that inflected forms must be available in the lexicon in order to form the input to derivational processes (Sherwood (1983)), since the prefix /wə-/ found in verbs of possession has been analysed as the third person inflectional prefix /wə-/. However, as noted above, the stems of verbs of possession do not manifest the meaning 'third singular' (except when inflected as third singular by suffixation of the inflectional ending /-w/, as in (3.4a)).

While the prefix /wə-/ in verbs of possession indicates that the noun is possessed, it does not indicate that it is possessed by a third person. As well, the morphosyntactic behaviour of verbs of possession suggests that the prefix /wə-/ found on these stems does not have the same properties as the third person possessive prefix /wə-/. Nouns which form the input to verbs of possession are not marked for obviation, an inflectional category which is obligatory in the appropriate syntactic contexts. For example, the noun stem /-taanəs/ 'daughter' is a dependent animate noun (DA). Normally, when this stem occurs in a construction with a third person possessor it is inflected for the category of obviation (3.5a). The obviative suffix /-al/ follows the possessive suffix /-əm/, if present.

(3.5)

- (a) wtaan'sal
/wə-taanəs-al/
3-daughter-obv
'his daughter (obv)'
- (b) wtaan'səw
/wə-taanəs-ii-w/
3-daughter-AI-3
'he has a daughter'

However, when this stem forms a verb of possession, even though the third person prefix /wə-/ is present, obviation is not marked (3.5b). The failure of the prefix /wə-/ to trigger marking for obviation suggests that it has different properties from the prefix /wə-/ which occurs in third person possessive constructions. Specifically, the prefix /wə-/ used in verbs of possession does not appear to contain the meaning 'third'. Rather, it marks the noun stem as 'possessive', without indicating person.¹

The lexical entry for the final /-ii/ is as in (3.6) below. The lexical entry reflects the properties of /-ii/ as discussed above. The suffix is specified as [+V, -N]; it is added to a noun stem which is marked as [+possessive]. Since the resulting verb is invariably animate in gender, /-ii/ will be specified for a subject which is [+animate].

(3.6)

<div style="display: flex; align-items: center; justify-content: center;"> <div style="font-size: 4em; margin-right: 10px;">[</div> <div style="text-align: center;"> /-ii/ [+V -N] [N⁻¹ _____] [+possessive] X-[+animate]-Agent </div> <div style="font-size: 4em; margin-left: 10px;">]</div> </div>

3.1.1.2 Equational Verbs

Other denominal intransitive verbs are formed by adding a suffix of the form /-ii/ to noun stems. These will be referred to as equational verbs. Equational verbs are generally translated as 'be x' or 'there is x'. Unlike the verbs of possession discussed in §3.1.1.1, there is no evidence that noun stems containing a prefix of the form /wə-/ constitute the input to the formation of equational verbs. The two instances of /-ii/ have distinct properties,

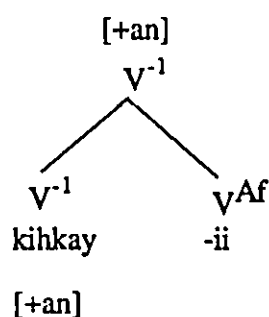
¹ What is presumably the same prefix /wə-/ is found in several nouns: w-siit-ahkw 'axe-handle' (prefix-foot-wood); and w-teeh-ii-m 'strawberry' (prefix-heart-berry).

which will be represented by analysing them as two separate suffixes. The suffix which forms equational verbs will be represented as /-ii/₂

When the suffix /-ii/₂ which forms equational verbs is added to an animate noun, the resulting denominal verb is usually Animate Intransitive (3.8a). Similarly, when the noun is inanimate, the resulting verb is usually Inanimate Intransitive (3.8b). Note that verbs of possession are always AI stems (§3.1.1.1), regardless of the gender of the nouns upon which they are based. The suffix /-ii/₂ is analysed as unspecified for the feature of gender ([±animate]). That is, there are two homophonous finals which have the form /-ii/, one specified for animate gender, which forms verbs of possession, and one unspecified for gender, which forms equational verbs.

Assuming that the final /-ii/₂ which forms equational verbs is unspecified for gender, the gender of the verb stem could be predicted if the gender feature of the non-head noun stem percolates to the Stem (V⁻¹) level, as in (3.7), in conformity with the percolation principles discussed in §1.5.1.

(3.7)



However, as will be discussed shortly, there are certain denominal verb stems formed with /-ii/ which do not have the same gender as their base nouns, including some which may be either Animate Intransitive or Inanimate Intransitive. I am uncertain as to the extent of this phenomenon.

Examples of /-ii/2 added to animate nouns, forming AI verbs, are listed in (3.8a); examples of /-ii/2 added to inanimate nouns, forming II verbs, are listed in (3.8b).

(3.8)

(a) Added to Animate Nouns

kih kayəw
/kih kay-ii-w/
chief-AF-3
'he is the chief, leader'

matahaapeewəw
/matahaapeew-ii-w/
bad, good for nothing man-AF-3
'he is a bad, good for nothing man'

miikwələw
/miikwələ-ii-w/
crybaby-AF-3
'he is a crybaby, weakling'

mataapeewəw
/mataapeew-ii-w/
thief-AF-3
'he is a thief'

monkiisəw
/monkiis-ii-w/
monkey-AF-3
'he imitates someone's behaviour'

kpəʃihkaweeni
/kə-pəʃihkaweən-ii/
2-nice person-AF
'you are a nice person'

lahkeewəw
/əlahkeew-ii-w/
certain type-AF-3
'he is a certain nationality, breed, make'

wiilpiiʒəw
/wiilpiiʒ-iiw/
louse-AF-3
'he is lousy'

(t) Added to Inanimate Nouns

eenta=asiiskəwiik
 /eenta=asiiskəw-ii-k/²
 where=mud-AF-3 (conj)
 'where there is mud'

mohkəw
 /mohkw-ii-w/
 blood-AF-3
 'it bleeds'

məkəyəw
 /məkəy-ii-w/
 scab-AF-3
 'it is scabby'

asənəw
 /asən-ii-w/
 stone-AF-3
 'there are stones'

kəlakiike
 /kələk-ii-k-ee/
 clock-AF-3 (conj)-subj
 'if it is a certain hour'

In certain cases what appears to be the suffix /-ii/₂ is added to consonant-final noun stems which are extended by the syllable /-oow-/.³ It is not clear what the significance of this extension is, as not all consonant-final noun stems are extended by /-oow-/. I take the position that the stems in (3.9) are not verbs of possession (§3.1.1.1), since the prefix /wə-/ which characterizes verbs of possession is not present. Examples (3.9a-c) are AI stems; examples (3.9d-g) are II stems.

(3.9)

- (a) nkoonoowi
 /nə-koon-oow-ii/
 1-snow-ext-AI
 'I am covered in snow, have snow on'

² The inflectional suffix /-k/ marks Inanimate Intransitive third person singular in the conjunct order.

³ Compare Bloomfield's discussion of cognate Proto-Algonquian stems, in which it is claimed that consonant-final nouns form equational verbs by suffixing *-əwī (Bloomfield (1946: §67)).

- (b) nəmiikwanoowi
/nə-miikwan-oow-ii/
1-feather-ext-AI
'I am covered in feathers, have feathers on'
- (c) kəwiixekaanooWi⁴
/kə-wiixekaan-oow-ii/
2 body hair-ext-AI
'you are hairy (on body, chest)'
- (d) ahkəyoowəw
/ahkəy-oow-ii-w/
earth-ext-II-3
'it is sandy'
- (e) ohkoowəw⁵
/ohkw-oow-ii-w/
maggot-ext-II-3
'there are maggots'
- (f) mələyoowəw
/mələy-oow-ii-w/
pus-ext-AF-3
'it is pus-filled, pussy'
- (g) ponkoowəw
/ponkw-oow-ii-w/
dust-ext-AF-3
'it is dusty'

In (3.10a), an AI verb is formed from an inanimate noun. The verb stem in (3.10b) was recorded both as an AI stem and as an II stem. The stems in (3.10) do not appear to be verbs of possession. As with the data in (3.9), the verb stems in (3.10) are not formed with a prefix /wə-/.

(3.10)

- (a) waniipakəw
/waniipakw-ii-w/
leaf-AI-3
'he (tree) is covered in leaves, there are leaves (on him)'

⁴ This stem was also recorded as an II, predicated of furniture. The noun wiixekaan 'body hair' is inanimate.

⁵ That this is an II stem is confirmed by the conjunct order form geli=ohkoowiiik 'because there are maggots', where the conjunct ending /-k/ indicates third person inanimate subject. This stem was not recorded as an AI stem.

- (b) kəwiixeekanoowi
 /kə-wiixeekan-oow-ii/
 2-body hair-ext-AI
 'you are hairy (on body, chest)'

It is unclear whether the stems in (3.9) and (3.10) are formed with the same suffix /-ii/₂ found in the examples given earlier in this section. If the verb-forming suffix in these examples were unspecified for gender, it would be expected that the gender of the noun to which it is added would determine the gender of the verb stem, according to the Percolation convention given in §1.5.1, which allows features to percolate from non-heads if the head is unspecified for the feature in question. This would account for the data in (3.8).

However, in examples such as (3.9e) and (3.10) the verb stem has a specification for gender opposite to that of the noun stem to which the verb-forming suffix is attached. The examples in (3.8a), which contain animate nouns, were only recorded as AI verbs, while the examples in (3.8b), which contain inanimate nouns, were only recorded as II verbs. It would be possible that there is a process similar to 'zero-derivation' in English; which converts the gender specification of certain verb stems. However, because of the fragmentary nature of my data in this area, I do not pursue this possibility here, and reserve this topic for future research.

3.1.2 /-aa/ 'possessive'

A large number of nouns are formed by adjoining noun stems to roots and to certain stems. The structure of nouns formed in this manner was briefly discussed in §1.3.2.4 and will be described in detail in Chapter VII. A root such as /wəsk-/ 'new, young' and a noun stem such as /mahkəsən/ 'shoe' may be combined to produce a stem wəskahksən 'new shoe'. Unlike other noun stems, these compound nouns do not form 'verbs of possession' by suffixation of /-ii/ to possessed noun stems (§3.1.1.1). AI stems denoting possession may be formed from compound nouns by suffixing /-aa/. This process forms derived verb stems without restriction.

(3.11)

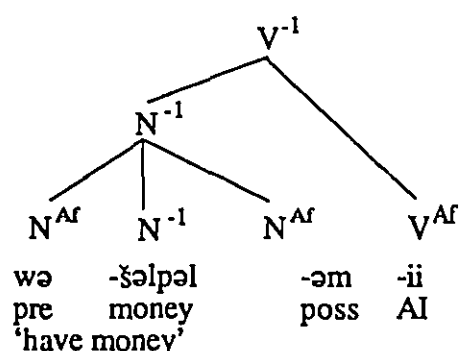
- (a) wəskahksən
'new shoe'

nooskahksəna
/nə-wəsk-ahkəsən-aa/
1-new-shoe-AI
'I have new shoes'
- (b) piilahksən
'clean shoe'

mpiilahksəna
/nə-piil-ahkəsən-aa/
1-clean-shoe-AI
'I have clean shoes'

The two means of forming denominal verbs denoting possession are in complementary distribution. The suffix /-ii/ is only attached to noun stems which are marked with the prefix /wə-/. The suffix /-aa/ only attaches to nouns formed by concatenating roots and stems. What are traditionally called verbs of possession are formed from nouns preceded by the prefix /wə-/ discussed in §3.1.1.1. The relevant tree structure for a typical verb of possession would be as in (3.12).

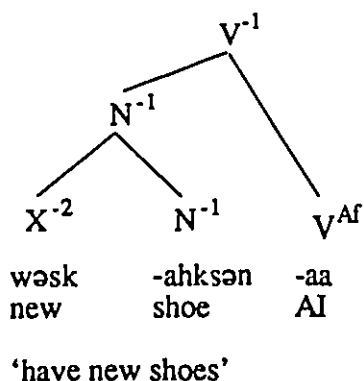
(3.12)



That is, the suffix /-ii/ subcategorizes for a noun stem which is marked as possessive.

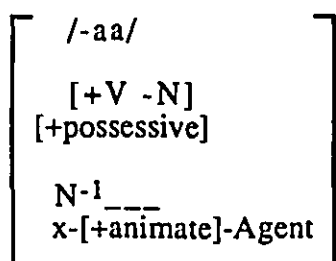
The possessive verbs formed with /-aa/ attach to compound noun stems of the type to be discussed in Ch. VII, which are formed with a root and a bound variant of a noun stem. That is, /-aa/ is also attached to a noun stem, as in (3.13) (recall that 'X-2' denotes acategorical roots (§1.6)).

(3.13)



As was the case with /-ii/, the suffix /-aa/ appears to subcategorize for a noun stem. The difference between the two types of verb stems may be accounted for by assuming that, in forming verbs of possession, /-ii/ attaches only to a stem which is marked as possessive, by the prefix /wə-/ or the possessive suffix /-əm/. In (3.12), the feature [+possessive] percolates to the N^{-1} level to become a feature of the noun stem. The suffix /-ii/ only attaches to noun stems marked as [+possessive], while the suffix /-aa/ will itself be marked as having a possessive meaning.

(3.14)



The suffixes /-aa/ 'possessive' and /-ii/ 'verb of possession' are in complementary distribution. This is accounted for in terms of the different lexical subcategorization requirements of the two suffixes.

The No Vacuous Affixation Principle (NVAP) proposed by Marantz (1984: 128) is relevant here. NVAP states that, for a given set of features, an affix may not be added to a base which has the same specification for the feature(s) in question. Marantz (1984) appears to intend for NVAP to apply primarily to inflectional affixation. If [\pm possessive] is one of the features which is subject to NVAP, an affix which is specified [\pm] for possession cannot be added to a unit which contains an identical specification for gender. Although the intent of NVAP is clearly to rule out multiple affixation of morphemes containing features which are specified for the same value, Marantz (1984: 128) notes that determining which features are subject to NVAP is not straightforward. Similarly, Baker (1988: 479) has noted that it appears arbitrary as to which features NVAP applies to.

In the case under discussion, the suffix /-aa/, which contains the specification [$+$ possessive] in its lexical entry, could not be added to a verb of possession, which is already marked for possession. Although this is a desirable result, NVAP would not rule out the suffixation of /-ii/ to possessive verbs formed with /-aa/. The lexical entry for /-ii/ does not contain a specification for the feature [\pm possessive]. Hence affixation of the suffix /-ii/ to a denominal verb formed with /-aa/ would not violate NVAP.

3.1.3 /-ahamaa/ 'use'

The final /-ahamaa/ 'use' may be added to noun stems which denote concrete objects, to form AI verbs. The resulting verbs are semantically compositional. The initial vowel of the suffix is frequently deleted by R28; the vowel of the second syllable is frequently weakened to /-ə/ and deleted by R35.

(3.15)

nehnayoonsahma
 /nə-nehnayoonsahma-ahamaa/
 1-horse-use
 'I use a horse'

nətaaktəlhama
 /nə-nətaaktəlhama-ahamaa/
 1-doctor-use
 'I am treated by a doctor'

heemptahmcew
 /aheempət-ahamaa-w/
 shirt-use-3
 'he wears a shirt'

tihtəyaakhameew
 /tihtəyaak-ahamaa-w/
 ring-use-3
 'he wears a ring'

ʒkəphameew
 /ʒəkəp-ahamaa-w/
 cards-use-3
 'he plays cards'

tələmpameew
 /tələmp-ahamaa-w/
 Jew's harp-use-3
 'he plays Jew's harp'

nsəkii=koothameew
 /nəsəkii=koot-ahamaa-w/
 black=coat-use-3
 'he wears a black coat'

kaalhameew
 /kaal-ahamaa-w/
 car-use-3
 'he uses a car'

The suffix /-ahamaa/ has the lexical entry given in (3.16).

(3.16)

[-ahamaa/ 'use']
[+V-N]
[N-1 X-[+animate]-Agent]

Denominal verbs are also formed from stems which resemble dependent (obligatorily possessed) nouns, as in (3.17). These forms are similar to AI verbs of possession (§3.1.1.1) in that noun stems preceded by a prefix /wə-/ form the input to the affixation of /-ahamaa/.

(3.17)

- (a) wiipiithameew
/wə-ʔipiit-ahamaa-w/
pre-teeth-use-3
'he wears false teeth'
- (b) wəskiinčkwahmeew
/wə-skiinčkw-ahamaa-w/
pre-eye-use-3
'he wears eyeglasses'

The stems so formed may be inflected for number and person with the appropriate AI inflectional prefixes and suffixes, as in the independent order indicative paradigm for (3.17a), 'wear false teeth'.

(3.18)

nə-wiipiithama	'I wear false teeth'
kə-wiipiithama	'you ...'
wiipiithamee-w	'he ...'
kə-wiipiithama-hna	'we (inclusive) ...'
nə-wiipiithama-hna	'we (exclusive) ...'
kə-wiipiithama-hmwa	'you (pl.) ...'
wiipiithamee-w-ak	'they ...'

In the foregoing I have proposed that /-ahamaa/ is a single suffix which subcategorizes for noun stems. Synchronically, /-ahamaa/ acts as a single suffix with a particular meaning. However, it could also be analysed as containing three suffixes: the prefinal /-ah-/ 'by tool' (Ch. II), the TI1a theme sign /-am/, and /-aa/, an AI final which forms AI verbs from TI stems (§3.2.4.3). It could be argued that the AI verbs which contain these morphemes are formed by successively adding these three suffixes to noun stems, rather than, as I have assumed above, a single suffix /-ahamaa/.

An analysis in which there are three separate suffixes will be outlined here. The suffix /-ah-/ 'by tool' would be specified as subcategorizing for noun stems (N⁻¹), as well as roots (X⁻²). When forming transitive instrumental verbs, /-ah-/ only attaches to roots or sequences of root and medial (§2.1.1). The subcategorization frame for /-ah-/ must be complicated by permitting attachment to noun stems as well as to roots unspecified for grammatical category (§1.6). In my data, /-ah-/ never forms a TA or TI verb when attached to nouns. It would be necessary to account for why, when added to nouns, /-ah-/ is not followed by the TA final /-w/, nor can a TI verb be derived from the TA (as in §2.3.3). As well, if /-am/ is itself an AI final, as outlined in the analysis in §2.3.3, then it is not evident why /-am/ is followed by the final suffix /-aa/ in this stem type.

While the suffix /-ahamaa/ in the denominal AI verbs under discussion may have the same shape as the morphemes /-ah-/ , /-am-/ , and /-aa/, they do not have the same properties. Since /-ah-/ , /-am/, and /-aa/ always occur in a fixed sequence when added to nouns, I analyse this sequence of morphemes as having been lexicalized. By this I mean that, diachronically, what might have been three distinct suffixes are now treated as a unit. The categorial labels associated with the individual suffixes have been lost, with the result that a single categorial label, V^{Af}, dominates /-ahamaa/.⁶

⁶ Muysken (1981: 324) recognizes the effect of lexicalization upon hierarchical structure. See also the discussion of lexicalization in §5.0.1 and §7.2.

3.1.4 /-ahee/ 'make, gather'

The suffix /-ahee/ 'make, gather' is added to nouns to form Animate Intransitive verbs. This suffix appears to attach without restriction to virtually any concrete noun which denotes a product. The resulting AI stem is invariably semantically transparent. The initial vowel of the suffix is frequently deleted by R29.

(3.19)

wəɫaxakwaheew /wəɫaxakw-ahee-w/ kindling-make-3	'he makes kindling'
aʃiikanahew /aʃiikan-ahee-w/ sock-make-3	'she makes, knits socks'
wʃiixayaheew /wəʃiixay-ahee-w/ nest-make-3	'he makes a nest'
asanakoonʃəyaheew /asanakoonʃəy-ahee-w/ elderberry-gather-3	'he works in elderberries'
wʃeexakwaheew /wəʃeexakw-ahee-w/ wood chip-gather-3	'he gathers wood chips'
kwʃahteewheew /kwəʃahteew-ahee-w/ tobacco-make-3	'he works in tobacco'

This final has the lexical entry given in (3.20).

(3.20)

[-ahee/ 'make; gather']
[+V-N]
[N-1 ____]
X-[+animate]-Agent

In a few examples, /-ahee/ is added to a base which does not occur as a free noun stem.

(3.21)

- (a) waalheew
 /waal-ahee-w/
 hole-make-3
 'he digs a hole'
- (b) wiikheew
 /wiik-ahee-w/
 dwell-make-3
 'he builds a house'

Since these stems do not conform to the regular pattern by which stems containing /-ahee/ are formed, they will be listed in the lexicon, rather than derived by insertion of morphemes into word structure trees.

The final /-ahee/ preceded by the noun stem /-toon/ 'mouth' makes AI verbs of speaking. This formation is very productive. Although this sequence appears to consist of /-toon/ 'mouth' and /-ah-ee/ 'make, gather', the sequence of suffixes /-toon-ahee/ is invariably added as a unit to roots.

(3.22)

- niisktoonheew
/niisk-toon-ahee-w/
dirty-mouth-use
'he talks dirty'
- amattoonheew
/mamat-toon-ahee-w/
bad (redup)-mouth-use-3
- pasəkwtoonheew
pasəkw-toon-ahee-w/
get up from sitting-mouth-use-3
'he "testifies" at a religious meeting, in church'
- ehkwtoonheew
/ehkw-toon-ahee-w/
cease-mouth-use-3
'he stops talking'

aləmtoonheew
 /aləm-toon-ahce-w/
 away-mouth-use-3
 'he starts to speak'

wiittoonheew
 /wiit-toon-ahcc-w/
 accompany-mouth-use-3
 'he butts into the conversation'

3.1.5 /-hkee/ 'be a lot of'

The final /-hkee/ 'be a lot of' forms II verbs from animate and inanimate nouns. This suffix may be added to any noun stem. The resulting verb is always Inanimate Intransitive, regardless of the gender of the noun stem it is added to. The final /-hkee/ appears to be analogous to English verbs such as 'be raining', which take no arguments. The II verbs in (3.23a) are formed from animate nouns; those in (3.23b) are formed from inanimate nouns.

(3.23)

(a) Added to Animate Nouns

lənəwihkeew
 /ələnəw-ii-hkee-w/
 man-Ep-be a lot-3
 'there are a lot of men'

mihtkwihkeew
 /mihtəkw-ii-hkee-w/
 tree-be a lot-3
 'there are a lot of trees'

kaawənšihkeew
 /kaawənš-ii-hkee-w/
 thorn-be a lot-3
 'there are a lot of thorns'

meenkeewihkeew
 /meenkweew-ii-hkee-w/
 Oneida Indian-Ep-be a lot-3
 'there are a lot of Oneidas'

ašiiikwiihkeew
 /ašiiikw-ii-hkee-w/
 woodtick-Ep-be a lot-3
 'there are lots of woodticks'

alaankweewihkeew
 /alaankweew-ii-hkee-w/
 star-Ep-be a lot-3
 'there are lots of stars out'

mooškiinkwihkeew
 /mooškiinkw-ii-hkee-w/
 rabbit-Ep-be a lot-3
 'there are several rabbits'

škaakwsihkeew
 /škaakwəs-ii-hkee-w/
 skunk-Ep-be a lot-3
 'there are several skunks'

pokwsihkeew
 /pokwəs-ii-hkee-w/
 bedbug-Ep-be a lot-3
 'there are several bedbugs'

eespanihkeew
 /eespan-ii-hkee-w/
 raccoon-Ep-be a lot-3
 'there are several raccoons'

(5) Added to Inanimate Nouns

miixaskwihkeew
 /miixaskw-ii-hkee-w/
 grass-Ep-be a lot-3
 'there are a lot of weeds'

wiikwahmihkeew
 /wiikwahm-ii-hkee-w/
 house-Ep-be a lot-3
 'there are several houses'

asənihkeew
 /asən-ii-hkee-w/
 stone-Ep-be a lot-3
 'there are several stones'

The lexical entry of this final is as in (3.24).

(3.24)

/-hkee/ 'be a lot of' [+V -N] [N-1 ____
--

There are a few examples of /-hkee/ added to sequences of morphemes which do not occur freely. Example (3.25a) appears to be based upon a non-occurring noun stem */səpwihətəkʷ/, which itself is an instance of the pattern of noun stem formation to be discussed in detail in Chapter VII, and mentioned briefly in §3.1.1, according to which a root and a noun stem are combined. In this case the root is /səpw-/ 'closed tightly', followed by the bound noun stem /-ihətəkʷ/ 'tree'. The putative noun stem *spwihətəkʷ is rejected by the speakers I have consulted.

In (3.25b) /-hkee/ is suffixed to a sequence /laaw-askw-/ 'middle of the grass' which does not occur as a noun stem, although there is a locative particle laawaskwe 'middle of the grass'.

(3.25)

- (a) spwihkwihkeew
 /səpw-ihətəkʷ-ii-hkee-w/
 closed-tree-Ep-be a lot-3
 'there are a lot of thick/dense trees, a dense forest'
- (b) laawaskwihkeew
 /laaw-askw-ii-hkee-w/
 middle-grass-Ep-be a lot-3
 'it is in the middle of the grass'

I analyse these stems as being listed in the lexicon, rather than derived by morphological insertion, since in both, the suffix /-hkee/ appears to be added to a stem which does not occur in other forms. By analysing the stems in (3.25) as being listed in the lexi-

con, it is not necessary to explain the non-occurrence of the putative noun stems upon which they are based.

3.1.6 /-iinee/ 'have an ailment'

The final /-iinee/ 'have an ailment' forms AI verbs. Most commonly, this final is added to nouns which denote parts of the body. Noun stems which denote parts of the body are usually dependent (obligatorily possessed) nouns marked with a prefix /wə-/ (3.26a). The stems may then be inflected as AI verbs. The prefix /wə-/ which occurs in these forms has the same characteristics as the prefix /wə-/ which is found in the AI 'verbs of possession' (§3.1.1.1). Accordingly the prefix /wə-/ which occurs in AI verbs formed with /-iinee/ is analysed as being the same prefix as occurs in verbs of possession.

(3.26)

wəskiinčkwiiineew /wə-skiinčəkw-iinee-w/ pre-eyes-sore-3	'he has sore eyes'
wiiliineew /wə-iil-iinee-w/ pre-head-sore-3	'he has a headache'
waawiikaniineew /wə-aawiikan-iinee-w/ pre-back-sore-3	'he has a sore back'
wihkaatiineew /wə-hkaat-iinee-w/ pre-leg-sore-3	'he has an aching leg'
wteehiineew /wə-teeh-iinee-w/ pre-heart-sore-3	'he has heart trouble'
wihtawakiineew /wə-htawak-iinee-w/ pre-ear-sore-3	'he has a sore ear'
wateeneew /w-atee-nee-w/? pre-belly-sore-3	'he has stomach flu'

⁷ The stem /-atee/ 'belly' is a variant of the dependent noun stem /-atay/ 'belly'; it also occurs in forms such as /waas-atee-nee/ 'lay prone, on one's belly'.

kwəntaakaniineew
/kwəntaakan-iinee-w/
throat-sore-3

'he has a sore throat'

The lexical entry for this final is as in (3.27) below. I analyse this suffix as subcategorizing for a noun stem, which is marked [+possessive]. The possessive feature found on nouns to which /-iinee/ attaches is due to the presence of the prefix /wə-/.

(3.27)

<div style="display: flex; align-items: center; justify-content: center;"> <div style="font-size: 4em; margin-right: 10px;">[</div> <div style="text-align: left; padding-right: 10px;"> /-iinee/ 'have an ailment' [+V -N] N-1 ___ [+poss] X-[+animate]-Theme </div> <div style="font-size: 4em; margin-left: 10px;">]</div> </div>
--

The final /-iinee/ is also found in a number of forms where it does not manifest the pattern listed above. In (3.28a), /-iinee/ appears following a root /šiikw-/ 'alone, abandoned'; in (3.28b), /-iinee/ appears following a root /sihtan-/ which was not recorded in any other stems; in (3.28c) /-iinee/ is added to a root /ləmətiis-/ based on the English word 'rheumatism'. One instance of /-iinee/ added to an AI verb stem, /xwəkw-/ 'cough', was recorded (3.28d).

(3.28)

- | | | |
|-----|------------------|---|
| (a) | šiikw-iinee-w | 'he is an orphan, has lost his parents' |
| (b) | sihtan-iinee-w | 'he has a runny nose' |
| (c) | ləmətiis-iinee-w | 'he has rheumatism' |
| (d) | xwəkw-iinee-w | 'he has a disease of coughing' |

Since these stems appear to represent irregular patterns, I analyse them as being listed rather than derived by morpholexical insertion.

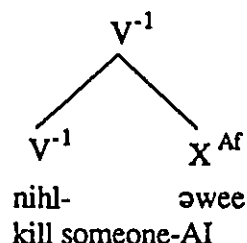
3.2 Verbs Derived From Verb Stems

Verbs may be formed in secondary derivation by adding suffixes to verb stems. For example, AI verb stems are formed from certain TA verbs stems by suffixation of /-əwee/, as in /nihil-əwee/ 'kill people, murder', which is formed from the TA stem /nihil-/ 'kill someone'. The relevant Word Structure Rule is as in (3.29). The suffixes which form stems from transitive verbs do not need to be specified for grammatical category, which is always determined by the stem to which the suffix is added. Accordingly the suffix in (3.29), which is represented as X^{Af} , is unspecified for category.

(3.29) $V^{-1} \rightarrow V^{-1} X^{Af}$

This rule will generate tree structures of the type in (3.30), which are representative of this type of verb.

(3.30)



3.2.0 Argument Structure of Secondarily Derived Verbs

In §2.1 I discussed the argument structure of verb stems which are formed in primary derivation, in which the argument structure of the stem is entirely dependent upon the argument structure of the morphemes which occur in the verb stem. In secondary derivation, affixes are added to verb stems which are already specified as having an argument structure, leading to the possibility that some affixes which are added in secondary derivation could affect the argument structure of the stems to which they are added.

The argument structure of the denominal verbs discussed in §3.1 may usually be accounted for in a straightforward manner, since in most cases the verb-forming suffix adds a single argument, usually an Agent or a Theme, to a noun whose lexical entry is not specified for argument structure. The argument structure of verb stems which are derived from existing verb stems is more complex. There are several verb suffixes which are added to transitive verb stems, forming intransitive stems. The verb stems which result from suffixation of these finals are morphosyntactically intransitive. They are usually classified as AI verbs, or more rarely, as II verbs. Therefore, the argument structure of the input (transitive) stems is affected by the attachment of the suffixes to be discussed here.

The 'argument reducing' suffixes which derive intransitive verb stems from transitive verb stems may be divided into three main groups: (1) unspecified/indefinite object suffixes (§3.2.1); (2) passive suffixes (§3.2.2); (3) 'middle' and other detransitivizing suffixes (§3.2.3). The verbs formed with passive and middle suffixes have certain characteristics in common. In particular, in both types of verbs, an underlying object appears to correspond in some respects to a surface subject, as will be discussed in §§3.2.2 and 3.2.3. The only verb final added to a verb stem which adds an argument, apart from the TA+O suffixes (§2.2.2), is /-ht-aw/, which will be discussed in §3.2.3.

3.2.1 Unspecified/Indefinite Object

Certain intransitive verb stems which appear to be based upon transitive verb stems are traditionally said to make reference to an indefinite or unspecified object. The resulting stem is inflected as an Animate Intransitive verb. For example, in (3.31), the intransitive verb škwahiikeew 'he crushes, pounds things' is based upon the Transitive Inanimate verb stem /šəkwah-/ 'crush something'.

(3.31)

škwahiikeew
/šəkw-ah-iikee-w/
crush-by tool-AI-3
'he crushes things, pounds'

The null object of the intransitive stem is sometimes translated as 'people' or 'things'. In this respect, indefinite object stems are comparable in their interpretation to English verbs which are said to have a deleted indefinite object: John eats. The null direct object appears to have an 'arbitrary' interpretation, implying that John eats some unspecified type of food.

It is necessary to determine whether the unspecified object found in the representation of some Delaware verbs is syntactically 'real', albeit non-overt. It has been proposed that in English, certain phonologically null arguments are syntactically present, since they, for example, serve as controllers of purpose clauses (Roeper (1987)), as in (3.32), where the implied agent of the matrix clause passive verb controls the subject position of the subordinate clause.

(3.32) The boat was sunk to collect the insurance.

Data of this type are usually interpreted as signifying that there is a phonologically null implicit argument which corresponds to the underlying subject of the matrix clause. Similarly, Rizzi (1986) has argued that in Italian null objects are syntactically real, since they act as controllers in certain constructions. Rizzi also argues that while there are some null object constructions in English, they do not support the postulation of implicit arguments. I am not aware of any Delaware data which would motivate postulating implicit arguments for indefinite object verbs. In the absence of the relevant kind of data, I assume that the indefinite or unspecified object is entirely absent, and does not form a part of syntactic representation.

Piggott (1989: 25-26) has proposed that the cognate indefinite object suffixes in Ojibwa have the property of 'absorbing' a thematic role, that is, "certain affixes clearly have the power to prevent arguments from transmitting their theta-roles to NPs" (Piggott (1989: 26)). 'Absorption' is a theoretical construct which Piggott explicates as affecting a

predicate's ability to assign its thematic role to an NP. Absorption is discussed in Chomsky (1981), where it is proposed that certain affixes, such as the English passive suffix have the property of 'absorbing' Case assigned by the verb. Jaeggli (1986: 591) refined the concept of absorption by proposing that it is "identical to what is typically called feature assignment." For instance, the passive affix 'absorbs' the external thematic role of a predicate by having the external thematic role assigned to it. Absorption may be defined as "assignment to a bound morpheme. This entails that features may be assigned to affixes in the syntax as long as principles such as the Projection Principle are satisfied" (Jaeggli (1986: 592)). Hence, absorption is analysed as the assignment of thematic roles to particular affixes.

Baker (1988: Ch. VI) has extended Jaeggli's analysis by proposing that affixes which have thematic roles assigned to them are true nominal arguments, and therefore must be assigned thematic roles, in order to satisfy the Theta-Criterion. For example, Baker proposes that passive morphemes (in English and other languages) are nominal elements and must be assigned a thematic role by the Theta Criterion. Since the passive morpheme is an external argument it should be assigned the same thematic roles as other external arguments.

Rizzi (1986) has discussed the analysis of null objects which require an arbitrary interpretation in languages in which there is no evidence for an 'implicit' argument in the position of a direct object. Rizzi (1986: 508) proposes that there is a "lexically governed device preventing the syntactic projection of an understood theta-role". Rizzi notes that the thematic roles associated with a verb require 'saturation'. That is, thematic roles must be associated with referential content. Normally, saturation occurs syntactically, since thematic roles are associated with particular structural positions (in accordance with the Projection Principle), which in turn are filled with appropriate lexical material (in accordance with the Theta-Criterion). Rizzi proposes that there is another type of saturation which may take place in the lexicon, by the assignment of 'arb', the features associated with arbitrary inter-

pretation, to the direct object's thematic role. Assignment is achieved by rule (3.33) (Rizzi (1986: 509)).

(3.33) Assign *arb* to the direct theta-role.

The term *arb* refers to the features associated with arbitrary interpretation, such as [\pm human, \pm generic, \pm plural]. These features are assigned to, or associated with, the direct object's thematic role. Rizzi (1986: 509) proposes that rule (3.33) is a "lexically governed process applying in the lexicon, prior to the Projection Principle. Its application amounts to saturating the internal θ -role in the lexicon: the carrier of this θ -role will be understood as have the properties defining *arb*...We can now think of the Projection Principle as operating solely on lexically unsaturated θ -roles."

In sum, Rizzi proposes that there are two mechanisms by which saturation of thematic roles takes place. One type of saturation is syntactic, while the other is lexical. In the case of lexical saturation, Rizzi notes that if rule (3.33) "saturates the object θ -role in the lexicon, there is no structurally projected position; the θ -role is "understood" because it is still part of the lexical meaning, which is unaffected, but remains syntactically "inert." The limited referential content of the null object is provided by the features which are associated with arbitrary interpretation.

Rizzi proposes that the features associated with arbitrary interpretation are assigned by rule, and that the application of the rule is lexically governed (Rizzi (1986: 509)). That is, application of the rule would be triggered by particular verb stems.

In the following sections I propose that Rizzi's analysis may be extended to account for the properties of indefinite object verb stems in Delaware, as well as being relevant for the analysis of lexical passive and 'middle' verb forms. Affixation of the Delaware indefinite object affixes /-əwee/ and /-kee/ is productive. The resulting intransitive verb stems have a null object. These suffixes trigger the assignment of arbitrary interpretation to the

thematic role of the direct object (y-argument). Assignment of arbitrary interpretation will lexically saturate the y-argument, which will not be projected.

Returning to the indefinite object forms in Delaware, the characteristics of these verb stems are: (1) addition of the appropriate affix to a TA or TI stem; (2) assignment of arbitrary interpretation features to the y-argument (object). Hence, unlike the English passives, the Delaware indefinite object forms do not show that it is the subject (external argument) which has been affected by suffixation, but rather the object.

3.2.1.1 /-əwee/ 'unspecified or indefinite animate object'

Animate Intransitive verbs are derived from TA verbs by suffixation of /-əwee/. These forms have an unspecified or indefinite animate object, but are morphosyntactically intransitive, that is, are inflected as AI verbs. The null object appears to be unspecified for number. Bloomfield (1958: 79) describes the Ojibwa cognate of this suffix as forming "AI verbs of action on indefinite persons". However, some Delaware examples which I recorded were predicated of animate non-humans. Hence the broader characterization is appropriate.

In all examples recorded, /-əwee/ occurs after TA stems ending in /-h/, /-l/, /-əš-w/, /-x/. Some TA stems formed with the final /-l/ form derived unspecified object intransitives with /-kee/, as do TA stems ending in /-n/ or /-m/ (§3.2.1.2).

(3.34)

(a) TA Stem With Final /-h/ 'cause'

akayihkiihəweew
/kakayihk-ii-h-əwee-w/
tease (redup)-Ep-caus-AI-3
'he teases people'

wseexeekawiihəween⁸
/wə-seexeekaw-ii-h-əwee-n/
3-whip-Ep-caus-AI-3
'he whips people'

⁸ This stem was recorded only in the subordinate mode, that is, inflected with prefix /wə-/ and suffix /-ən/. See §2.2.0 for discussion of Delaware clause types.

kiikeehəweew
/kiikee-h-əwee-w/
cure-caus-AI-3
'he cures people'

ntəmiihəweew
/natəm-ii-h-əwee-w/
lend-Ep-caus-AI-3
'he lends'

(b) TA Stems Ending in /-l/

wiišaləweew
/wiišal-əwee-w/
frighten someone-AI-3
'he scares people'

nihləweew
/nihl-əwee-w/
kill someone-AI-3
'he murders'

wehwehm(w)aaləweew
/wehwehm(w)aal-əwee-w/
make fun of someone-AI-3
'he makes fun of people'

šiinkaaləweew
/šiinkaal-əwee-w/
hate someone-AI-3
'he hates people'

pooləweew
/pool-əwee-w/
escape from someone-AI-3
'he escapes, flees'

lalxawooləweew
/lalʔxawool-əwee-w/
take risk-AI-3
'he bothers people'

(c) TA Stem Ending in /-x/

nkwxəwe
/nə-kwax-əwee/
1-fear someone-AI
'I am afraid of people'

(d) TA Stems Ending in /-əš-w/ 'cut'

paxkšəweew
/paxk-əš-w-əwee-w/
burst-cut-TA-AI-3
'he cuts up animate entities'

moonšəweew
 /moon-ʃ-w-əwee-w/
 extract-cut-TA-AI-3
 'he cuts people's hair'

One AI stem was recorded which appears to be formed with /-əwee/ added to a non-occurring TA stem formed with the final /-h/ 'causative'. This stem is analysed as being listed in the lexicon, rather than derived by morphological insertion.

(3.35) wiičoooh-əwee-w 'he participates in an activity'

In the stem in (3.35) I analyse /-əwee/ as being added to TA stems which do not occur in any other forms. That is, in these words, /-əwee/ occurs after bound stems.

The suffix /-əwee/ subcategorizes for certain TA finals. Although /-əwee/ forms verb stems, it is not specified for grammatical category, as the derived AI stem receives its specification for grammatical category from the TA stem to which the suffix is added. The lexical entry for this final is given in (3.36).

(3.36)

$\left[\begin{array}{l} /-əwee/ \\ V^{-1} \text{ —} \end{array} \right]$

The lexical entry for /-əwee/ will state that it attaches only to stems specified for a direct object (y-argument). As discussed in §3.2.1, the characteristics of stems formed with /-əwee/ are accounted for by proposing that this suffix adds 'arbitrary interpretation' features to the y-argument of a TA stem. These features include [+generic, ±number]. As discussed earlier, I am assuming that the null object stems formed with /-əwee/ may refer to any entity which is specified [+animate]. Since this argument is specified as animate, the

stem is inflected as an AI stem. The assignment of the thematic relation of the y-argument to the suffix does not affect the gender ([+animate]) of this argument. The retention of the feature for gender permits the interpretation of the unspecified argument as animate.

3.2.1.2 /-kee/ 'unspecified or indefinite object'

This final forms derived indefinite or unspecified object AI verbs from TI stems, as well as from certain TA stems. The null object is unspecified for number. When added to TI stems, the null object receives a [-animate] interpretation, reflected in the conventional translation 'things'. When added to TA stems, the null object receives a [+animate] interpretation, which is reflected in the conventional translation 'people'.

Epenthetic /-ii/ is inserted when the preceding morpheme ends in a non-nasal consonant or /-n/; stems ending in /-m/ do not undergo epenthesis. Although TA stems usually form derived indefinite object AI stems by suffixing /-əwee/ (§3.2.1.1), TA stems ending in /-m/ form indefinite object AI stems by suffixing /-kee/, as do some but not all TA stems ending in /-l/. For a discussion of the distribution of the detransitivizing finals on TA stems, see §3.2.2.1.

Examples of /-kee/ added to TI stems are listed in (3.37).

(3.37)

- | | | |
|-----|---|-------------------|
| (a) | <u>TI Stem Ending in /-ah-/</u> | 'by tool' |
| | awəleekhiikeew
/wawəl-eek-ah-ii-kee-w/
good (redup)-sheetlike-by tool-Ep-AI-3
'he writes well' | |
| | pawiinkweehiikeew
/paw-iinkwee-ah-ii-kee-w/
brush-face-by tool-Ep-AI-3
'he sifts' | |
| (b) | <u>TI Stem Ending in /-əš-/</u> | 'by cutting edge' |
| | aniiskšiikeew
/naniisk-əš-ii-kee-w/
dirty (redup)-by cutting-Ep-AI-3
'he makes a mess while cutting' | |

- (c) TI Stem Ending in /-əs-/ 'by heat'
- naxkwsiikeew
 /naxkw-əs-ii-kee-w/
 ablaze-by heat-Ep-AI-3
 'he sets things on fire'
- (d) TI Stem Ending in Final /-x-t/ 'lay/be'
- waasəleextiikeew
 /waasəlee-x-t-ii-kee-w/
 shine-cause-TI-Ep-AI-3
 'he shines/polishes things'
- (e) TI Stem Formed With Finals Ending in /-t/
- sookpatiikeew
 /sok-əp-at-ii-kee-w/
 pour-water-TI-Ep-AI-3
 'he soaks things'
- pootaatiikeew
 /poot-aat-ii-kee-w/
 blow-TI-Ep-AI-3
 'he blows'
- (f) TI Stems Ending With /-ən/ 'by hand'
- pawəniikeew
 /paw-ən-ii-kee-w/
 brush-by hand-Ep-AI-3
 'he sifts'
- piikəniikeew
 /piik-ən-ii-kee-w/
 crumble-by hand-Ep-AI-3
 'he shreds things'

Certain TA stems appear to form derived AI stems by adding /-kee/. These include TA stems ending in /-m/ (3.38a), and certain TA stems ending in /-l/ which add /-kee/ directly to the TA stem without epenthesis (3.38b); stem-final /-l/ is neutralized with /-h/ (R1). It could be claimed that these stems are formed with a distinct homophonous suffix; however there is little synchronic motivation for an analysis which proposes that there are two suffixes of the form /-kee/.

(3.38)

(a) TA Stems Ending in /-m/

xankeew
 /axam-kee-w/
 feed-AI-3
 'he feeds people'

akəniinkeew
 /akəniim-kee-w/
 talk to someone-AI-3
 'he talks about people'

akehkiinkeew
 /akehkiim-kee-w/
 teach someone-AI-3
 'he teaches'

(b) TA Stems Ending in /-l/

naawahkeew
 /naav/al-kee-w/
 follow someone-AI-3
 'he follows people'

pahčohkeew
 /pahčool-kee-w/
 heat someone-AI-3
 'he cheats'

kwihtihkeew
 /kwihtəl-kee-w/
 advise-AI-3
 'he advises against a course of action'

mpənoontihkeen
 /nə-pənoontəl-kee-n/
 I-display-AI-3
 'I display/show it [someone/something of importance]; display/show my feelings'

The final /-kee/ is also added to certain TA+Object verbs formed with /-aw/.

(3.39)

- (a) nooliixtaakeen⁹
 /nə-wəl-ii-x-t-aw-kee-n/
 I-good-Ep-caus-TI-TA+O-AI-3
 'I get someone, something fixed'

⁹ This stem is inflected as an AI+O verb (§2.2.2).

/wəliixtaw-/
 'fix someone, something for someone'

- (b) mahlamaakeew
 /mahl-amaw-kee-w/
 buy-TA+O-AI-3
 'he buys'

/mahlamaw-/
 'buy someone, something for someone'

A suffix of the form /-kee/ appears to be added to certain TA verbs formed with TA /-kw-(aa)l/, whose corresponding TI is formed with a morpheme /-kw/. In the corresponding AI stems, /-l/ appears to be deleted when followed by the suffix /-kee/. Compare the 'derived' AI stems in (3.40a-b) with the TA stems upon which they are based. The TA final /-l/ also appears to be deleted in certain other environments, such as before /-sii/ 'middle reflexive' (§3.2.3.2) (for comments on related noun stems, see §6.1.2). The analysis of these forms is uncertain.

(3.40)

- (a) paptək-ii-kwaa-kee-w
 crooked-Ep-sew-AI-3
 'he sews crooked'

/paptək-ii-kwaa-l-/
 'sew someone crooked' (TA)

- (b) čan-ii-kwaa-kee-w
 error-Ep-sew-AI-3
 'he makes an error in sewing'

/čaniikwaa-l-/
 'make an error in sewing someone' (TA)

The attachment of /-kee/ has the same effect as the attachment of /-əwee/ (§3.2.1.1). The only apparent difference between the two suffixes is that /-kee/ attaches primarily to TI stems, and to a restricted class of TA stems, those ending in /-m/ or /-l/.

The lexical entry for /-kee/ is as in (3.41). Since /-kee/ always attaches to verb stems, deriving a verb stem, it is not necessary to include a specification for grammatical category in the lexical entry of this suffix.

(3.41)

$$\left[\begin{array}{c} /-kee/ \\ V-1 \text{ —} \end{array} \right]$$

The suffix /-kee/ adds ‘arbitrary interpretation’ features to the y-argument of TI stems and certain TA stems. These features include [+generic, ±number]. As a result, the y-argument of these stems is lexically saturated and will not project an argument position. As noted, when /-kee/ is added to TI stems the null object receives a [-animate] interpretation, reflected in the conventional translation ‘things’. When added to TA stems, the null object receives a [+animate] interpretation, which is reflected in the conventional translation ‘people’. That is, the gender specification of the direct object (y-argument) is not affected by the affixation of /-kee/.

3.2.1.3 /-əsii/ ‘unspecified/indefinite object’

Transitive Animate and double object (TA+O) stems formed with the final suffix /-aw/ form AI stems referring to an indefinite or unspecified object by adding /-əsii/. The sequence /-aw-ə/ contracts to [-aa-] (R17).

(3.42)

(a) TA Stems Ending in Final /-aw/

ʃiinkiinaasəw
/ʃiinkiinaw-əsii-w/
dislike the looks of someone-AF-3
‘he’s hateful, dislikes people’

čpiinaasəw
/čəpiinaw-əsii-w/
separate by sight-AF-3
‘he “makes strange” (baby), can tell the difference between people’

pənaasəw
/pənaw-əsii-w/
look at someone-AF-3
'he looks on'

(b) TA+O Stems Formed With Final /-aw/

noolah̄taasi
/nə-wəlahtaw-əsii/
1-store for someone-AF-3
'I put things away'

wəliix̄taasəw
/wəliix̄taw-əsii-w/
fix for someone-AF-3
'he fixes things'

ʃihkwih̄taasəw
/ʃihkwih̄taw-əsii-w/
take away by force-AF-3
'he robs, takes things from people by force'

nəlooh̄maasiin
/nə-t-əlooh̄maw-əsii/
1-Ep-show to someone-AF-3
'I show it' (AI+O)

nəwanoht̄aasi
/nə-wanoht̄aw-əsii/
1-hide from-AF-3
'I hide'

Only a small number of TA stems were recorded which form indefinite object intransitives by adding /-əsii/, which otherwise is used only in primary derivation (§2.4.2.1). Most TA stems form intransitives with indefinite or unspecified reference by suffixing /-əwee/ (§3.2.1.1) or /-kee/ (§3.2.1.2).

3.2.2 Lexical Passive Suffixes

There are several suffixes, or sequences of suffixes, which are added to transitive verb stems, deriving intransitive verb stems which have a passive interpretation. I analyse these as 'lexical' passive verb stems whose underlying subject has no surface realization. That is, there is no evidence for an 'implicit' argument of the type discussed in §3.2.1.

Lexical passive verbs are formed by adding derivational suffixes to transitive verb stems, deriving intransitive verb stems. Syntactic passive verbs are formed by adding the inflectional suffixes referred to as TA theme signs to TA verb stems, as in (3.43).

(3.43)

neewaaw
/neew-aaw-w/
see someone-direct-singular
'he is seen'

neewke
/nə-neew-əkee/¹⁰
1-see someone-inverse
'I am seen'

kəneewke
/kə-neew-əkee/
2-see someone-inverse
'you are seen'

Goddard (1979a: 120) reviews some syntactic evidence from the closely related Unami Delaware language which would be consistent with a claim that the underlying subject position of verbs such as those in (3.43) is syntactically 'real'. I will not analyse forms of this type here; see Goddard (1979a: Ch. V) for discussion. I will limit my presentation to the passive verbs which are formed with derivational suffixes.

Verb stems containing the 'passive' suffixes typically receive translations of the form 'be Xed', where 'X' is the verb stem to which the suffix is added.

(3.44)

(a) šiipənaasəw
/šiipən-aasii-w/
stretch s.o./s.t. by hand-passive-3
'he, it is stretched out'

(b) koxpiilkwəsəw
/kəxpil-əkʷ-əsii-w/
tie someone up-inv-AI-3
'he is tied up'

¹⁰ The suffix /-əkee/ is briefly discussed in (Goddard (1979a: Ch. V)).

While an agent may be implied, there is no Delaware equivalent to the prepositional phrases formed with 'by' in English. There is no evidence for an implied argument. The lexical passives are analogous to the indefinite object verbs discussed in §3.2.1, in that both types of verbs contain an null argument which appears to be syntactically inert.

3.2.2.1 /-aasii/ 'passive'

Animate Intransitive and Inanimate Intransitive 'passive' verbs are formed with a suffix /-aasii/, which is added to transitive stems.¹¹ Many stems formed with this suffix may function as either AI or II stems (3.45a, c, d). Others were recorded only as II (3.45e), or only as AI (3.45b). Some stems were only recorded in one of the two genders, but would also be expected with the opposite value for gender.

Not all transitive stems form 'lexical' passives with /-aasii/. TA stems formed with the final /-l/ , and finals ending in /-m/ usually form passives by suffixing /-əkw-əsii/ (§2.3.2.2). TA stems which are formed with the abstract final /-w/, and /-ən/ 'by hand' form passives with /-aasii/.¹² These stems may function as AI or II stems. TI stems formed with the suffix /-t/ form passive stems by suffixing /-aasii/. The resulting verb stems function as II stems only.

The examples in (3.45) show /-aasii/ added to stems ending in the TA finals /-ah-w/ 'by tool'; /-h/ 'cause'; /-ən/ 'by hand'; and /-əš-w/ 'by cutting'.

(3.45)

- (a) TA/II/-ah-(w)/ 'by tool'
 poonthaasəw
 /poont-ah-w-aasii-w/
 weigh-by tool-TA-passive-3
 'he, it is weighed'

¹¹ The suffix /-aasii/ also occurs in stems where it appears to be added to a base whose structure is uncertain: /apahahk-aasii/ 'have shingles, be covered in shingles'.

¹² Some stems formed with /-ən/ 'by hand' form passives with the suffix /-aasii/, while others form passives with /-əkw-əsii/. It is not clear if there are any differences in their morphological properties, or their meaning.

sasapeekhaasəw
 /sasap-eek-ah-w-aasii-w/
 spotted-sheetlike-tool-TA-passive-3
 'he, it is spotted, has a line of spots on him, it; is written in a straight line'

šəwahaasəw
 /šəw-ah-w-aasii-w/
 salt-tool-TA-AI-3
 'he, it is salted'

šiiphaasəwak
 /šiip-ah-w-aasii-w-ak/
 stretch-tool-TA-passive-3-pl
 'they are spread out'

- (b) TA/-h/ 'cause'

psakwihteehaasəw
 /pəsakw-ii-htee-h-aasii-w/
 sticky-Ep-hit-caus-passive-3
 'he is crucified'

- (c) TA/-ən/ 'by hand'

šiipənaasəw
 /šiip-ən-aasii-w/
 stretch-by hand-passive-3
 'he, it is stretched out'

- (d) TA/TI/-əš-(w)/ 'by cutting'

wšapšaasəw
 /wəšap-əš-w-aasii-w/
 thin-cut-TA-passive-3
 'he, it is sliced thin'

- (e) TI stems Ending in /-t/

naataasəwal
 /naat-aasii-w-al/
 fetch something-final-3-pl
 'they (IN) are brought'

wəlahtaasəw
 /wəl-aht-aasii-w/
 good-put something-final-3
 'it is put away'

kwəntaasəw
 /kwənt-aasii-w/
 swallow something-final-3
 'it is swallowed'

kiišakənootaasəw
 /kiiš-akən-oot-aasii-w/
 complete-talk about-TI-final-3
 'it is finished being talked about'

ahwaataasəw
 /ahw-aat-aasii-w/
 intense-TI-final-3
 'it is loved'

pooneeləntaasiik
 /poon-eeləm-t-aasii-k/
 cease-think-TI-final-3 (conj)
 'that which is forgiven' (participle)

alohkehtaasəw
 /alohkee-ht-aasii-w/
 work-TI-final-3
 'it is worked, esp. it is farmed (land)'

kšiiixtaasəw
 /kəšiiix-t-aasii-w/
 wash-TI-final-3
 'it is washed'

The properties of intransitive stems formed with /-aasii/ may be accounted for as follows. The Agent thematic role of the underlying subject is never associated with an overt nominal, and more generally, the underlying subject is not manifested as an implicit argument. To account for the syntactic inertness of the underlying subject, the passive morphemes trigger rule (3.46), which assigns features of arbitrary interpretation to the underlying subject position of passive constructions. Rule (3.46) is lexically governed by the passive suffixes.

(3.46) Assign *arb* to the x-[agent] argument.

As a result, the subject position is saturated, and has no surface manifestation: it does not project a category, nor is there a nominal associated with this position. In this regard, the (null) surface direct object of a passive is analogous to the direct object of an indefinite ob-

ject verb in that it cannot be affiliated with an overt nominal, nor does it behave as an implicit argument (Rizzi (1986)).

Since the subject position is now devoid of an argument associated with a thematic role, another argument bearing a thematic role may be associated with subject position. There is a rule which converts the direct object Theme (y-argument) to surface subject:

(3.47) y-Theme --> x-Theme

Some intransitive stems formed with /-aasii/ only occur as II stems; they are derived from TI stems (3.45d). In these II verbs the y-argument of the TI stem is unspecified for gender. However, these stems are not interpreted as AI stems. The non-occurrence of an AI interpretation may be accounted for by assuming an effect analogous to blocking (Aronoff (1976)). That is, these stems do not receive an AI interpretation because they are related to other AI stems (see also Piggott (1989: 20)). For example, in (3.48) below, the existence of an AI passive verb with the meaning 'be loved' (3.48a) blocks the synonymous stem in (3.48b) from being construed as an AI stem. The stem in (3.48b) functions as an II stem only.

(3.48)

- (a) ahwaalkwəsəw
/ahwaal-əkʷ-əsii-w/
love someone-inc-AI-3
'he is loved'
- (b) ahwaataasəw
/ahw-aat-aasii-w/
intense-TI-final-3
'it is loved'

3.2.2.1.1 /-ah-aasii/

Some other verb stems which appear to be formed with /-aasii/ will be discussed here. These stems consist of a noun stem followed by what appears to be the prefinal /-ah-/ 'by tool' and /-aasii/, as in (3.49).

(3.49)

peepaxkwəleešhaasəw
 /peepaxkwəleeš-ah-aasii-w/
 flower-by tool-final-3
 'he, it has flowers on it'

kənoophaasəw
 /kənoop-ah-aasii-w/
 button-by tool-final-3
 'it has buttons'

Like the stems derived from transitive verbs discussed above, these forms may be either AI or II. The gender of the noun stem upon which the verb stem is based does not determine the gender feature associated with the verb stem. If the account proposed above is to be extended to these stems, some explanation of why the gender feature of the noun stem does not percolate and become associated with the argument structure of the verb stem will be necessary, since in the examples in (3.49) the noun stem is animate in gender.

The base to which /-aasii/ appears to be added is always non-occurring in my data. That is, there do not appear to be any TA or TI verb stems formed by adding prefinal /-ah-/ 'by tool' to a noun stem. As was the case with my discussion of /-ahamaa/ (§3.1.3), it is proposed here that the sequence of suffixes /-ah-aasii/ has been lexicalized as a single suffix.

Here I will review an alternative analysis in which it is claimed that there are two suffixes /-ah-/ and /-aasii/, rather than a single suffix /-ahaasii/. The relevant characteristics of the intransitive verb stems under discussion are: (a) they are formed from noun stems; (b) although what appears to be the prefinal /-ah-/ 'by tool' occurs suffixed to the noun stem, no transitive verb stem is formed by adding the TA final /-w/ to the prefinal. That is, no Transitive Animate or Transitive Inanimate verb stem is formed by adding /-ah-(w)-/ to a noun stem. The distribution of /-ah-/ 'by tool' could be accounted for by proposing that /-ah-/ subcategorizes for noun stems as well as roots. However, it would be necessary to ac-

count for why sequences of noun stem and /-ah-/ never form transitive stems, but obligatorily only form intransitive stems, while /-ah-/ does form transitive stems when affixed to roots, for example (§2.1).

In order to account for the distribution of intransitive verbs containing /-ah-aasii/, an analysis which makes use of the lexical filtering mechanisms proposed by Allen (1978) could be proposed. In order to account for analogous sets of data in English, Allen (1978) proposed that the non-occurring bases upon which certain classes of stems are constructed are well-formed stems, but are diacritically marked not to undergo lexical insertion. Similarly, it could be proposed that the transitive verb stems which are formed from noun stems followed by the prefinal /-ah-/ 'by tool' and TA final /-w/ are well-formed stems. As such they form the input to suffixation of /-aasii/, but are themselves diacritically marked not to undergo lexical insertion. Appeal to this type of filtering mechanism has been criticized by Kiparsky (1982) and Walsh (1985), since it requires a distinction between 'possible' and 'occurring' words which is not defensible. Therefore, the analysis which requires use of this mechanism is rejected.

Analysing /-ahaasii/ as a single suffix permits a straightforward statement of the properties of this suffix, namely that it attaches to noun stems.

3.2.2.3 /-əkw-əsii/ 'passive'

The sequence of suffixes /-əkw-əsii/ is added productively to TA verb stems to form AI verbs with a passive sense. AI verbs formed with /-əkw-əsii/ have a non-agentive (Theme) subject. In the forms discussed in this section the suffix /-əkw-/ is always followed by the suffix /-əsii/. However /-əkw-/ and /-əsii/ are analysed as two separate suffixes. Similar II verbs, not discussed here, are formed by adding the suffix /-at/ to /əkw-/.

Although /-əkw-/ as used in the formation of intransitive passive verbs is comparable to the homophonous TA theme sign /-əkw-, which is employed in the formation of certain types of Transitive Animate verbs (§2.2.0; Goddard (1979a: Ch. V)), the two morphemes have distinct properties. TA verbs followed by /-əkw-/ are inflected for person and

number as transitives (§2.2.0). TA stems followed by /-əkʷ-/ and the final /-əsii/ are only inflected as AI stems. The behaviour of the AI stems exemplified in this section is accounted for by analysing /-əkʷ-/ in intransitives as having an effect on the argument structure of the TA stem to which it is added.

The sequence of suffixes /-əkʷ-əsii/ productively forms AI verb stems based upon TA stems ending in /-l/ (Group (3)), or /-m/ and /-h/ (Group (4)). A few cases of /-əkʷ-əsii/ added to TA stems ending in the final /-aw/ were recorded. No instances were recorded of /-əkʷ-əsii/ added to TA stems formed with prefinal plus the final /-w/ (§2.1.1). One stem was recorded with /-əkʷ-əsii/ added to a TA stem formed by adding /-w/ directly to a root (ex. 3.50c).

(3.50)

(a) TA Stems Ending in /-l/

kataalkwəsəw
/kataal-əkʷ-əsii-w/
want someone-inv-AI-3
'he is wanted/needed'

aapčiiinaləkwsəw
/aapčiiinal-əkʷ-əsii-w/
work someone to death-inv-AI-3
'he is driven/tormented to death'

koxpiilkwəsəw
/kəxpiil-əkʷ-əsii-w/
tie someone up-inv-AI-3
'he is tied up'

miilkwəsəw
/miil-əkʷ-əsii-w/
give to someone-inv-AI-3
'he is given'

wihlkwəsəw
/wihl-əkʷ-əsii-w/
name someone-inv-AI-3
'he is named'

nihlkwəsəw
/nəhl-əkʷ-əsii-w/
kill someone-inv-AI-3
'he is killed'

(b) TA Stems Ending in /-m/ or /-h/

kanteeləməkwsɪ
 /kə-kanteeləm-əkʷ-əsii/
 2-condemn someone-inv-AI
 'you are condemned'

mantoomkwəsəw
 /mantoom-əkʷ-əsii-w/
 blame someone-inv-AI-3
 'he is blamed'

miixaniimkwəsəw
 /miixaniim-əkʷ-əsii-w/
 shame someone by speech-inv-AI-3
 'he is shamed (by speech)'

teepiilaweekwəsəw
 /teepiilaweek-əkʷ-əsii-w/
 satisfy someone-inv-AI-3
 'he is satisfied'

(c) Other TA Stems

neewkwəsəw
 /neew-əkʷ-əsii-w/
 see someone-inv-AI-3
 'he is seen'

naatənəkwsəw
 /naatən-əkʷ-əsii-w/
 take someone away-inv-AI-3
 'he is taken away (esp. to heaven)'

The suffixation of /-əkʷ-/ has the same morphosyntactic effect on verb stems as does suffixation of /-aasii/. The features of arbitrary interpretation associated with the suffix /-əkʷ-/ are assigned to the direct object, saturating it. The suffixation of /-əkʷ-/ requires the suffixation of /-əsii/ (or /-at/ in the case of II verbs). The rule (3.47) discussed in §3.2.2.1 converts the y-argument (Theme) to an x-argument.

Some forms were recorded of AI stems based upon TA stems formed with the prefinal /-ah-/ 'by tool' followed by /-əkʷ-/, but not /-əsii/, as in (3.51a-b). Somewhat similar are the AI verbs describing action of the wind, which appear to add the suffix /-əkʷ-/ to a TA stem containing the prefinal /-ax-/ 'wind' (3.51b). The prefinal /-ax-/ 'wind' also oc-

curs in II verbs such as pənaxən 'it is blown down by the wind'. It is unclear why the stems in (3.51) should be formed differently from those in (3.50), in which AI verbs formed with /-əkʷ-əsii/ are formed from TA stems.

(3.51)

- (a) /-ah-w-əkʷ/ 'be x'ed'

təmahookw
/təm-ah-w-əkʷ/
severed-by tool-TA-AF
'he (e.g. tree) is knocked over, broken off'

anahookw
/an-ah-w-əkʷ/
lose-by tool-TA-AF
'he is lost'

- (b) /-ax-w-əkʷ/ 'wind'

mpənxookw
/nə-pən-ax-w-əkʷ/
1-down-wind-TA-inv
'I am blown down by wind'

pənaxookw
/pən-ax-w-əkʷ-w
down-wind-TA-inv-3
'he is blown down by wind'

The morpheme /-əkʷ/ may also occur in one verb stem, where it is not preceded by a prefinal: AI maməkʷ 'he has an accident (esp. fatal)'. The stems /nəhiinaakw-/ 'be lucky' and /paxaakw-/ 'choke' may also contain /-əkʷ/, but this is uncertain.

Several sentences were recorded which contained an AI verb stem derived from a TA verb stem by suffixation of /-əkʷ-/ (§3.2.1.3) and a nominal element which would correspond to the underlying subject of the transitive verb.

(3.52)

kaalal kəlahookw
/kaal-al kəlah-w-əkʷ/
car-obv grasp by tool-TA-inv
'he was hit by a car (obviative)'

I do not know how widespread this phenomenon is. Only a few AI passives are formed with /-əkʷ/.

The sequence /-əkʷ-əsii/ also occurs preceded by other morphemes, in the sequences /-htaakwəsii/ 'by sound'; /-iinaakwəsii/ 'appearance'; /-maakwəsii/ 'smell'; /-pookwəsii/ 'taste', and /-aapaməkʷəsii/ 'have the colour, appearance'.

(3.53)

- | | | |
|-----|---|------------|
| (a) | <u>/-iin-aw-əkʷ-əsii/</u> | 'appear' |
| | mačiinaakwsəw
/mat-iinaw-əkʷ-əsii-w/
bad-appear-inverse-AF-3
'he has an unpleasant appearance' | |
| (b) | <u>/-p-w-əkʷ-əsii/</u> | 'taste' |
| | mačiipookwsəw
/mat-ii-pw-əkʷ-əsii-w/
bad-Ep-taste-inverse-AF-3
'he has an unpleasant taste' | |
| (c) | <u>/-ht-aw-əkʷ-əsii/</u> | 'sound' |
| | mačihtaakwsəw
/mat-i-htaw-əkʷ-əsii-w/
bad-Ep-hear-inverse-AF-3
'he has an unpleasant sound' | |
| (d) | <u>/-maa-əkʷ-əsii/</u> | 'smell' |
| | mačiimaakwsəw
/mat-ii-m-aa-əkʷ-əsii-w/
bad-Ep-smell-inverse-AF-3
'he has an unpleasant smell' | |
| (e) | <u>/-aapam-əkʷ-əsii/</u> | 'by sight' |
| | nsəkaapaməkwsəw
/nəsək-aapam-əkʷ-əsii-w/
black-by sight-inv-AI-3
'he is a black colour' | |

In some cases, it appears that /-əkw-əsii/ is added directly to a TA stem, as in (3.54).

(3.54)

- (a) /wəl-iin-aw/
good-by sight-TA
'like the looks of someone'
- (b) wəliinaakwsəw
/wəliinaw-əkw-əsii-w/
good by sight-INV-AF-3
'he is good looking'

For pairs of stems of the type in (3.54), the AI stem may be derived from the TA by suffixation of /-əkw-/ and /-əsii/, as discussed above. However, more frequently the base to which /-əkw-əsii/ appears to be added does not correspond to an actually occurring TA stem. In the case of (3.53d), no corresponding TA stem formed with a prefinal denoting 'smell' was recorded. TA stems containing /-ht-aw/ 'by hearing' (3.53c) are rare.

It is necessary to determine the status of sequences of suffixes such as /-iin-aw-əkw-əsii/. In these sequences, the putative TA final /-aw/ (§2.1) always undergoes contraction to /-aa/. Two alternative analyses will be considered here (this discussion parallels our discussion of such suffixes as /-ahamaa/ 'use' (§3.1.3) and /-ahaasii/ (§3.2.2.1.1)). One is to analyse a sequence of suffixes such as /-ht-aw-əkw-əsii/ as a single suffix which subcategorizes for roots. The degree of relationship which exists between this suffix and the morphemes /-ht-/, /-aw-/, /-əkw-/, and /-əsii/ could then be calculated by whatever approach is taken to the calculus of lexical relatedness (this topic is beyond the scope of this study; for some suggestions see Walsh (1985: 105-109)).

Some evidence that /-iin-aw-əkw-əsii/ and other similar sequences are single suffixes is found in the derivation of certain stems formed with connective /-w/ (§1.7). It was noted that verb stems could be formed by adding /-iinawəkwəsii/ to sequences of an AI or

OTI stem followed by connective /-w/. The formation of these stems does not involve derivation from a TA stem. For example, in (3.55) the AI stem 'look like one can go fast' (3.55b) is derived by adding /-iinaakwəsii/ to an AI stem which is followed by 'connective /-w-/'.

(3.55)

- (a) nkəʃihla
/nə-kəʃihlaa/
1-go fast
'I go fast'
- (b) kʃihleewiinaakwsəw
/kəʃihlaa-w-iin-aw-əkʷ-əsii-w/
go fast-CW-have the appearance-3
'he looks like he can go fast'

There is no evidence that the AI verb stem in (3.55b) is derived from a TA stem. Stems such as that in (3.55b) may be accounted for by analysing /-iinaakwəsii/ as a single (lexicalized) suffix.

Another alternative analysis would propose that each of the suffixes has a lexical entry. For example, there could be a suffix /-iin(aa-)/, which has the meaning 'by sight'. The lexical entry for this suffix is specified as subcategorizing for a root, but does not specify grammatical category. The suffixes /-əkʷ-/ and /-əsii/ may be added to /-iin/. It would be difficult to determine why /-əkʷ-/ and /-əsii/ are attached to this morpheme, and not to any other. That is, in principle, /-iin(aa-)/ 'by sight' should be permitted to be followed by other suffixes.

I take the position that /-iinaakwəsii/ has been lexicalized as a single suffix. In this manner the derivation of the intransitive stems containing this suffix follows directly from the morphological subcategorization properties of the suffix. That is, this suffix subcategorizes for roots. The derivation of AI stems from AI stems by suffixation of /-w-/ and /-iinaakwəsii/ may also be stated straightforwardly.

3.2.3 Other Suffixes

In this section several suffixes which form intransitive stems from transitive stems are discussed: /-ii/ 'middle' (§3.2.3.1); /-sii/ 'middle reflexive' (§3.2.3.2); and /-tii/ 'reciprocal' (§3.2.3.3). The suffix /-htaw/, which forms TA stems from AI stems is also discussed (§3.2.3.4).

3.2.3.1 /-ii/ 'middle'

An Animate Intransitive suffix of the form /-ii/ is added in secondary derivation to transitive verb stems in several patterns. The suffix /-ii/ which appears in the verb stems discussed in this section has morphosyntactic properties distinct from those of the suffixes of the same form which were discussed in §§2.4.2.2 and 3.1.1. The assignment of the gloss 'middle' to this suffix will be justified in this section.

Most commonly, AI stems appear to be formed from TA or TI stems containing the prefinal /-(ə)s-/ 'by heat'. Since the TA final /-w/ found with this prefinal is invariably deleted, it is not clear whether /-ii/ is being added to the TA or TI stem. For example, an AI 'middle' verb stem such as /wən-s-ii/ 'be boiling' could be formed by adding the suffix /-ii/ 'middle' to the TI stem /wən-s-/ 'boil something', or by adding this suffix to the TA stem /wən-s-w-/ 'boil someone'. Since the TA final /-w/ is always deleted it is not obvious whether the TA or the TI stem forms the input to the suffixation of /-ii/ 'middle'. Derivations from either source would yield well-formed stems. However, evidence discussed later in this section supports the derivation of middle verbs from TA stems.

These stems belong to the class of what Bloomfield (1946: §73) refers to as 'middle reflexive' verbs: intransitive stems which have some reflexive element of meaning. The corresponding II stems are described in §2.4.2.8. These stems may also be compared to the AI middle reflexives formed with /-sii/ (§3.2.3.2). The examples discussed in this section do not have any element of a reflexive meaning, unlike some of the examples formed with middle reflexive /-sii/ (§3.2.3.2).

Historically, there are several types of Animate Intransitive 'middle reflexive' verbs based upon Transitive Animate stems. Bloomfield (1946: §84) reconstructed for Proto-Algonquian a number of AI middle reflexive types, all ending in a vowel *-*o*. In Delaware, as in other Eastern Algonquian language, the middle reflexives have disappeared as a distinctive stem type; they are not morphologically distinct from ordinary AI finals ending in the segment /-ii/ (Goddard (1979a: 63-64)). Traces of other patterns of middle reflexive formation are found in Delaware; Bloomfield (1946) identified the Proto-Algonquian forms which result in Delaware AI /-s-ii/ 'heat' (this section) and II /-t-ee/ 'heat' (§2.5.2.8) as middle reflexives. Many AI stems ending in /-ii/ (§§2.4.2.2 and 2.4.3.1) are historically middle reflexives. As well, some AI stems are derived by adding /-sii/ to TA stems (§3.2.3.2).

Synchronically, the suffix /-ii/ derives intransitive verb stems from transitive verb stems. However, unlike the indefinite or unspecified object stems, there is no suggestion that these stems make reference to an implied object. The AI stems in (3.56) are middle verbs formed from transitive verb stems containing the prefinal /-əs-/ 'by heat'.

(3.56)

wənsəw
/wən-s-ii-w/
boil-heat-AI-3
'he comes to a boil'

loosəw
/loo-s-ii-w/
burn-heat-AI-3
'he burns'

pwahksəw
/pwahk-s-ii-w/
burst-heat-AI-3
'he explodes'

mehtsəw
/meht-s-ii-w/
to exhaustion-heat-AI-3
'he burns up'

kʃəsəw
/kəʃ-s-ii-w/
warm-heat-AI-3
'he is hot, sweats'

kiiʃsəw
/kiiʃ-s-ii-w/
completed action-heat-AI-3
'he is done cooking'

ləŋksəw
/ləŋk-s-ii-w/
melt-heat-AI-
'he melts'

AI stems are also formed by adding /-ii/ to combinations of a root followed by the medial /-əčee-/ 'body, shape' (§4.1.8) and /-əs-(w)/ 'by heat'. The sequence of prefinal and final /-s-(w)-ii/ conditions a shift of the final long vowel /-ee/ of the medial to /-a/, as in the examples in (3.57) below.¹³ Certain other morphemes also condition the same alternation, such as /-t-ee/ 'heat' (§2.5.2.8). As well, the classificatory medial /-əpee/ 'water' (§4.1.4) has an allomorph /-əpa-/ when it is followed by /-sii/.¹⁴

Examples of /-s-ii/ following the allomorph /-əča-/ of the medial /-əčee-/ are listed in (3.57).

(3.57)

maxkčasəw
/maxk-əčee-s-ii-w/
red-body-heat-AI-3
'he is burnt red'

nsəkčasəw
/nəsək-əčee-s-ii-w/
black-body-heat-AI-3
'he scorches, is burnt black'

piikčasəw
/piik-əčee-s-ii-w/
to pieces-body-heat-AI-3
'he crumbles'

¹³ Voorhis (1983: 79) notes a comparable alternation in Kickapoo.

¹⁴ Some exceptional forms are discussed in §4.1.4.

The forms in (3.58) probably contain the suffix /-ii/. However, analysis of the stems is uncertain, as few morphologically related forms were collected.

(3.58)

nsəksəsəw
/nəsək-ax-as-ii-w/
black-skin-heat-AF-3
'he tans'

šawiipasəw
/šawiip-as-ii-w/
limp-heat-AF-3
'he wilts'

awasəw
/awas-ii-w/
heat-AF-3
'he warms himself'

nkaanšiinkwahtawasi
/nə-kaanš-iinkw-ahtaw-as-ii-w/
1-great-smoke-fire-heat-AF-3
'I make a lot of smoke'

noočiimahtawasi
/nə-wəčiim-ahtaw-as-ii/
1-permanent-fire-heat-AF
'my fire goes out'

Formation of AI 'middle' verbs from TA stems by suffixation of /-ii/ does not appear to be productive. Most TA verbs do not form a corresponding AI verb by suffixation of /-ii/. Animate Intransitive 'middle' stems appear to be most commonly formed on transitive stems containing the prefinal /-(ə)s-/ 'by heat'. No AI middle stems formed with /-ii/ were recorded based on transitive stems formed with /-ən/ 'by hand', /-əš-/ 'by cutting', /-ah-/ 'by tool', or others such as /-əl-aw/ 'by forceful contact'. Some middle reflexive verbs are formed by adding /-sii/ to TA stems formed with the final suffix /-əm/, for which see §3.2.3.2.

Keyser and Roeper (1984) note that a distinction may be made in English between middle and unaccusative verbs, based on evidence from a variety of morphological, syntactic, and semantic criteria (see Fagan (1988) and Napoli (1988) for discussion of their analysis). The term “unaccusative” refers to surface intransitive verbs which are proposed to be derived from verbs which have a logical object and no subject (Perlmutter (1978)).¹⁵ Unaccusative intransitive verbs can be distinguished from “unergative” intransitives, which are analysed as having a subject and no direct object at all levels of analysis. English middle verbs usually suggest that there is an implied agent, as in (3.59a), while unaccusative verbs do not (examples from Keyser and Roeper (1984)).

(3.59)

- (a) Bureaucrats bribe easily.
- (b) The ice melted.

Delaware ‘middle’ verbs such as those in (3.56) do not appear to make reference to an implied agent. In this regard they differ from English middle verbs, which generally suggest the presence of an implied agent (Keyser and Roeper (1984: 383); Fagan (1988: 199). However, the verbs formed with the suffix /-ii/ have a property which makes them resemble English intransitive verb stems whose surface subject may be derived from an underlying direct object. The AI ‘middle’ verbs in (3.56) and (3.57) have Theme subjects. There are stem pairs as in (3.60), consisting of a TA stem (3.60a) and a corresponding ‘middle’ AI (3.60b).

(3.60)

- | | | |
|-----|--------------------|---------------------|
| (a) | /kiiʃ-əs-w/ | ‘cook someone done’ |
| | x-Agent | |
| | y-[+animate]-Theme | |

¹⁵ Burzio (1986) and Keyser and Roeper (1984) refer to “unaccusative” verbs as “ergative”. I retain the original terminology.

- (b) /kiiš-əs-ii/ 'be cooked done'
x-[+animate]-Theme

Middle verbs are very similar to passives, as Keyser and Roeper (1984: 40) point out. These stems can be analysed much like the lexical passives discussed in §3.2.2. The underlying x-argument (Agent) is not realized at all in these structures. Unlike the lexical passives, there is no suggestion that the underlying subject (y-argument) receives an 'arbitrary' interpretation. Like English unaccusative verbs, verb stems such as (3.60b) are not interpreted as making reference to an indefinite or implied object. There must be a rule which is involved in the formation of these stems:

(3.61) Delete the x-[agent]-argument.

Since the underlying direct object is realized as the subject, a rule converting direct object themes into subjects (x-arguments) is required. The rule (3.46), which is involved in the formation of passives, repeated here as (3.62), has this effect:

(3.62) y-[theme] --> x-[theme]

3.2.3.2 /-sii/ 'middle reflexive'

Some AI stems are formed by adding /-sii/ to TA stems.¹⁶ Formation of AI stems by suffixation of /-sii/ does not appear to be productive. The suffix /-sii/ cannot be added without restriction to any TA stem, although examples formed from stems containing the TI final /-eel-əm/ 'by thought' are relatively common (3.63a).

The suffix /-sii/ does not usually make a consistent contribution to the meaning of a stem to which it added. Translations reflecting a reflexive meaning are most common for

¹⁶ Some stems which appear to contain /-sii/ have bases which were not recorded in other stems: /weewehkaas-ii/ 'to swing'.

stems containing TA /-eel-əm-/ 'by thought', although not all examples are so translated (3.63a). Examples formed on other stems are rare (3.63b).

(3.63)

(a) TA Stems Ending in /-eel-əm/ 'by thought'

noontayeelənsi
/noontee-y-eel-əm-sii/
lacking-Ep-thought-TA-AI
'I think myself inferior'

ntaləweclənsiin
/nə-t-aləw-eel-əm-s-ii-n/
1-Ep-more-thought-TA-AI-3
'I think myself better than him'

kwiilaweelənsəw
/kwiil-aw-eel-əm-sii-w/
seek-TA final-thought-TA-AI-3
'he feels desolate (having no place to go)'

wəleelənsəw
/wəl-eel-əm-sii-w/
good-thought-TA-AI-3
'he thinks well of himself'

(b) Other Stems

akiinsəw
/ak-iim-sii-w/
count-TA final-AI final-3
'he reads'

nkata=waapeensi
/nə-kata=waapee-m-sii/
1-want=benefit-TA-AI
'I want a share of an inheritance'

šiinsəw
/əʃ-iim-sii-w/¹⁷
thus-TA-AI-3
'he is named thus'

¹⁷ The underlying TA stem /əʃiim-/ was not recorded.

Some TA stems formed with the suffix /-l/ drop the final consonant when /-sii/ is suffixed.

(3.64)

/koxpii-l-/	'tie someone up' (TA)
/koxpii-sii-/	'be tied up'
/naxaa-l-/	'be wary of someone' (TA)
/naxaa-sii-/	'be wary, watchful'

I will assume that /-sii/ is lexically specified as having the property of truncating final /-l/ in the formation of AI stems.

Several other forms containing /-sii/ were found; these have obscure structure. This suffix is added to variable inputs; in (3.65a-b), it occurs after verb roots; in (3.65c) after a noun stem.¹⁸

(3.65)

- (a) paaxkeehənsəw
/paaxkee-ahənsii-w/
remove-refl-3
'he takes the covers off himself'
- (b) kšiiixənsəw
/kəšiiix-ahənsii-w/
wash-refl-3
'he washes himself'
- (c) ponkhwənsəw
/ponkw-ahənsii-w/
dust-refl-3
'he gives himself a dustbath, powders himself'

AI verb stems formed with /-sii/ do not appear to consistently have a reflexive meaning. Although the stems in (3.63a) and (3.65) mostly have reflexive meanings, those

¹⁸ Reflexives are more commonly formed periphrastically, with a transitive animate verb stem in construction with the dependent noun stem /-hakay/ 'body, self' construed as animate in gender; see Goddard (1979a: Ch. III).

in (3.63b) and (3.64) do not. Some examples do not appear to have a consistent semantic relationship with the transitive stem upon which they are based. That is, these forms are semantically noncompositional. For example (3.63b) /akiinsii-/ 'read' is ostensibly based upon TA /akiim/ 'count someone', but has a meaning which is at best only partially related. Stems formed with /-sii/ will be listed in the lexicon, because they do not display a consistent semantic relationship with their base.

3.2.3.3 /-aa/

A suffix of the form /-aa/ forms AI stems from TI stems of Classes 1a, 1b and 2. When occurring after TI Class 1a and 1b stems /-aa/ appears to be added directly to the TI theme signs /-am/ and /-əm/ respectively. When occurring after TI Class 2 stems /-aa/ is added to TI stems ending in /-t/.¹⁹ Only a few examples were recorded. These patterns do not appear to be productive; the forms listed in this section constitute the near totality of all forms of this type which were recorded. The meaning of this suffix is uncertain.

Some of the forms recorded occur with a direct object, which may be marked for obviation if it is animate and appears in the relevant context, but do not take transitive inflectional endings. For example, the sentence in (3.66) consists of a verb of this type with an NP object. The verb is not inflectionally marked for an object.

(3.66)

ntəntxihlata apwaan
/nə-t-əntax-ii-hl-at-aa/
1-Ep-so many-Ep-motion-TI-AF
'I lack bread'

These verbs are unlike the Animate Intransitive verbs inflected for an object (AI+O; §2.2.2), since the presence of the object of an AI+O verb is overtly marked on the verb. The

¹⁹ Goddard (1979a: 65-66) discusses stems formed with this final from a historical point of view.

morphosyntactic properties of sentences such as (3.66) are not well understood, and are in need of further investigation.

For some speakers, this stem type represents 'stable' /-aa/, that is, those cases of stem-final /-aa/ that do not shift to /-ee/ before the inflectional suffix /-w/ '3' (Goddard (1979a: 64)). Most speakers have generalized the /-aa/ ~ /-ee/ alternation, so that all stem-final /-aa/ vowels shift to /-ee/ in the appropriate environments. For remarks on 'stable' (non-alternating) and 'unstable' (alternating) stem-final /-ii/; see §2.4.2.2.

Examples of /-aa/ added to TI Class 1a, 1b, and 2 stems are listed in (3.67a-c) respectively.

(3.67)

(a) TI 1a Stems

nənohtama
/nə-nənoht-am-aa/
1-hear-TI1a-AF
'I understand (another's speech)'

nkwakweentama
/nə-kwakween-t-am-aa/
1-swallow (redup)-TI1a-AF
'I gulp'

nooliikwana
/nə-wəliikw-am-aa/
1-comb-TI1a-AF
'I comb my hair'

(b) TI 1b Stems

nsookpeenəma
/nə-sook-əpee-ən-əm-aa/
1-pour-liquid-by hand-TI1b-AF
'I pour out a liquid'

piikənəmeew
/piik-ən-əm-aa-w/
crumble-by hand-TI1b-AF
'he breaks up (bread in milk)'

mpohwənəma
/nə-pohw-ən-əm-aa/
1-beat-by hand-TI1b-AF
'I beat a drum'

nkwaalxeenəma
/nə-kwaalxee-ən-əm-aa/
1-smoke-by hand-TI1b-AF
'I make smoke'

(c) TI 2 Stems

noontehlata
/nə-noontee-hl-at-aa/
1-lack-motion-TI-AF
'I lack (something)'

mpahčihlata
/nə-pahč-ii-hl-at-aa/
1-error-Ep-motion-TI-AF
'I choke (once) from food going down the wrong way'

ntaləwihlata
/nə-t-aləw-ii-hl-at-aa/
1-Ep-more-Ep-motion-TI-AF
'I have (it) left over'

kəčaxkiixta
/kə-kəčaxk-ii-x-t-aa/
2-undo-Ep-lay-TI-AF
'you have an item of clothing undone (esp. fly of pants)'

noolateextahna
/nə-wəl-atee-x-t-aa-hna/
1-good-road-lay-TI-AF-pl
'we (exc.) make a good path/road'

There are also a number of stems which appear to be formed by this process for which the underlying TI stem was not recorded. These stems are analysed as being listed, rather than derived.

(3.67)

naxkooh(ə)meew
/naxkooh-əm-aa-w/
sing-TI1b-AF
'he sings'

mpakasəma
/nə-pakas-əm-aa/
1-crack-TI1b-AF
'I crack nuts'

nəwiinkiiməsəma
/nə-wiink-ii-m-əs-əm-aa/
1-good-Ep-smell-by heat-TI1b-AF
'I cook (s.t.) with a nice smell'

nšəkwater
/nə-šək-w-at-aa/
1-crush-TI-AI
'I have a miscarriage'

niimčeehəma
/nə-niim-əčee-h-am-aa/
1-aloft-body-by tool-TI1a-AF
'I play lacrosse'

3.2.3.4 /-tii/ 'reciprocal'

Reciprocal verbs are formed by adding /-tii/ or one of its allomorphs to a TA stem. Reciprocal verbs are AI stems, taking AI inflections. The reciprocal suffix has several allomorphs whose distribution appears to be morphologically conditioned by the preceding TA final suffix. I do not have reliable data for all TA stem types. The basic allomorph /-tii/ is added directly to TA stems ending in the segments /-l/, /-m/, or /-n/ (3.68a-c). TA stems formed with the suffix /-aw/ lengthen the vowel of the suffix and add the allomorph /-atii/ (3.68d). TA stems formed with the TA final /-h/ 'cause' (§2.1.4) add the allomorph /-otii/; the short vowel fails to undergo Vowel Syncope (R29) (3.68e).

(3.68)

- (a) ahwaaltəwak
/ahw-aal-tii-w-ak/
intense-TA-recip-3-pl
'they love each other'
- (b) sakantəwak
/sak-am-tii-w-ak/
grasp-by mouth-recip-3-pl
'they bite each other'
- (c) sakahkwəntəwak
/sak-ahkw-ən-tii-w-ak/
grasp-wood/solid-recip-3-pl
'they hold hands with each other'

- (d) nkiiskaawatəwak
/nak-ii-sk-aw-tii-w-ak/
stop-Ep-by foot/body-TA- recip-3-pl
'they meet each other'
- (e) pəmiineehotəwak
/pəmiineeh-otii-w-ak/
argue with someone- recip-3pl
'they argue with each other'

The formation of reciprocal stems binds the direct object (y-argument) to the subject (x-argument) of the Transitive Animate verb stem, as a reflexive anaphor (see Bresnan and Moshi (1990: 170) for an instantiation of this type of operation in a Lexical-Functional Grammar framework).

3.2.3.5 /-htaw/ 'action relative to an object'²⁰

The final /-htaw/ is added to AI stems to form TA verb stems. This is one of the few secondary finals which adds an argument to an AI stem. The corresponding TI /-ht-/ was recorded in only a few forms: ntalohkehtamən 'I work at it', from AI /alohkee-/ 'work'. The TI forms were not elicited systematically. The suffix /-htaw/ forms TA stems from AI stems only if there is no corresponding TA stem with the same meaning formed by other means. The relationship between stems formed with the suffix /-htaw/ and the Animate Intransitive plus Object (AI+O) stems discussed in §2.2.2 remains to be investigated.

In (3.69), the AI verb stems from which each corresponding TA is formed is listed separately.

²⁰ This is the gloss which Bloomfield (1946: §85) assigned to the Proto-Algonquian ancestor of this suffix.

(3.69)

- (a) ntalohkehtawaaw
 /nə-t-alohkee-htaw-aa-w/
 1-Ep-work-TA-3-sg
 'I work for or at him'

 /alohkee-/
 'work' (AI)
- (b) ntih̄tpihtawaaw
 /nə-tih̄təpii-htaw-aa-w/
 1-wave-TA-3-sg
 'I wave to him'

 /t̄ih̄təpii-/
 'wave' (AI)
- (c) nəkwətiinkwehtawaaw
 /nə-nəkwətiinkwee-htaw-aa-w/
 1-wink-TA-3-sg
 'I wink at him'

 /nəkwətiinkwee-/
 'wink' (AI)

The lexical entry of this suffix is as follows.

(3.70)

<div>/ -htaw/</div> <div>'action relative to an object'</div> <div> <div>V-1</div> <div>y-[+animate]-Theme</div> </div>

CHAPTER IV

MEDIALS

4.0 Introduction

The term 'medial' is traditionally used by Algonquianists to refer to elements which occur between roots and final suffixes in primary derivation, and between stems and finals in secondary derivation. A distinction may be made between two main subtypes of medials: classificatory medials, and incorporating medials. There are also other elements occurring in the position between roots and finals which do not have the same characteristics as the classificatory and incorporating medials. These morphemes will be referred to as Type C medials.

As discussed in Chapter I, the terms traditionally employed to refer to stem morphemes are used inconsistently. The terms 'final' and 'medial' are often used to refer either to constituents of a stem (which may have internal structure), or to a particular type of suffix. The term 'medial' tends to be used as a cover term for classes of affixes which have distinct characteristics. In this study 'medial' refers to a particular type of suffix, whose properties will be discussed in this chapter. The lexical entries of classificatory medials do not contain information about grammatical category or, when they occur in verb stems, about verb class (TA, TI AI, II). That is, they do not act as the head of the stem in which they occur. Similarly, the morphemes which are referred to as 'incorporating' medials are analysed as noun stems.

Algonquianists have not explored the properties of classificatory and incorporating medials in any detail, with the exception of Wolfart (1971) and Denny (1981). Since both incorporating and classificatory medials appear to have some of the properties of nouns, it could be proposed that they are formed by a syntactic rule which forms complex verbs by transformational movement of a noun stem. This type of analysis has been proposed for other languages by Baker (1988) and Sadock (1980, 1985). Some linguists have proposed that noun incorporation should be analysed as a type of compounding, most notably

Mithun (1984), diSciullo and Williams (1987), and Rosen (1989)). In this study I take the position that neither Delaware classificatory medials or noun incorporation are syntactically derived. Classificatory medials are analysed as suffixes which differ from finals in that they are not specified for grammatical category. Similarly, the morphemes which are referred to as 'incorporating' medials are not medial affixes, but rather noun stems which occur in compound stems.

I will briefly review some of the characteristics of classificatory medials and of Noun Incorporation. When occurring in verbs, classificatory medials denote some property that one of the verb's arguments must have (§4.1). That argument may be denoted by a noun which occurs elsewhere in the sentence. Classificatory medials are nearly always followed by a final suffix, with the systematic exception of certain types of nouns discussed in §5.3.

Incorporating forms include a wide variety of noun stems which appear to be incorporated into verb forms. An important group of incorporating forms are the 'body part' medials (§4.3). There are also other incorporated forms. There is a relationship between the use of noun stems in Noun Incorporation and the compound nouns discussed in Ch. VII, in that both types of stems are formed with the same bound variants of noun stems. In certain instances the relationship between the incorporated form and the corresponding free noun stem is transparent. However, many nouns do not enter into incorporation, or only do so with certain predicates (§4.4). In some instances a free noun stem has a suppletive incorporated form, particularly in the case of body part forms. As well, there are certain morphemes which might be considered to involve incorporation which have no free form (§4.4).

Incorporated nouns invariably are followed by a morpheme sometimes referred to as 'post-medial' /-ee/ when they undergo further derivation. It is arguable that this is actually the same morpheme as the AI verb final /-ee/ (§2.4.2.3). However the incorporating

forms which occur with the AI final /-aa/ also have /-ee/ occurring postmedially when they undergo further derivation.

In the examples in (4.1), an AI verb formed with an incorporating (body part) medial takes the AI final /-ee/ (4.1a), which also occurs in further derivation (4.1b). In the examples in (4.1c-d), an AI verb formed with an incorporating (body part) medial takes the AI final /-aa/ (4.1c), but requires /-ee/ in further derivation (4.1d).

(4.1)

- (a) nəkwtəkaate
 /nə-nəkwtə-ə-kaat-ee/
 1-one-Ep-leg-final
 'I use one leg'
- (b) nkwətkaaateexiin
 /nəkwtə-kaat-ee-xiin/
 one-leg-final-concrete final
 'he has one leg'
- (c) nkamkwəkaata
 /nə-kaməkw-kaat-aa/
 1-soak-leg-final
 'I put my legs in water'
- (d) nkamkwəkaateexiin
 /nə-kaməkw-kaat-ee-xiin/
 1-soak-leg-final-concrete final
 'I have my legs in water'

What is apparently the same morpheme also appears in secondarily derived verb stems containing classificatory medials. These will be discussed in §4.3.

4.1 Classificatory medials

The term 'classificatory medial' is used to describe a class of morphemes which occur between roots and finals in verb stems and also occur in certain noun stems. Classificatory medials occur between the root and the final in verbs formed in primary derivation. They also occupy the same position in certain primary noun stems. In other types of nouns there is no final suffix present. As a result, the classificatory medial occurs

in stem-final position in nouns of the latter type. This has led Algonquianists to analyse the classificatory medials as final suffixes when occurring in nouns, or to say that there are homophonous medial and final pairs.¹

In terms of meaning, classificatory medials typically denote a property of the predicate they are applied to. Cross-linguistically, classifiers frequently refer to particular properties of entities. Although classifiers may denote almost any semantic concept, there are a relatively small number of concepts which recur with some frequency in classifier systems cross-linguistically (K. Allan (1977)). What are usually considered to be the 'prototypical' Algonquian classificatory affixes denote a small number of concepts, pertaining to the variables of salient dimension, shape, and consistency of entities, such as flexibility, rigidity, length, etc.² Medial suffixes encoding other semantic features also occur.

In intransitive verbs, classifiers are predicated of the subject, and in transitive verbs they usually are predicated of the object. A preliminary observation is that classificatory medials in Delaware are predicated of arguments bearing theme or patient thematic roles. This is true of transitive and intransitive stems, as intransitive verbs containing classificatory medials also have theme or patient subjects.

This generalization appears to hold cross-linguistically, although a precise characterization has been subject to differing interpretations. Baker (1988) proposes that similar forms in other languages are 'unaccusative' verbs of the type discussed in Ch. III. That is, the surface subjects are underlying direct objects. Baker (1988: 88-89) argues that the generalization is syntactic, i.e. that only objects (including unaccusative subjects) may be incorporated. Rosen (1989: 315) argues that the constraint should be stated in terms of thematic relations, as do Mithun (1984) and diSciullo and Williams (1987).

¹ This is discussed in Ch. VII. See also Wolfart (1971, 1973); Bloomfield (1927b, 1962).

² K. Allan (1977) discusses general properties of classifier systems; Denny (1976) discusses Algonquian classifier systems.

Cross-linguistically, classificatory morphemes often are lexicalized versions of incorporated nouns; Mithun (1984) surveys developments of this type. However, if Delaware classificatory medials originally were incorporated nouns, this is no longer recoverable synchronically, since with one or two exceptions, the classificatory medials cannot be related to any freely occurring noun stems. Most of the classifiers bear no relation to any other morphemes. Most of the prototypical classificatory medials can be reconstructed for Proto-Algonquian. Other classifiers, which are formed with a suffix /-ak-/, appear to be based upon incorporated nouns. A few classificatory medials have some resemblance to existing nouns. For example, /-əpee-/ 'water' may be related to the noun stem /nəpəy/ 'water'.

The status of two morphemes which typically occur after medials in verb stems will be discussed. One is the 'post-medial' grammatical marker /-ak-/ which is found following certain medials. Denny (1981) has claimed that cognates of /-ak-/ in other Algonquian languages function to convert incorporated nouns into classificatory medials. However, the Delaware data are not consistent with claiming that this is a synchronically productive mechanism (§4.2). As well, the 'post-medial' /-ee/, conventionally interpreted as marking incorporated stems, also occurs after medials when they are added in secondary derivation to transitive stems (§4.3), and also when they are followed by transitive finals.

The main classificatory medials are listed in (4.2).

(4.2)

/-ahkw-/	'wood/solid'
/-aht-/	'stringlike'
/-eek-/	'sheetlike/flexible'
/-əp-ee-/	'water'
/-eel-/	'number classifier'
/-askw-/	'grass'
/-aloo-/	'pointed'
/-ax-/	'processed wood'
/-əčee-/	'body/shape'
/-əšee-/	'volume/extent'
/-aal-/	'hole'
/-aam-/	'granular'

Mention may be made of the morpheme /-aapoxk-/. Historically this was a classificatory medial meaning 'mineral solid'. Its use is limited to the formation of numeral particles of the 'one hundred' series, such as nkwaataapoxk(w)ə 'one hundred'. This medial, followed by abstract noun final /-w/ (§5.1.3), is found in several forms in Brinton and Anthony (1888), a word list probably compiled in the late eighteenth century, whose entries represent one or more unidentified Delaware dialects. Although Albert Anthony, Brinton's Delaware speaking consultant, understood at least one of these forms, they were not recognized by my consultants. The forms found in Brinton and Anthony are (unphonemicized): "Pemapuchk" 'rock' (p. 111); "Schingachteyapuchk" 'flat rock' (p. 128); "Delachgapachgunk" 'in the cleft of a rock' (p. 29).

4.1.1 /-ahkw-/ 'wood solid'

The classificatory medial /-ahkw-/ is used in stems which denote wooden/solid objects. It occurs before both transitive and intransitive verb finals. In noun stems it does not co-occur with a final; it occupies stem-final position. I will argue that nouns containing this morpheme are formed with the noun final /-w/ (§5.3), which is subsequently deleted when preceded by a morpheme ending in /-w/.

The following examples show /-ahkw-/ followed by TA final /-ah-w/, or TI /-ah/ 'by tool/instrument' (R29 and R37 apply to the sequence /Cw-ah-/ found in these stems). Please note that in this Chapter most lists of examples have been consigned to the Appendix to Chapter IV. Examples contained in the Appendix are cross-referenced to the appropriate place in this Chapter, both by section number and by example number.

(4.3)

ntəpahkhwaaw
 /nə-təp-ahkw-ah-w-aa-w/
 1-revolve-wood-by tool-TA-3-sg
 'I wind him (e.g. clock); crank him (e.g. car)'

ntaamahkhwaaw
 /nə-t-aam-ahkw-ah-w-aa-w/
 1-Ep-fall over-wood-by tool-TA-3-sg
 'I knock him (solid object) over (by tool/instrument)'

Relatively few stems containing /-ahkw-/ followed by intransitive verb finals were recorded. Several examples of /-ahkw-/ followed by AI final /-əsii/ are listed here.

(4.4)

awahləmahkwsəwak
 /wawahləm-ahkw-əsii-w-ak/
 far-wood-AI-3-pl
 'they are far apart (trees)'

lxav.ahkwsəw
 /laxaw-ahkw-əsii-w/
 fork-wood-AI-3
 'he is a forked tree'

Nouns are formed by adding /-ahkw-/ to roots or to noun stems. The structure of noun stems containing medials is discussed in §5.3.2; examples may be found there. In the following examples, /-ahkw-/ is followed by a 'postmedial' extension /-ee/, possibly to be identified with the AI final /-ee/ found in the examples cited in §4.10.2 above. The post-medial suffix is glossed as 'PM'. These extended stems may be followed by transitive and intransitive verb finals.

(4.5)

paalahkweextoon
 /wə-paal-ahkw-ee-x-t-oo-n/
 3-over/beyond-PM-cause-TI-TI2-3
 'he piles it (wood/solid) over (s.t.)'

noolahkweexəmaawak
 /nə-wəl-ahkw-ee-x-əm-aa-w-ak/
 1-good-wood-PM-cause-TA-3-sg-pl
 'I pile them up nicely, neatly (wood/solid)'

4.1.2 /-aht-/ 'stringlike'

The classificatory medial /-aht-/ forms stems denoting objects possessing the property of being stringlike or flexible. It nearly always occurs followed by the postmedial suffix /-ak-/, except in the noun piimənahtaan 'thread'.³ It occurs productively in nouns followed by the noun final /-w/, and in intransitive verbs, followed by the II final /-at/ or the AI final /-əsii/. Although no examples were recorded of /-aht-ak-/ followed by transitive finals, note the first example in (4.6), which consists of a deverbal noun containing /-aht-ak-/ followed by the TI final /-ən/ 'by hand' and noun final /-iikan/ 'tool, instrument'. Examples of /-aht-ak-/ in nouns are given in (4.6a). Examples of AI and II verb stems containing the sequence /-aht-ak-/ are given in (4.6b). The postmedial suffix /-ak-/ is glossed as 'PM'.

(4.6)

(a) Nouns

s(a)k-aht-ak-ən-iikan-al
grasp-stringlike-PM-by hand-tool-pl
'reins'

piim-ən-aht-ak-w
crooked-stringlike-PM-final
'thread'

(b) II Stems

nk wətahtakat
/nəkwət-aht-ak-at-w/
one-stringlike-PM-II-3
'it is/has one strand'

niišahtakat
/niiš-aht-ak-at-w/
three-stringlike-PM-II-3
'it is/has two strands'

(c) AI Stems

šaax(a)kahtakəsəw
/šaax(a)k-aht-ak-əsii-w/
straight-stringlike-PM-AI-3
'he is straight (stringlike object)'

³ Zeisberger (1887: 197) cites, in an unidentified Delaware dialect, "mbiminate" 'I make thread', which may be phonemicized as /mpiimənahte/.

kwənahtakəsəw
 /kwən-aht-ak-əsii-w/
 long-string-PM-AI-3
 'he is long and stringlike'

4.1.3 /-eek-/ 'sheetlike'

The classificatory medial /-eek-/ denotes entities which are flexible and extended, such as sheets of paper, blankets, or animal hides. This medial was recorded in verb stems where it directly preceded the following verb finals and combinations of prefinal and final: AI /-əsii/ 'abstract final'; AI /-x-iin/ 'lay/be'; II /-x-ən/ 'lay/be'; TA /-ən/ 'by hand'; TA /-ah-w/ 'by tool'; TI /-ən/ 'by hand'; TI /-ah-/ 'by tool'. No examples were recorded of stems in which /-eek-/ was directly followed by a noun final. Examples of /-eek-/ in verb stems are listed in (4.7).

(4.7)

- (a) /-ən/ 'by hand'

nooleekənaaw
 /nə-wawəl-eek-ən-aa-w/
 1-good (redup)-sheetlike-by hand-3-sg
 'I fold him (sheet-like object)'

nooleekənəmən
 /nə-wəl-eek-ən-əm-ən/
 1-good-sheetlike-by hand-TI1b-3
 'I fold it (sheet-like object)'

- (b) /-x-iin/ 'lay/be' (AI)

nkəwəteekiixiin
 /nəkəwət-eek-ii-x-iin-w/
 one-sheetlike-Ep-lay-AI-3
 'he is is one layer'

niiʃeekiixiin
 /niiʃ-eek-ii-x-iin-w/
 two-sheetlike-Ep-lay-AI-3
 'he is in two layers'

(c) /-x-ən/ 'lay/be' (II)

nkwəteekiixən
 /nək-wət-ee-k-ii-x-ən-w/
 one-sheetlike-Ep-lay-II-3
 'it is in one layer'

niišeekiixən
 /niiš-ee-k-ii-x-ən-w/
 two-sheetlike-Ep-lay-II-3
 'it is in two layers'

(d) /-əsii/ 'abstract final'

niišaapeeksəw
 /niiš-aap-ee-k-əsii-w/
 two-open-sheetlike-AI-3
 'he has two pages (book)'

nxaapeeksəw
 /nax-aap-ee-k-əsii-w/
 three-open-sheetlike-AI-3
 'he has three pages'

aapeeksəw
 /aap-ee-k-əsii-w/
 open-sheetlike-AI-3
 'he (page of book) turns'

Followed by the prefinal /-ah-/ 'by tool/instrument', the medial /-ee-k-/ is common in stems denoting writing, photography, as well as in other forms pertaining to making marks.

(4.8)

čaneekhiikeew
 /čan-ee-k-ah-ii-kee-w/
 wrong-sheetlike-by tool-Ep-AI-3
 'he makes a mistake in writing'

ntəleekhaaw
 /nə-t-əl-ee-k-ah-w-aa-w/
 1-Ep-thus-sheetlike-by tool-TA-3-sg
 'I write on him; write him down'

4.1.4 /-əp-/ 'water'

The suffix /-əp-/ 'water' appears in three forms: /-əp-ee-/ , /-əp-/ (or /-əp-a-/); and /-əp-ee-(a)k-/. The variant /-əp-ee/ forms AI and II verbs and also occurs followed by certain prefinals and verb finals: TA /-ən/ 'by hand'; TI /-hl-at/ 'motion'; TI /-ən/ 'by hand'; AI /-hl-aa/ 'motion'; II /-hl-aa/ 'motion'; II /-x-ən/ 'lay/be'. The variant /-əp-a-/ occurs followed by TA final /-l/ and TI final /-t/. In terms of their occurrence before verb finals, /-əp-ee/ and /-əp-a-/ are in complementary distribution. Examples of /-əp-ee/ forming AI verbs are listed in (4.9a); examples of /-əp-ee/ forming II verbs in (4.9b). I analyse the suffix /-ee/ in these forms as an intransitive verb-forming suffix which is unspecified for gender, as in §2.4.1.

(4.9)

(a) AI stems

psəntpeewak
/pəsənt-əp-ee-w-ak/
buried-water-AI-3-pl
'they are covered in water'

wəntpeew
/wənt-əp-ee-w/
from-water-AI-3
'he leaks'

(b) II stems

psəntpeew
/pəsənt-əp-ee-w/
buried-water-II-3
'it is covered with water'

niiskpeew
/niisk-əp-ee-w/
dirty-water-II
'it is caught in the rain'

Stems containing /-əp-ee-/ may also be followed by other verb-forming suffixes, as in (4.10).

(4.10)

- (a) Preceding /-ən/ 'by hand'

nsookpeenəma
/nə-sook-əpee-ən-əm-aa/
1-pour-water-by hand-TI1b-AI
'I pour out a liquid'

nsihkpeenaawak
/nə-sihk-əpee-ən-aa-w-ak/
1-strain-water-by hand-3-sg-pl
'I strain them by hand'

- (b) Preceding /-x-ən/ 'lay/be'

pootəl-əpee-x-ən
butter-water-lay-II
'cream'

kəlampeexən
/kəlam-əpee-x-ən-w/
still-water-lay-II-3
'it is still water'

kxəpeexən
/kax-əpee-x-ən-w/
large amount-water-lay-II-3
'it is water in a puddle'

- (c) Preceding /-hl-aa/ 'motion'

wčəwpehleew
/wčəw-əpee-hlaa-w/
fill-water-motion-3
'he (as a pail) is filling up with liquid'

pwaxkpehleew
/pwaxk-əpee-hlaa-w/
burst-water-motion-3
'he has smallpox'

- (d) Preceding /-hl-al/ /-hl-at/ 'motion'

mpəsakwəpehlalaaw
/nə-pəsakw-əpee-hl-al-aa-w/
1-stick-water-motion-TA-3-sg
'I paste, glue him together'

mpəsakwəpehlatoon
/nə-pəsakw-əpee-hl-at-oo-n/
1-stick-water-motion-TI-TI2-3
'I paste, glue it together'

The suffixes /-əp-ee/ are found in stems followed by the 'postmedial' (PM) /-ak-/. The stems so formed include II stems formed with the finals /-at/ or /-x-ən/, as well as noun stems formed with abstract noun final /-w/. Verb and noun stems formed in this manner are few in number.

(4.11)

(a) Preceding II /-at/

wələpeekat
/wəl-əpee-ak-at-w/
good-water-PM-II-3
'it is good water'

niiskpeekat
/niisk-əpee-ak-at-w/
dirty-water-PM-II-3
'it is dirty water'

(b) Preceding AI /-x-ən/ 'lay/be'

amankpeekiixən
/mamank-əpee-ak-ii-x-ən-w/
big-water-PM-Ep-lay-II-3
'it is a lot of water'

(c) Preceding Noun Final /-w/

thəpeakw
/tah-əpee-ak-w/
cold-water-PM-final
'well'

The variant /-əpa-/ is most frequently followed by TA /-l/ or TI /-t/, and more rarely is followed by /-tee/ 'heat', as in (4.12).

(4.12)

niiskpalaaw
/nə-niisk-əpa-l-aa-w/
1-dirty-water-TA-3-sg
'I get him wet in rain'

niiskpatoon
 /nə-niisk-əpa-t-oo-n/
 1-dirty-water-TI-TI2-3
 'I get it wet in rain'

paalpateew
 /paal-əpa-t-ee-w/
 over-water-heat-II-3
 'it (heated water) overflows'

4.1.5 /-eel-/ 'numeral classifier'

The medial suffix /-eel-/ occurs in stems pertaining to amounts or quantities. That is, it functions as a numeral classifier. In AI verbs, /-eel-/ frequently occurs with the root /məx-/ 'very, many' followed by no final (4.13a), or by various other sequences of prefinal and AI final (4.13b-e); or in incorporating constructions (4.13f). In II verbs /-eel-/ occurs followed by II final /-ət/ (4.14b). I account for the distribution of /-eel-/ by assuming that unlike most classificatory medials, it is specified for category and diacritic features and therefore may appear in verb stems without a final suffix.

(4.13)

- (a) xweelook
 /məx-eel-w-ak/
 big-number-3-pl
 'they are many'
- (b) xweelaankweewak
 /məx-eel-aankwee-w-ak/
 big-number-lay-3
 'they (many) lay together'
- (c) xweelookwənahkeew
 /məx-eel-ookwən-ahkee-w/
 big-number-night-be away-3
 'he was gone for many nights'
- (d) xweelonšeewak
 /məx-eel-oonšee-w-ak/
 big-number-have children-3-pl
 'they have many children'
- (e) xweeliikaapawəwak
 /məx-eel-ii-kaapaw-ii-w-ak/
 big-number-Ep-stand-AI-3-pl
 'they (many) stand together'

- (f) xweelkooyeew
 /mæx-eel-kooy-ee-w/
 big-number-cow-AI-3
 'he has many cows'

Examples of /-eel-/ with other roots are listed in (4.14). Often stems formed with /-eel-/ denote objects arranged in pairs, as in many of the examples in (4.14).

(4.14)

(a) AI Stems

kiht-eel-ən
 big-number-indef
 'there are lots (of people) (indefinite subject)'

nkwəteelapəwak
 /nəkwət-eel-apii-w-ak/
 one-number-be there-3-pl
 'they stay in the same place'

(b) II Stems

nkwəteeltool
 /nəkwət-eel-t-w-al/
 one-number-II-3-pl
 'they (IN) are in one pair'

niišeeltool
 /niiš-eel-t-w-al/
 two-number-II-3-pl
 'they (IN) are two, in two pairs'

(c) Particles

keexeeli
 /keex-eel-ii/
 how many-number-particle
 'number'

4.1.6 /-askw/ 'grass'

The morpheme /-askw-/ 'grass' presents descriptive problems, which arise because it appears to have two variants, /-askw-/ and /-ask-/, whose distribution is unpredictable.

The suffix /-askw-/ is analysed as a classificatory medial. The basic variant appears to have the form /-askw-/, with /-w/ being deleted sporadically in this morpheme. The sporadic deletion of postconsonantal prevocalic /-w/ has occurred in some other stems. Examples of /-askw-/ were recorded in (a) noun stems, (b) AI classificatory stems, and (c) verb stems resembling incorporating stems.

Examples of /-askw-/ in primary nouns are listed in (4.15).

(4.15)

šəwaskwa! /šəw-askw-a!/ sour-grass-pl	'rhubarb (pl.)'	IN
miixaskw /miix-askw/ hairy-grass	'grass'	IN
xəwiixaskwa! ⁴ /məxəw-iixaskw-a!/ old-grass-pl	'old grass (pl.)'	IN
xwaskwiim ⁵ /məx-askw-ii-m/ big-grass-Ep-berry, seed	'corn'	IN

The examples in (4.16) show /-askw-/ and /-ask-/ used in intransitive classificatory verb stems.

(4.16)

- (a) kwənaskwat
/kwən-askw-at-w/
long-grass-II-3
'it is long grass'

⁴ This stem consists of the root /məxəw-/ followed by /-iixaskw/ 'grass', the bound variant of the noun stem miixaskw 'grass' immediately above. This type of noun is discussed in Chapter VII.

⁵ This form may represent a medial use of /-askw-/, or else /-iim/ 'berry' is being added to a non-occurring noun stem.

- (b) skapaskat⁶
 /səkap-ask-at-w/
 wet-grass-II-3
 'it is wet grass'

The examples in (4.17) could be called 'incorporated' stems, since /-askw-/ and /-ask-/ are followed by the 'post-medial' /-ee/ which characterizes Noun Incorporation constructions.

(4.17)

- (a) kwənaskweeyeew
 /kwən-askw-ee-y-ee-w/
 long-grass-PM-Ep-II-3
 'the grass is long'
- (b) čahkwaskeeyeew
 /čahkw-ask-ee-y-ee-w/
 short-grass-PM-Ep-II-3
 'it is short grass'
- (c) mpoxwiinaskwe
 /nə-pəxiin-askw-ee/
 I-remove-grass-AI
 'I husk corn'

The examples in (4.18) suggest secondary denominal derivation from noun stems which were not recorded. That is, these stems appear to have been formed by adding a final to a non-occurring noun stem.

(4.18)

kaanš-askw-ii-w
 great-grass-II-3
 'there's lot's of weeds'

laaw-askw-e
 middle-grass-particle final
 'in the middle of the weeds' (particle)

⁶ This form was pronounced skapaskwat by some speakers.

In the examples in (4.19) /-ask-/ is followed by the prefinal /-ah-/ 'by tool' in derivatives of transitive stems. The variant /-askw-/ was not recorded in any of these stems.

(4.19)

təmaskhiikan
/təm-ask-ah-iikan/
sever-grass-by tool-noun final
'scythe'

moonaskhiikeewak
/moon-ask-ah-ii-kee-w-ak/
extract-grass-by tool-EP-AI-3-pl
'they hoe'

moonaskham
/moon-ask-ah-am-w/
extract-grass-by tool-TI1a-3
'he hoes'

4.1.7 /-aloo-/ 'pointed'

The classificatory medial /-aloo-/ was recorded in a small number of forms. In the examples recorded, /-aloo-/ was followed by the AI verb final /-əsii/ (§2.4.2.1) or the II verb final /-ee/ 'state' (§2.5.1.1). In example (4.20f) 'scissors', /-aloo-/ is followed by the TI final /-ən/ 'by hand' and the deverbal nominalizer /-iikan/ (§6.1.1).

(4.20)

- (a) kiinaloosəw
/kiin-aloo-əsii-w/
sharp-pointed-AI-3
'he is sharp'
- (b) mataloosəw
/mat-aloo-əsii-w/
bad-pointed-AI-3
'he is dull'
- (c) kiin-aloo-wə-y-ee-w
sharp-pointed-Ep-II-3
'it is sharp'
- (d) mat-aloo-wə-y-ee-w
bad-pointed-Ep-II-3
'it is dull'

- (e) lehlxawalooyeek
/leh-laxaw-aloo-y-ee-k/
redup-forked-pointed-Ep-II-3 conj
'fork'
- (f) takwalooniikan
/takw-aloo-ən-iikan/
together-pointed-by hand-tool
'scissors'

In certain examples /-aloo-/ was recorded as /-aloowə-/ or possibly as /-alowə-/ before epenthetic /-y-/ (4.20c-d), but /-aloo-/ was recorded before /-y-/ in (4.20e). This variation may represent diphthongization of long /-oo/ before /-y/, but there are not enough data to draw firm conclusions.

4.1.8 /-ax-/ 'processed wood'

The suffix /-ax-/ was recorded in a small number of forms. The vowel of /-ax-/ is frequently syncopated by R31, as in many of the examples in (4.21). In noun stems, /-ax-/ is followed by postmedial /-ak-/ (4.21a-b). Noun stems are formed by adding /-ax-/, followed by postmedial /-ak-/ and noun final /-w/, to roots (4.21a), and rarely, to noun stems (4.21b). The sequence /-ax-/ followed by /-ak-/ was not recorded in verb stems, with one exception, which is discussed in §4.2. The medial /-ax-/ is, historically, the incorporated form of /məx-əs/ 'wood' (the /-ə/ ~ /-a/ alternation is phonologically regular).

(4.21)

(a) Added to Roots

wəlxakw /wəl-ax-ak-w/ good-wood-PM-final	'kindling'
askxakwal /ask-ax-ak-w-al/ raw-wood-PM-final-pl	'green wood' (pl.)
kaahxakwal /kaah-ax-ak-w-al/ dried-wood-PM-final-pl	'dried wood' (pl.)

peenxwakwal 'dried wood' (pl.)
 /peenkw-ax-ak-w-al/
 dried-wood-PM-final-pl

wšeeexakwal 'wood chips'
 /wəšee-ax-ak-w-al/
 edge (?) -wood-PM-final-pl

kaatxakwal⁷ 'cord wood' (pl.)
 /kaat-ax-ak-w-al/
 cord-wood-PM-final-pl

(b) Added to Noun

wčapihxxakw 'root'
 /wəčapihk-ax-ak-w/
 medicine-wood-PM-final

The morpheme /-ax-/ also occurs in a small number of AI verbs, without the postmedial suffix /-ak-/. Structures of this type are analysed in §4.2.

4.1.9 /-əčee-/ 'body, shape'

The medial /-əčee-/ 'body, shape' forms verb stems of all four subtypes, but was not recorded in noun stems.⁸ The exact contribution of /-əčee-/ to the meaning of stems is not always clear.

(4.22)

(a) Preceding /-ən/ 'by hand'

niiskčeenaaw
 /nə-niisk-əčee-ən-aa-w/
 1-dirty-body-by hand-3-sg
 'I dirty him (by hand)'

mpəkwčeenaaw
 /nə-pəkw-əčee-ən-aa-w/
 1-hole-body-by hand-3-sg
 'I open him up; take the insides out of him; operate on him (as a doctor)'

⁷ The root /kaat-/ is a borrowing from English 'cord'.

⁸ However, note wiixčee (/wiix-əčee-w/ hairy-body-noun final) 'wolf'. See §5.1.2 for discussion of noun formation with the final /-w/.

- (b) Preceding /-x-/ 'lay/be'
- ntoonkčeexəmaaw
/nə-toonk-əčee-x-əɪn-aa-w/
1-open-body-lay/be-TA-3-sg
'I leave him (e.g. book, car) open'
- ntoonkčeeextoon
/nə-toonk-čee-x-t-oo-n/
1-open-body-lay-TI-TI2-3
'I leave it open'
- (c) Preceding AI /-əsii/ 'abstract final'
- wələčeesəw
/wəl-əčee-əsii-w/
good-body-AI-3
'he is evenly, smoothly, nicely shaped'
- pakčeesəw
/pak-əčee-əsii-w/
flat-body-AI-3
'it is flat'
- (d) Preceding II /-ee/ 'abstract final'
- wələčeeeyew
/wəl-əčee-y-ee-w/
good-body-Ep-II-3
'it is evenly, smoothly, nicely shaped'
- pakčeeeyew
/pak-əčee-y-ee-w/
flat-body-Ep-II-3
'it is flat'
- (e) Preceding /-hk-/ 'by foot/body'
- ntahpčehkawaaw
/nə-t-ahp-əčee-hk-aw-aa-w/
1-Ep-upon-body-by foot/body-TA-3-sg
'I step upon him'
- kpasčehkamən
/kə-pas-əčee-hk-am-ən/
2-split-body-by foot/body-TI1a-3
'you kick it'
- pakčehkamən
/wə-pak-əčee-hk-am-ən/
3sg-flat-body-by foot/body-TI1a-3
'he flattens it (by foot/body)'

- (f) Preceding /-h/ 'cause'
 mpakčeehaaw
 /nə-pak-əčee-h-aa-w/
 1-flat-body-caus-3-sg
 'I flatten him'
- (g) Preceding /-oox-ee/⁹ 'walk'
 ašahkčeewxew
 /ašahk-əčee-wxee-w/
 backwards-body-walk-3
 'he walks backwards'
- (h) Preceding /-hl-aa/ 'motion'
 wihwiimpčehleew
 /wihwiimp-əčee-hl-aa-w/
 wriggle (redup)-body-motion-AI-3
 'he wriggles'
 mpiimčehla
 /nə-piim-əčee-hl-aa/
 1-diagonal-body-motion-AI
 'I fall sideways'
 tatəpčehlaak
 /tatəp-əčee-hl-aa-k/
 revolve (redup)-body-motion-AI-3 (conjunct)
 's.t. that is rolling around'
- (i) Preceding /-apii/ 'sit'
 ntaamčeepe
 /nə-t-aam-əčee-apii/
 1-Ep-back-body-sit
 'I lean back while sitting'
- (j) Preceding /-pwii/ 'eat'
 nəwiinkčeeppi
 /nə-wiink-əčee-pw-ii/
 1-glad-body-eat-AI
 'I enjoy my food'
 nšamčeeppi
 /nə-šam-əčee-pw-ii/
 1-greasy-body-eat-AI
 'I eat greasy food'

⁹ The AI final /-ooxee/ 'walk' has an allomorph /-wxee/ after long vowels.

Verbs relating to driving are made with this suffix, usually followed by /-hl-aa/ 'motion', or, in one example followed by TI /-hl-at/.

(4.23)

kwaxkčehleew
/kwaxk-əčee-hl-aa-w/
across-body-motion-AI-3
'he drives across (the river)'

wtaləməčehlatoon
/wə-t-aləm-əčee-hl-at-oo-n/
3sg-Ep-away-body-motion-TI-TI2-3
'he drives away with it'

With a unique element /-aak-/, this medial makes AI verbs with the meaning 'jump'. The morpheme /-aak-/ was not recorded in any other stems. All examples recorded occur before the final /-hl/ 'motion'.

(4.24)

ktaakčehl
/kət-aak-əčee-hl-w/
out-sudden-body-motion-3
'he jumps out'

apaamaakčehl
/papaam-aak-əčee-hl-w/
about (redup)-sudden-body-motion-3
'he jumps about'

This medial has an allomorph /-əča-/ which appears before certain prefinals and finals pertaining to heat: TA /-əs-w/; TI /-əs-/; AI /-sii/; II /-tee/ (see §3.2.3 for discussion).¹⁰

¹⁰ Voorhis (1983: 79) discusses the same alternation occurring in the Kickapoo cognate in /-əčee-/, when followed by cognates of the same prefinals and finals mentioned in this paragraph.

(4.25)

- (a) nəkəčasaaw
/nə-nəkək-əčec-əs-w-aa-w/
1-black-body-heat-TA final-3-sg
'I dye him black'
- (b) nəkəčasəmən
/nə-nəkək-əčec-əs-əm-ən/
1-black-body-heat-TI1b-3
'I dye it black'
- (c) nsəkčasəw
/nəkək-əčec-sii-w/
black-body-heat-3
'he scorches, burns black'
- (d) nsəkčateew
/nəkək-əčec-tee-w/
black-body-heat-3
'it scorches, burns black'

4.1.10 /-əšee-/ 'dimension'

The meaning of this medial is unclear. Some examples suggest that it refers to the dimensions of an entity, or the extent or volume of space that an entity takes up. I have tentatively glossed it as 'dimension'. In a large number of examples, /-əšee-/ occurs before the suffix /-nkw-/ 'face'; these are discussed separately in §4.6. Examples of /-əšee-/ followed by transitive and intransitive verb finals are listed in (4.26).

(4.26)

- (a) AI Stem
pkwəšeesəw
/pək-w-əšec-əsii-w/
hole-dimension-AI-3
'he is/has a hole'
- (b) II Stem
xwəšeeew
/məx-əšec-y-ec-w/
big-dimension-Ep-II-3
'it is big, deep (hole, etc.)'

pkwəʃeeyew
/pəkw-əʃee-y-ee-w/
hole-dimension-Ep-II-3
'it is/has a hole'

ʃaapwʃeeyew
/ʃaapw-əʃee-y-ee-w/
through-dimension-Ep-II-3
'it has a hole right through'

kwənəʃeeyew
/kwən-əʃee-y-ee-w/
long-dimension-Ep-II-3
'it is deep (hole, well, river)'

- (c) Preceding /-əʃ-/ 'cut'
- nʃaapwʃeeʃəmən
/nə-ʃaapw-əʃee-əʃ-əm-ən/
1-through-dimension-by cutting-TI1b-3
'I cut through it'
- (d) Preceding /-x-t-/ 'lay/be'
- ntawʃeextoon
/nə-taw-əʃee-x-t-oo-n/
1-open-dimension-cause-TI-TI2-3
'I leave it (wide) open'
- (e) Preceding /-ən-/ 'by hand'
- ntaaxkʃeenəmən
/nə-taaxk-əʃee-ən-əm-ən/
1-retract-dimension-by hand-TI1b-3
'I pull it down (e.g. eye)'

4.1.11 /-aal-/ 'hole'

The medial /-aal-/ 'hole' appears to be related to the root /waal-/ which occurs in a few stems such as /waal-ee/ 'be a hole'. This medial is followed by postmedial /-ak-/. Examples are rare, and the speakers I consulted were not always confident about using forms containing this morpheme.

(4.27)

kwənaalakat 'it is a deep hole'
/kwən-aal-ak-at-w/
long-hole-PM-II-3

tatəpaalakat 'it is a round hole, tunnel'
 /tatəp-aal-ak-at-w/
 rotate (redup)-hole-PM-II-3

This morpheme occurs before the body part medials /-iinkw-/ 'face' and /-axoon-/ 'voice' (§4.6).

4.1.12 /-aam-/ 'granular'

This suffix refers to items that are fine in grain, such as flour, sand, or in some other way have a fine texture. I only recorded examples in which /-aam-/ was preceded by the root /wəl-/ 'good'.

(4.28)

wəlaamat
 /wəl-aam-at-w/
 good-granular-II
 'it is fine in grain (e.g. flour, silver)'

noolaamšaaw
 /nə-wəl-aam-əš-w-aa-w/
 1-good-granular-by cutting-TA-3-sg
 'I cut him fine'

noolaamšəməən
 /nə-wəl-aam-əš-əm-ən/
 1-good-granular-by cutting-TI1b-3
 'I cut it fine'

wəl-aam-ii=leekəw
 good-granular-final=sand
 'fine sand'

4.2 Classificatory Medials Followed by /-ak-/

Certain of the classificatory medials are followed by a morpheme /-ak-/, with allomorph /-k-/, which is traditionally referred to as a 'postmedial' (Bloomfield (1946)). The classificatory medials which co-occur with /-ak-/ include those listed in (4.29).

(4.29)

(a) /-aal-ak-/ 'hole'
 (b) /-ax-ak-/ 'processed wood'

- (c) /-əpee-ak-/ 'water'
 (d) /-aht-ak-/ 'stringlike'

There are also certain nouns, not usually considered to contain classificatory medials, which appear to contain /-ak/. The significance of the occurrence of /-ak-/ is uncertain.

(4.30)

- (a) šəwan-ak-w 'White man'
 (b) waal-ak-w 'hole'
 (c) wənt-ak-w 'side, direction'

It is difficult to make generalizations about the morphemes which precede /-ak-. For example, (4.29a) /-aal-ak-/ is related in some way to the root /waal-/ 'hole' found in waalakw 'hole', and waalheew 'he digs a hole'. The most common of the four forms is (4.29c) /-əpee-k/ 'water', which is composed of /-əp-ee/, itself an extended variant of /-əp-/ 'water'. The element /-ak-/ also occurs in a large number of forms following the morpheme /-eew-/ 'meat' in nouns such as šəw-eew-ak-w 'salt meat' (§5.3.0), but does not form verb stems.

Denny (1981), discussing stems of similar structure in other Algonquian languages, proposes that /-ak-/ 'converts' incorporating medials into classificatory medials. He cites examples from the related languages Cree and Ojibwa which support this interpretation and suggest that this mechanism is relatively productive in those languages. However the distribution of /-ak-/ in Delaware does not support this analysis, although this may be the historical origin of /-ak-. For example, the classificatory medial /-ax-/ 'wood' (§4.1.8) belongs to this pattern, at least from a historical perspective, since there are a few stems which have an 'incorporated' variant of /-ax-/ without /-ak-/ immediately before the AI final /-ee/ which typically occurs in incorporating stems (§2.4.2.3).

(4.31)

man-ax-ee-w
 gather-wood-AI-3
 'he collects wood'

In this stem /-ax-/ is the incorporating form of the noun root /māxəs/ 'wood', which occurs in the present-day stem xwəs, from underlying /māx-əs/ (/ə-əs/ is a noun suffix; see §6.2.1). However in the present-day language there is no evidence that this process of marking certain uses of incorporated nouns with /-ak-/ is productive. Rather /-ak-/ is now a suffix with very limited distribution, occurring in only a few fixed combinations.

4.3 Classificatory Medials in Secondary Derivation

Classificatory medials may occur in verb stems in which a classificatory medial followed by /-ee/ appears after a TA or TI verb stem. Most of the examples recorded contained /-ahkw-/ 'wood/solid' (§4.1.1). The suffix /-askw-/ 'grass' (§4.1.6) is also found in this construction. In the following examples /-ahkw-/ is followed by the AI final /-ee/; in forms of this type the classificatory medial is added to a transitive stem formed with the prefinals /-ah-/ 'by tool' or /-əš-/ 'by cutting edge' (§2.1.1). The other classificatory medials do not appear to occur in this construction.

(4.32)

(a) /-ah-/ 'by tool'

paalhahkweew
/paal-ah-ahkw-ee-w/
over/beyond-by tool-wood-AI-3
'he hits (an object) over [farther than intended]'

mpashahkwe
/nə-pas-ah-ahkw-ee/
1-split-by tool-wood-AI
'I split wood'

mpoohahkwe
/nə-pooh-ahkw-ee/
1-cut-wood-AI
'I cut splints'

taliinkhwahkweew
/taliinkw-ah-ahkw-ee-w/
beat-by tool-wood-AI-3
'he knocks on metal'

tiiwhahkweew
 /tiiw-ah-ahkw-ee-w/
 make noise-by tool-wood-AI-3
 'he pounds/hits/makes a noise on wood/solid'

kaw-ah-ahkw-ee-w
 prostrate-by tool-wood-AI-3
 'he fells trees, knocks trees down'

- (b) /-əš/ 'by cutting'

ntatəməšahkwe
 /nə-tatəm-əš-ahkw-ee/
 1-sever (redup)-by cutting-wood-AI
 'I cut down trees'

- (c) /-askw-/ 'grass'

mpoxwiinaskwe
 /nə-pəxiin-askw-ee/
 1-peel-grass-AI
 'I husk corn'

4.4 Noun Incorporation

4.4.1 Introduction

The term noun incorporation (NI) is conventionally used to refer to cases in which a noun stem appears to occur as a constituent within a verb stem. In recent years the study of NI has become the focus of increased attention (Baker (1988); Mithun (1984, 1986); Rosen (1989); Sadock (1985, 1986), diSciullo and Williams (1987)). Noun incorporation constructions appear to exist at the interface of syntax and morphology, creating single complex words out of discrete words. Accounting for the resulting 'mismatch' between syntax and morphology has led some investigators to analyse noun incorporation as syntactic in nature, and others to analyse it as a primarily lexical phenomenon.

Stems which are characterized as involving noun incorporation may often appear to be syntactically formed. However noun incorporation constructions frequently manifest characteristics which are not consistent with syntactic derivation. Noun incorporation is sometimes relatively unproductive, even in languages which are treated as 'syntactic' in-

corporating languages. Often noun incorporation constructions appear to be 'frozen' in that stems manifesting noun incorporation may have the status of lexicalized units. They may have idiomatic meanings, which are not ordinarily found in units formed by syntactic rule. Restrictions on combinations of nouns and predicates may be arbitrary or idiosyncratic.

Although Noun Incorporation constructions in Algonquian languages are conventionally said to contain incorporated 'medials', this description is misleading since the 'medials' which appear in these constructions are usually related to free noun stems. I will refer to all of these as bound variants of noun stems.¹¹ The bound variants of noun stems which are found in Noun Incorporation constructions frequently display minor phonological differences which differentiate them from the corresponding free noun stems. See Ch. VII for discussion and exemplification.

Constructions which are traditionally referred to as Noun Incorporation, are from a morphological point of view, usually a type of compounding. In her cross-linguistic survey of noun incorporation, Mithun (1984) divides noun incorporation into four types, ranging from simple noun-verb compounds to 'fossilized' incorporation. Investigators of noun incorporation have not claimed that every case of noun incorporation should be analysed as requiring a syntactic derivation.

Arguments for analysing Noun Incorporation as requiring a movement rule are usually based on data which point to the existence of discontinuous dependencies (Baker (1988: 92-105)). The relevant data would be of the following type. A noun which is incorporated into a verb behaves as the head noun of a noun phrase in the sentence in which it occurs. That is, there is a discontinuous dependency between the incorporated noun and a 'headless' noun phrase. This dependency can be accounted for by assuming that the noun is generated as the head of the noun phrase and then combines with the verb by a syntactic

¹¹ Delaware 'classificatory medials' are discussed in §4.1.

movement rule.¹² A construction which most commonly exhibits this type of discontinuous dependency involves the stranding of the possessor in a possessive noun phrase whose head noun has been incorporated into a verb stem. Sadock (1980) claims that data of this type exist in West Greenlandic Eskimo. Similarly, Baker (1988) argues that Mohawk contains constructions of the relevant type.

My investigation of Delaware has not revealed any evidence that Delaware incorporated nouns are generated externally. Sentences such as 'John took off the man's coat' do not occur with the possessed noun 'coat' incorporated into the verb, stranding the possessor. Delaware Noun Incorporation constructions appear to be substantially irregular. Some nouns never appear in incorporating constructions, while others freely do so. Some roots or verb stems occur with incorporated nouns while others never do.

There are a number of constructions in Delaware in which what appear to be noun stems appear within noun or verb stems. The first type is represented by the compound nouns which consists of a root or stem followed by a bound variant of a noun stem (4.33a). These compound noun stems are discussed in Chapter VII. They may be converted into AI possessive verbs by suffixation of the final /-aa/ (§3.2.1). The second major type is noun incorporation, consisting of a root or a verb stem which is followed by a bound variant of a noun stem and an AI verb suffix /-aa/ or /-ee/ (4.33b). The third major type is noun incorporation, consisting of a root followed by a 'body part' noun stem and an AI final /-aa/ or /-ee/. Body part forms are usually considered a distinct subtype. In particular, body part forms, when not occurring in Noun Incorporation constructions, are dependent (obligatorily possessed) nouns. Often, when occurring in noun incorporation con-

¹² Mellow (1989) uses data involving stranded demonstrative elements in Cree, a language related to Delaware, to argue for a movement analysis of noun incorporation in Cree. This argument is nondemonstrative, since he does not show that headless noun phrases containing 'stranded' demonstratives do not occur in contexts where noun incorporation is not involved (see Mithun (1984) and diSciullo and Williams (1987) for a discussion of this point).

structions, the bound variant is suppletive; other non-dependent noun stems rarely have suppletive bound variants.

(4.33)

- (a) wəskooškooš
/wəsk-ooškooš/
new-pig
'young pig'
- (b) načiičəwaakaneew
/nat-iičəwaakan-ee-w/
fetch s.t.-food-AI-3
'he goes after food'
- (c) aniiskənaxkeew
/naniisk-ə-naxk-ee-w/
dirty (redup)-Ep-hand-AI-3
'he has dirty hands'

Let us consider the distribution of body part stems. In many cases the body part stem is equivalent to the corresponding stem which occurs in non-incorporating constructions, usually as a dependent (obligatorily possessed) noun, as in (4.3).

(4.34)

- (a) ksaaksiita
/kə-saak-siit-aa/
2-protrude-feet-AI
'your feet stick out'
- (b) ksiit
/kə-siit/
2-foot
'your foot'

Some body part stems have a suppletive form when they occur in incorporating constructions, as in (4.35).

(4.35)

- (a) ksaakaantpa
/kə-saak-aantəp-aa/
2-protrude-head-AI
'your head sticks out'

- (b) kiil
/kə-iil/
2-head
'your head'

Body part incorporated nouns usually occur adjoined to a root, as in (4.34) and (4.35) above. They are followed by either an AI verb final /-aa/ or /-ee/ (§2.4.2.3). These suffixes are referred to as the 'incorporating' finals. When a body part medial is followed by another derivational suffix (i.e. a verb final), the body-part medial is always followed by a morpheme of the form /-ee/, sometimes called postmedial (PM) /-ee/. Compare (4.34a) and (4.36).

(4.36)

- (a) ksaaksiita
/kə-saak-siit-aa/
2-protrude-feet-AI
'your feet stick out'
- (b) saaksiiteexiin
/saak-siit-ee-x-iin-w/
protrude-foot-PM-lay-AI-3
'he lays with feet sticking out'
- (c) nəkwətəkaate
/nə-nəkwət-ə-kaat-ee/
1-one-Ep-leg-final
'I use one leg'
- (d) nəkwətkaateexiin
/nəkwət-kaat-ee-xiin/
one-leg-final-concrete final
'he has one leg'

It is sometimes argued that the suffix /-ee/ which occurs in Noun Incorporation constructions is the AI final /-ee/ discussed above (Denny (1981)). That is, there is no separate 'postmedial' morpheme /-ee/, simply the AI final /-ee/. As a result, verbs such as (4.36b

and d) are assumed to be derived from AI stems by the suffixation of /-x-iin/. However, as mentioned above, some 'incorporating' stems are formed with the AI final /-aa/, as in (4.36a), but others are formed with /-ee/, as in (4.36c).

Noun incorporation which involves nouns other than body part stems follows two main patterns. In the first, a noun appears between a transitive verb stem and a final suffix, either /-ee/ or /-aa/.

(4.37)

moonhihpəneew
/moon-ah-ihpən-ee-w/
extract-by tool-potato-AI final-3
'he digs for potatoes'

/moon-ah-w/
'dig someone up by tool'

In the second pattern, a noun stem appears between a verb root and a final, either /-ee/ or /-aa/, as in (4.38).

(4.38)

moonaalaxkwsiiiteew
/moon-aalaxkwsiiit-ee-w/
extract-bean-AI final-3
'he digs for beans'

It is unclear why this difference occurs, or what its significance is. It should be noted that Mithun (1986: 32) contends that "In incorporating languages, a verb minus its I[n]corporated N[oun] is still a well-formed verb ...". This is not the case in Delaware. AI stems formed according to the pattern exemplified in (4.38) do not exist in comparable forms minus the incorporated noun.

The following roots are among those which have been recorded with incorporated noun stems other than body part medials.

(4.39)

/aašəw-/	'exchange, across'
/laap-/	'again'
/moon-/	'dig'
/kəšiix-/	'wash'
/wəyak-/	'sufficient'
/šam-/	'grease'

Examples are given in (4.40) below.

(4.40)

(a) /aašəw-/

aašəwəheemptew
/aašəw-ahēemp t-aa-w/
exchange-shirt-AI-3
'he changes his shirt'

ntaašəwahksəna
/nə-t-aašəw-ahəsən-aa/
1-Ep-exchange-shoe-AI
'I change my shoes'

ktaašəwəhpapoonahna
/kə-t-aašəw-ahpəpooon-aa-hna
2-Ep-exchange-chair-AI-1pl
'we (inc.) trade chairs'

ntaašəwiiipəlooka
/nə-t-aašəw-ii-pəlook-aa/
1-Ep-exchange-Ep-pants-AI
'I change my pants'

(b) /laap-/

laapahksəna
/nə-laap-ahkəsən-aa/
1-again-shoe-AI
'I change shoes'

(c) /moon-/

moonaalaxkwsiiiteew
/moon-aalaxkwsiiit-ee-w/
extract-bean-AI-3
'he pulls beans'

(d) /kəʃiix-/

kʃiixiikwahmeew
 /kəʃiix-iikwahm-ee-w/
 wash-house-AI-3
 'he scrubs the floor'

(e) /wəyak-/

wəyakiičəwaakaneew
 /wəyak-iičəwaakan-ee-w/
 in abundance-food-AI-3
 'he has plenty of food'

(f) /ʃam-/

ʃamaatpəniikaneew
 /ʃam-aatəpəniikan-ee-w/
 grease-wagon-AI-3
 'he greases a wagon'

The verb stems listed in (4.41) below have been recorded with incorporated (non body part) nouns.

(4.41)

/kət-ən-/	'take out, remove by hand'
/moon-ah-w-/	'dig (by tool)'
/naa-t-/	'fetch s.t.'
/nih-l-/	'kill s.o.'
/paxk-ən-/	'break s.o./s.t. off (by hand)' ¹³
/pəxw-aʃ-w-/	'peel s.o.'
/piint-/	'insert'
/kahk-ah-w-/	'scrape'

Examples of stems undergoing noun incorporation are given in (4.42) below.

(4.42)

(a) /kətən-/

ktənahksəneew
 /kətən-ahkəsən-aa/
 take off-shoe-AI
 'he takes off his shoes'

¹³ The TA and TI variants of this stem are homophonous.

nkətənašiikana
/nə-kətən-ašiikan-aa/
1-take off-sock-AI
'I take off my socks'

ktəniipəlookeew
/kətən-ii-pəlook-aa-w/
take off-Ep-pants-AI-3
'he takes off his pants'

ktəniikooṭeew
/kətən-ii-kooṭ-aa-w/
take off-Ep-coat-AI-3
'he takes off his coat'

(b) /moon-ah-w/

moonhihpəneew
/moon-ah-w-ihpən-ee-w/
extract-by tool-potato-AI-3
'he digs up potatoes'

(c) /naat-/

naačiīčəwaakaneew
/naat-iičəwaakan-ee-w/
go after-food-AI-3
'he fetches food'

(d) /nihil-/

nihlawehleešoošeew
/nihil-awehleešooš-ee-w/
kill-bird-AI-3
'he kills a bird'

nihlaxkookeew
/nihil-axkook-ee-w/
kill-snake-AI-3
'he kills a snake'

nihliikiipšeew
/nihil-iikiipəš-ee-w/
kill-chicken-AI-3
'he kills a chicken'

nihliimaxkweew
/nihil-ii-maxkw-ee-w/
kill-Ep-bear-AI-3
'he kills a bear'

nihloočeeweew
/nihil-oočeew-ee-w/
kill-fly-AI-3
'he kills a fly'

(e) /paxkən-/

mpaxkənaapələʃe
/nə-paxk-ən-aapələʃ-ee/
1-break off-apple-AI
'I pick apples'

mpaxkəniičeeliise
/nə-paxk-ən-ii-čeeliis-ee/
1-break off-Ep-cherry-AI
'I pick cherries'

(f) /pəxəʃw-/

pxwaʃihpəneew
/pəx-aʃ-w-ihpən-ee/
peel-potato-AI-3
'I peel potatoes'

(g) /piint-/

kpiintaʃiikana
/kə-piint-aʃiikan-aa/
2-put on-sock-AI
'you put on socks'

kpiintheempta
/kə-piint-aheempət-aa/
2-put on-shirt-AI
'you put on a shirt'

(h) /piintən-/

mpiintənahksəneenaaw
/nə-piintən-ahksən-ee-n-aa-w/
1-put on-shoe-PM-by hand-3-sg
'I put shoes on him'

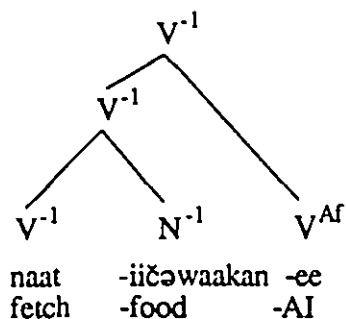
mpiintəniiwanta
/nə-piintən-ii-want-aa/
1-put on-Ep-mitts-AI
'I put on my mitts'

(i) /kahk-ah-w-/

nkahkhihpəne
/nə-kahk-ah-w-ihpən-ee/
1-scrape-by tool-TA-potato-AI
'I scrape potatoes'

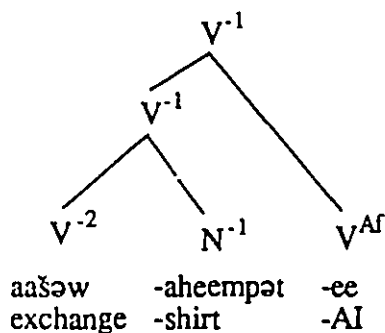
In the case of noun incorporation where the left hand member is a verb stem, the relevant word structure tree may be represented as in (4.43).

(4.43)



Where the left-hand member is a root, the structure may be represented as in (4.44).

(4.44)



Since there appear to be only a limited number of roots which form incorporating stems, they may have some property which distinguishes them from other roots. For instance most Delaware roots are unspecified for syntactic features (§1.6). If the incorporating roots were specified [+V, -N], their exceptional nature might force them to occur in obligatorily verbal constructions, even though a violation of the Percolation Convention is caused.

4.4.2 Opaque Noun Incorporation

There is a small class of AI stems which consist of roots followed by an affix with nominal meaning and the AI final /-ee/. The presence of the final /-ee/ suggests that the construction in question may be akin to noun incorporation. However the morpheme between the root and the final does not correspond to a freely occurring noun.

(4.45)

- (a) naačəwaleew
 /naač-əwal-ee-w/
 go after-bundle-AI-3
 'he fetches a load'
- (b) niiskiikeew
 /niisk-iik-ee-w/
 dirty-house-AI-3
 'he has a dirty house'
- (c) mpoxwiinaskwe
 /nə-pəxiin-askw-ee/
 1-peel-grass-AI
 'I husk corn'

Historically these are cases of noun incorporation. The free form of the stem has fallen out of use. In example (4.45a), /-əwal-/ 'bundle' is the incorporated form of a now non-occurring noun stem which may be reconstructed as Proto-Algonquian */-iiwaθ-/ (the phonological correspondences are regular). In example (4.45b), /-iik-/ 'house' is presumably the incorporated form of a noun stem which is now limited to occurrence as a root in, for example, the AI stem /wiik-ii/ 'dwell there'. In example (4.45c) /-askw-/ is the incorporated form of a root (?) 'grass'. Although it will not be pursued here, the incorporating medials in (4.45) could be analysed as 'defective' nouns which obligatorily subcategorize for a root or stem.

In a rare type of construction a classificatory medial followed by the noun final /-w/ is embedded under a transitive verb stem, forming an incorporated construction, as in (4.46).

(4.46)

naatxakweew
/naat-axak-w-ee-w/
go after-wood-noun final-AI-3
'he goes after wood'

4.5 Type C Medials

There is a class of morphemes which will be referred to as Type C medials. The justification for referring to them as 'medials' is purely distributional. They occur between roots and sequences of prefinal and final. The Type C medials are similar to prefinals, in that they fail to specify grammatical category. Many of the Type C medials have restricted distribution. Frequently they appear only before certain sequences of prefinal plus final.

Most of the Type C medials have verbal or predicative meanings. In this respect they do not have the same type of semantic characteristics as either the classificatory medials or the incorporating noun stems.

The main Type C medials are listed in (4.47).

(4.47)

/-aapee-/	'hang'
/-ahtak-/	'run'
/-akw-/	'adhere'
/-alee-/	'derogatory'
/-atax-/	'group'
/-əkwəl-/	'inverse relation'
/-əš-/	'collective'
/-htee-/	'hit, by force'
/-nčəkwee-/	'roll'
/-onkw-/	'sleep'
/-iinkw-/	'smoke'

4.5.1 /-aapee-/ 'hang'

Verbs pertaining to 'hanging' are formed with this medial. All examples recorded are followed by /-aa/ 'motion' (see §2.4.3.5). This morpheme is derived historically from the Proto-Algonquian classificatory medial */-aapyee-/ 'flexible and stringlike'. In present-day Delaware /-aapee-/ has changed its meaning and no longer functions as a classifier.

(4.48)

saakaapehleewal
/saak-aapee-hl-aa-w-al/
protrude-hang-motion-II-3-pl
'they (IN) hang down (or out)'

mpaalaapehlatoon
/nə-paal-aapee-hl-at-oo-n/
1-over/beyond-hang-motion-TI-TI2-3
'I hang it over (s.t.)'

4.5.2 /-ahtak-/ 'run'

This suffix always forms verbs. In all examples recorded it occurs before /-hl-aa/ 'motion'.

(4.49)

apaamahtakihleewak
/papaam-ahtak-ii-hl-aa-w-ak/
around (redup)-run-Ep-motion-AI-3-pl
'they run around (esp. women whose husbands are away during war)'

pəmahtakihleew
/pəmə-ahtak-ii-hl-aa-w/
along-run-EP-motion-AI-3
'he runs along'

4.5.3 /-akw-/ 'adhere, stick'

This medial appears before several verb finals. The prefinal /-akoo-/ 'climb' (§2.4.3.2) may be a variant of /-akw-/.

(4.50)

čiiɣakwihleew
 /čiiɣ-akw-ii-hl-aa-w/
 slide-adhere-Ep-motion-AI-3
 'he, it slides down'

nkwakwtakwəɲəmən
 /nə-kwakwət-akw-əɲ-əm-ən/
 1-try (redup)-adhere-by hand-TI1b-3
 'I pick it up with my fingers, use my hands to pick it up'

4.5.4 /-alee-/ 'derogatory'

The medial /-alee-/ adds the approximate meaning 'damned' to any verb, although it is often difficult to translate this element satisfactorily.

(4.51)

mpwəhwalehteexiin
 /nə-pwəhw-alee-htee-x-iin/
 1-noise-derogatory-hit-lay-AI
 'I fall down as hard as hell'

kəʃəlehləhna
 /kə-kəʃ-alee-hl-aa-hna/
 2-quick-derogatory-motion-AI-1pl
 'we're going damned fast'

mpaapasalehkawaaw
 /nə-paapas-alee-hk-aw-aa-w/
 1-split (redup)-derogatory-by foot/body-TA-3-sg
 'I kick him like hell'

mankaleetəyeew
 /mank-alee-təy-aa-w/
 big-derogatory-backside-AI-3
 'he eats a lot'

4.5.5 /-atax-/ '(be) a group of X'

This suffix appears to form verbs with the meaning 'in groups of...'. All of the relatively few examples collected occur with the final /-ooxwee/ 'walk' (§2.4.26).

(4.52)

nxatxooxweewak
 /nax-atax-oox-ee-w-ak/
 three-group-walk-AI-3-pl
 'they walk in threes'

neewataxooxweewak
 /neew-atax-oox-ee-w-ak/
 four-group-walk-AI-3-pl
 'they walk in fours'

naalanatxooxweewak
 /naalan-atax-oox-ee-w-ak/
 five-group-walk-AI-3-pl
 'they walk in fives'

txatxooxweewak
 /tax-atax-oox-ee-w-ak/
 so many-group-walk-AI-3-pl
 'they walk in groups of so many'

4.5.6 /-əkwal-/ 'inverted, upside down'

The medial /-əkwal-/ appears before a variety of transitive and intransitive finals.

Nearly all examples appear with the root /aapooč-/ 'open'.

(4.53)

aapoočkwaliixiin
 /aapooč-əkwal-ii-x-iin-w/
 open-inverse-Ep-lay-AI-3
 'he lies upside down'

aapoočkwaliixən
 /aapooč-əkwal-ii-x-ən-w/
 open-inverse-Ep-lay-II-3
 'it lies upside down'

4.5.7 /-əš-/ 'collective'

A small number of stems were recorded which contain a morpheme /-əš-/. The meaning of this element is uncertain. I have tentatively glossed it as 'collective'. In the

stems which I recorded /-əʃ-/ appeared before the TA finals /-hkaw/ 'by foot/body' and /-h/ 'cause'.

(4.54)

mpeetʃiihaawak
/nə-peet-əʃ-ii-h-aa-w-ak/
1-hither-collective-Ep-caus-3-sg-pl
'I chase him hither'

nkətʃihkawaaw
/nə-kət-əʃ-ii-hk-aw-aa-w/
1-out-collective-Ep-by foot/body-TA-3-sg
'I send him out'

4.5.8 /-htee-/ 'hit, by force'

The medial /-htee-/ 'hit' forms verbs of all four subtypes. Examples forming transitive stems, with finals TA/TI /-x-əm/, /-x-t/ 'lay/be'; TA/TI /-h/, /-h/ 'cause' are listed in (4.55).

(4.55)

nčaankihteexəmaaw
/nə-čaank-ii-htee-x-əm-aa-w/
1-make cry-Ep-hit-lay-TA-3-sg
'I knock him down and make him cry'

nkwəlapihtheexəmaaw
/nə-kwəlap-ii-htee-x-əm-aa-w/
1-dent-Ep-hit-lay-TA-3-sg
'I dent him by hitting'

Examples forming Intransitive stems, with AI/II /-x-iin/, /-x-ən/ 'lay/be' are listed in (4.56).

(4.56)

ktaniikihteexiin
/kət-aniik-ii-htee-x-iin-w/
out-tooth-Ep-hit-lay/be-AI-3
'he has a tooth knocked out'

laalihteexiin
 /laal-ii-htee-x-iin-w/
 rub-Ep-hit-lay/be-AI-3
 'he rubs/brushes up against s.t. and falls'

4.5.9 /-nčəkwee-/ 'roll'

The medial /-nčəkwee-/ forms verbs relating to rolling. Examples were collected of /-nčəkwee-/ preceding the AI/II final /-hl-aa/ 'motion'; TI /-hl-a/ 'motion'; and AI+O /-aa-hee/ 'throw'.

(4.57)

(a) /-hl-aa/ 'motion'

peečiinčkwehleew
 /peet-ii-nčəkwee-hl-aa-w/
 hither-Ep-roll-motion-AI-3
 'he rolls to here'

təpiinčkwehleew
 /təp-ii-nčəkwee-hl-aa-w/
 revolve-Ep-roll-motion-AI-3
 'he rolls over'

(b) /-hl-a/ 'motion'

nəwiiwənčkwehlatoon
 /nə-wiiwən-ii-nčəkwee-hl-at-oo-n/
 1-in a circle-Ep-roll-motion-TI-TI2-3
 'I roll it in a circle'

(c) /-aahee/ 'throw'

peečiinčkweeyaahenal
 /wə-peet-ii-nčəkwee-y-aah-ee-n-al/
 3-hither-Ep-roll-Ep-throw-AI-sg-obv
 'he rolls him to here'

mpəmiinčkweeyaahen
 /nə-pəm-ii-nčəkwee-y-aah-ee-n/
 1-along-Ep-roll-Ep-throw-AI-3
 'I roll him/it by'

4.5.10 /-onkw-/ 'sleep'

The medial /-onkw-/ 'sleep' was recorded in stems where it occurs before the TA final /-aal/ and the AI finals /-x-iin/ 'lay, be' and /-aam/ 'sleep'.

(4.58)

- (a) /-(aa)/ TA Final

namonkwaalaaw
/nə-nam-onkw-aal-aa-w/
1-dream-sleep-TA-3-sg
'I dream about him'

- (b) /-x-iin/ 'lay/be'

akiiwonkxwiin
/kakiw-onkw-x-iin-w/
suddenly-sleep-lay-AI-3
'he wakes after a bad dream'

pənonkxwiin
/pən-onkw-x-iin-w/
down-sleep-lay-AI-3
'he falls out of bed while sleeping'

- (c) /-aam/ 'sleep'

ʃeexkalonkwaam
/ʃeexkal-onkw-aam-w/
naked-sleep-sleep-3
'he sleeps naked'

eelonkwaam
/eel-onkw-aam-w/
late-sleep-sleep-sg
'he sleeps late'

pən-onkw-aam
down-sleep-sleep
'he falls out of bed'

wsaamonkwaam
/wəsaam-onkw-aam-w/
excess-sleep-sleep-3
'he oversleeps'

4.6 Stems containing more than one medial

Verb stems may contain more than one medial. Examples of this type are common. In the most typical pattern, an incorporating medial is followed by a body part medial and in turn by a verb final. Some of the combinations of medials may have specialized meanings, as in (4.59a).

(4.59)

- (a) /-aalak-axoon-/ 'voice quality'

čankaalakaxoonešəw
/čarik-aalak-axoon-ee-šii-w/
small-hole-throat-AI-dim-3
'he has a soft, high-pitched voice (dim.)'

nəmoxwaalakaxoone
/nə-məx-aalak-axoon-ee/
1-big-hole-throat-AI
'I have a deep voice'

- (b) /-aalak-iinkw/ 'eyes'

nsək-aalak-iinkw-ee-w
/nəsək-aalak-iinkw-ee-w/
black-hole-face-AI-3
'he has dark eyes'

wiiponkw-aalak-iinkw-ee-w
/wiiponkw-aalak-iinkw-ee-w/
brown-hole-face-AI-3
'he has gray eyes'

- (c) /-əšee-nkw-/ 'face'

nəskəšeenkwa
/nə-nəsək-əšee-nkw-aa/
1-black-dimension-face-AI
'I have a black eye'

kəmanškəeenkwa
/kə-mank-əšee-nkw-aa/
2-big-dimension-face-AI
'you have big eyes; "your eyes are bigger than your belly"'

- (d) /-ə́čee-təy-/ 'backside'
 kəmanoonkčeeetəya
 /kə-manoonk-ə́čee-təy-aa/
 2-angry-body-rear-AI
 'you are a crabby person'
- (e) /-ə́čee-htee-/ 'hit'
 pakčeehteexiin
 /pak-ə́čee-htee-x-iin-w/
 flat-body-hit-lay-AI-3
 'he falls flat, face down'
- (f) /-ə́šee-nkw-/ 'face'
 niiskčee-nkweexiin
 /nə-niisk-ə́šee-nkw-ee-x-iin-w/
 1-dirty-body-face-PM-lay-AI-3
 'I have a dirty look on my face'
- (g) /-ə́pee-nkw-/ 'tears'
 nkakeexpeenkwa
 /nə-kakeex-ə́pee-nkw-aa/
 1-many-water-face-AI
 'I have tears in my eyes'
- (h) /-ə́kwəl-aapee-/
 aapoočkwalaapehleew
 /aapooč-ə́kwəl-aapee-hl-aa/
 open-inverse-hang-motion-AI
 'he hangs upside down'

APPENDIX TO CHAPTER IV

The appendix contains more extensive lists of examples than are presented in Chapter IV. Sets of examples are referenced to the appropriate section and to the corresponding numbered examples in Chapter IV.

4.1.1 /-ahkw-/ 'wood solid'

(4.3)

nčəpahkhwaaw
/nə-čəp-ahkw-ah-w-aa-w/
1-separate-wood-by tool-TA-3-sg
'I take him apart (by tool/instrument)'

nčəpahkhwamən
/nə-čəp-ahkw-ah-am-ən/
1-separate-wood-by tool-TI1a-3
'I take it apart (by tool/instrument)'

nkəlahkhwaaw
/nə-kəl-ahkw-ah-w-aa-w/
1-firmly-wood-by tool-TA-3-sg
'I hook him up (e.g. belt), trap him'

nkəlahkhwamən
/nə-kəl-ahkw-ah-am- n/
1-firmly-wood-by tool-TI1a-3
'I hook it up, button it up'

nkətahkhwamən
/nə-kət-ahkw-ah-am- n/
1-out-wood-by tool-TI1a-3
'I pry it out (of wood/solid) (by tool/instrument)'

4.1.2 /-aht-/ 'stringlike'

(4.6)

(a) Nouns

wiiponkw-aht-ak-w
brown-stringlike-PM-final
'thread'

maxk-aht-ak-w
red-stringlike-PM-final
'red thread'

nsəkahtakw
/nəsək-aht-ak-w/
black-stringlike-PM-final
'black thread'

waap-aht-ak-w
white-stringlike-PM-final
'white thread'

ptəkwahtakw
/pətək-w-aht-ak-w/
round-stringlike-PM-final
'rope'

oolihk-aht-ak-w
blue-stringlike-PM-final
'blue thread'

askaskw-aht-ak-w
green-stringlike-PM-final
'green thread'

kohpak-aht-ak-w
thick-stringlike-PM-final
'thick thread; yarn'

wiisaaw-aht-ak-w
yellow-string-PM-final
'yellow thread'

(b) II Stems

nxahtakat
/nax-aht-ak-at-w/
three-stringlike-PM-II-3
'it is/has three strands'

neew-aht-ak-at
four-stringlike-PM-II
'it is/has four strands'

paptək-aht-ak-at
crooked-stringlike-PM-II
'it is crooked (and stringlike)'

šaax(a)k-aht-ak-at
straight-stringlike-PM-II
'it is straight (stringlike object)'

lahtakat
 /əl-aht-ak-at-w/
 thus-stringlike-PM-II-3
 'it is string of a certain type'

kwən-aht-ak-at
 long-stringlike-PM-II
 'it is long and stringlike'

xwahtakat
 /məx-aht-ak-at-w/
 big-stringlike-PM-II-3
 'it is big and stringlike'

wəlahtakat
 good-stringlike-PM-II
 'it is good/straight (stringlike object)'

(c) AI Stems

šaax(a)kahtakəsəw
 /šaax(a)k-aht-ak-əsii-w/
 straight-stringlike-PM-AI-3
 'he is straight (stringlike object)'

kwənahtakəsəw
 /kwən-aht-ak-əsii-w/
 long-string-PM-AI-3
 'he is long and stringlike'

4.1.3 /-eek-/ 'sheetlike'

(4.7)

(a) /-ən/ 'by hand'

nəwawəleekənəmən
 /nə-wawəl-eek-ən-əm-ən/
 1-good (redup)-sheetlike-by hand-TI1 b-3
 'I fold it nicely'

ntaapeekənaaw
 /nə-t-aap-eek-ən-aa-w/
 1-Ep-open-sheetlike-by hand-3-sg
 'I turn him over (sheet of paper), turn a page, open him (e.g. book)'

nəmamačəkənaaw
 /nəmamač-ək-ən-aa-w/
 1-bad (redup)-sheetlike-by hand-3-sg
 'I fold him carelessly'

nəməmaʃeekənəmən
 /nə-mamaʃ-eek-ən-əm-ən/
 1-bad (redup)-sheetlike-by hand-TI1b-3
 'I fold it carelessly'

- (b) /-x-iin/ 'lay/be' (AI)

neeweekiixiin
 /neew-eek-ii-x-iin-w/
 four-sheetlike-EP-lay-AI-3
 'he is in four layers'

naalaneekiixiin
 /naalan-eek-ii-x-iin-w/
 five-sheetlike-Ep-lay-AI-3
 'he is in five layers'

txeekiixiin
 /tax-eek-ii-x-iin-w/
 so many-sheetlike-Ep-lay-AI-3
 'he is in so many layers'

- (c) /-x-ən/ 'lay/be' (II)

neeweekiixən
 /neew-eek-ii-x-ən-w/
 four-sheetlike-Ep-lay-II-3
 'it is in four layers'

naalaneekiixən
 /naalan-eek-ii-x-ən-w/
 five-sheetlike-Ep-lay-II-3
 'it is in five layers';

txeekiixən
 /tax-eek-ii-x-ən-w/
 so many-sheetlike-Ep-lay-II-3
 'it is in so many layers'

- (d) /-əsii/ 'state'

aapeeksəw
 /aap-eek-əsii-w/
 open-sheetlike-AI-3
 'he (page of book) turns'

(4.8)

ntəleekhamən
 /nə-t-əl-eek-ah-am-ən/
 1-Ep-thus-sheetlike-by tool-TI1a-3
 'I write on it; write it down'

akəʃeekhiikeew
 /kakəʃ-eek-ah-ii-kee-w/
 quick (redup)-sheetlike-by tool-Ep-AI-3
 'he writes quickly'

amateekhiikeew
 /mamat-eek-ah-ii-kee-w/
 bad (redup)-sheetlike-by tool-Ep-AI-3
 'he has sloppy, messy writing'

mseekhiikeew
 /məʃ-eek-ah-ii-kee-w/
 various-sheetlike-by tool-Ep-AI-3
 'he writes various places, all over'

awəleekhiikeew
 /waw l-eek-ah-ii-kee-w/
 good (redup)-sheetlike-by tool-Ep-3
 'he writes well'

nooleekhaaw
 /nə-wəl-eek-ah-w-aa-w/
 1-good-sheetlike-by tool-TA-3-sg
 'I write a letter'

peekeekhiikeew
 /peek-eek-ah-ii-kee-w/
 tired-sheetlike-by tool-Ep-AI-3
 'he is tired of writing'

aʃahweekhiikeew
 /ʃaʃahw-eek-ah-ii-kee-w/
 slow (redup)-sheetlike-by tool-Ep-AI-3
 'he writes slowly'

ʃaaxkeekhaasəw
 /ʃaax(a)k-eek-ah-aasii-w/
 'it is marked/written in a straight line'

ʃaaxkeekhiikeew
 /ʃaax(a)k-eek-ah-ii-kee-w/
 straight-sheetlike-by tool-Ep-AI-3
 'he makes a straight line (of things); writes in a straight line'

nəskeekhamən
 /nə-nəsək-eek-ah-am-ən/
 1-black-sheetlike-by tool-TI1a-3
 'I put a black mark on it'

nsəkeekhaasəw
 /nəsək-eek-ah-aasii-w/
 black-sheetlike-by tool-II-3
 'it is marked black'

apaameekhiikeew
 /papaam-eek-ah-ii-kee-w/
 about (redup)-sheetlike-by tool-Ep-AI-3
 'he makes marks/streaks all over (e.g. on floor/paper)'

nsasapeekhaaw
 /nə-sasap-eek-ah-w-aa-w/
 1-spotted (redup)-sheetlike-by tool-TA-3-sg
 'I make a line of spots on him'

nsasapeekhamən
 /nə-sasap-eek-ah-am-ən/
 1-spotted (redup)-sheetlike-by tool-TI1a-3
 'I make a line of spots on it'

sasapeekhaasəwak
 /sasap-eek-ah-aasii-w-ak/
 spotted (redup)-sheetlike-by tool-AI-3-pl
 'they have a line of spots on them'

sasapeekhaasəwal
 /sasap-eek-ah-aasii-w-al/
 spotted-sheetlike-by tool-II-3-pl
 'they (IN) have a line of spots on them'

nšaaxkeekhamən
 /nə-šaax(a)k-eek-ah-am-ən/
 1-straight-sheetlike-by tool-TI1a-3
 'I make it in a straight line'

amaxkeekhaasəwal
 /mamaxk-eek-ah-aasii-w-al/
 red (redup)-sheetlike-by tool-II-3-pl
 'they (IN) are marked red, have red stripes'

nkəteekhaaw
 /nə-k t-eek-ah-w-aa-w/
 1-out-sheetlike-by tool-TA-3-sg
 'I take a photograph of him; make a drawing of him.'

nkəteekhamən
 /n -k t-eek-ah-am-ən/
 1-out-sheetlike-by tool-TI1a-3
 'I take a photograph of it; make a drawing of it'

kteekhiikeew
 /kət-eek-ah-ii-kee-w/
 out-sheetlike-by tool-Ep-AI-3
 'he takes photographs, draws pictures'

kteekhiikan
 /kət-eek-ah-iikan/
 out-sheetlike-by tool-tool
 'camera'

4.1.4 /-əp-/ 'water'

(4.9)

(a) AI stems

aapsəpeew
/aapəs-əp-ee-w/
to death-water-AI-3
'he drowns'

eešpeew
/eeš-əp-ee-w/
through-water-AI-3
'he is soaked through'

piisələpeew
/piisəl-əp-ee-w/
limp-water-AI-3
'he is soaking wet, drenched'

šaw-əp-ee-w
weak-water-AI-3
'he is weak from being in the water'

akwanoopeew
/kwakwanoo-əp-ee-w/
soak (redup)-water-AI-3
'he is soaking wet'

wan-əp-ee-w
out of sight-water-AI-3
'he is covered over with water'

wtakpeewak
/wətak-əp-ee-w-ak/
damp-water-AI-3-pl
'they are softened from water'

tpəsk(əw)əpeew
/təpəskəw-əp-ee-w/
level with top-water-AI-3
'he (liquid) is level to the top of the container'

(b) II stems

pankpeew
/pank-əp-ee-w/
drip-water-II-3
'it drips'

paaspeew
 /paas-əp-ee-w/
 swell-water-II-3
 'it swells from moisture'

piisəl-əp-ee-w
 limp-water-II-3
 'it is soaking wet, drenched'

tpəskəwəpeew
 /təpəskəw-əp-ee-w/
 level with top-water-II-3
 'it (liquid) is level with top (of container)'

kwən-əp-ee-w
 long-water-II-3
 'it is deep (e.g. river)'

xwəpeew
 /məx-əp-ee-w/
 big-water-II-3
 'it is a lot of water (e.g. puddle)'

wan-əp-ee-w
 out of sight-water-II-3
 'it is covered over with water'

wtakpeew
 /wətak-əp-ee-w/
 soft-water-II-3
 'it is soft from dampness'

(4.10)

- (a) Preceding /-ən/ 'by hand'

nsihkpeenəmən
 /nə-sihk-əpee-ən-əm-ən/
 1-strain-water-by hand-TI1b-3
 'I strain it (by hand)'

noolpeenəmən
 /nə-wəl-əpee-ən-əm-ən/
 1-good-water-by hand-TI1b-3
 'I add water to it to make a drink/medicine'

sihkpeeniikeew
 /sihk-əpee-ən-ii-kee-w/
 strain-water-by hand-Ep-AI-3
 'he strains (things)'

- (b) Preceding /-x-ən/ 'lay/be'

kxəpəexən
/kax-əpəe-x-ən-w/
large amount-water-lay-II-3
'it is water in a puddle'

- (c) Preceding /-hl-aa/ 'motion'

kiikiipšəpəhleew
/kiikiipəš-əpəe-hlaa-w/
chicken-water-motion-3
'he has chicken pox'

kšəpəhleew
/kəš-əpəe-hlaa-w/
quick-water-motion-3
'it is quickly running water'

saakpəhleew
/saak-əpəe-hlaa-w/
out-water-motion-3
'it comes out (as a liquid); he is getting measles, comes out in blotches, spots'

- (d) Preceding /-hl-al/, /-hl-at/ 'motion'

nkəšiixpəhl(a)toonal
/nə-kəšiix-əpəe-hl-at-oo-n-al/
1-wash-water-motion-TI-TI2-3-pl
'I rinse them (IN)'

kšiixpəhl(a)tiikeew
/kəšiix-əpəe-hl-at-ii-kee-w/
wash-water-motion-TI-Ep-AI-3
'he rinses'

piintpəhlatiikan
/piint-əpəe-hl-at-iikan/
inside-water-motion-TI-tool
'funnel'

sookhəpəew
/sook-ah-əpəe-w/
pour-by tool-water-3
'bootlegger'

sehsookhəpees
/seh-sook-ah-əpəe-s/
redup-pour-by tool-water-final
'bartender'

(4.11)

(a) Preceding II /-at

xwəpeekat
/məx-əpee-ak-at-w/
big-water-PM-II-3
'it is deep water'

kəlampeekat
/kəlam-əpee-ak-at-w/
still-water-PM-II-3
'it is still water'

kwənəpeekat
/kwən-əpee-ak-at-w/
long-water-PM-II-3
'it is deep water'

(b) Preceding AI /-x-ən/ 'lay/be'

amankpeekiixən
/mamank-pee-ak-ii-x-ən-w/
big-water-PM-Ep-lay-II-3
'it is a lot of water'

(c) Preceding Noun Final /-w/

thəpeakw
/tah-əpee-ak-w/
cold-water-PM-final
'well'

(4.12)

nootakəpatoon
/nə-wətak-əpa-t-oo-n/
1-soft-water-TI-TI2-3
'I soften it in water'

ntaapsəpalaaw
/nə-t-aapəs-əpa-l-aa-w/
1-Ep-to death-water-TA-3-sg
'I drown him'

ntoolihkpalaawak
/nə-t-oolihk-əpa-l-aa-w-ak/
1-Ep-blue-water-TA-3-sg-pl
'I put blueing on them'

ntoolihkpatoon
/nə-t-oolihk-əpa-t-oo-n/
1-Ep-blue-water-TI-TI2-3
'I put blueing on it'

oolihkpatiikan
/oolihk-əpa-t-iikan/
blue-water-TI-tool
'blueing'

oolihkpatiikeew
/oolihk-əpa-t-ii-kee-w/
blue-water-TI-Ep-AI-3
'he uses blueing'

mpəsakwəpalaawak
/nə-pəsakw-əpa-l-aa-w-ak/
1-stick-water-TA-3-sg-pl
'I paste, glue them together'

mpəsakwəpatoon
/nə-pəsakw-əpa-t-oo-n/
1-stick-water-TI-TI2-3
'I paste, glue it together'

nsookpatoon
/nə-sook-əpa-t-oo-n/
1-pour-water-TI-TI2-3
'I soak it'

sookpatiikeew
/sook-əpa-t-ii-kee-w/
pour-water-TI-Ep-AI-3
'he soaks (things)'

nəwan'palaaw
/nə-wan-əpa-l-aa-w/
1-out of sight-water-TA-3-sg
'I cover him with water'

nəwan'patoon
/nə-wan-əpa-t-oo-n/
1-out of sight-water-TI-TI2-3
'I cover it with water'

paalpateew
/paal-əpa-t-ee-w/
over-water-heat-II-3
'it (heated water) overflows'

4.1.5 /-eel- 'numeral classifier'

(4.14)

(a) AI Stems

nkwaateelook
/nəkwət-eel-w-ak/
one-number-3-pl
'they are in one pair'

niišeelook
 /niiš-eel-w-ak/
 two-number-3-pl
 'they are two, in two pairs'

neeweelook
 /neew-eel-w-ak/
 four-number-3-pl
 'they are four, in four pairs'

naalaneelook
 /naalan-eel-w-ak/
 five-number-3-pl
 'they are in five pairs'

txeelook
 /tax-eel-w-ak/
 so many-number-3-pl
 'they are in so many pairs'

teepeelook
 /teep-eel-w-ak/
 enough-number-3-pl
 'they are enough'

(b) II Stems

neeweeltool
 /neew-eel-t-w-al/
 four-number-II-3-pl
 'they (IN) are four, in four pairs'

txeeltool
 /tax-eel-t-w-al/
 so many-number-II-3-pl
 'they (IN) are in so many pairs'

teepeeltool
 /teep-eel-t-w-al/
 enough-number-II-3-pl
 'they (IN) are enough'

(c) Particles

keexeeli laapaməkwat
 /keex-eel-ii/əl-aapam-əkw-at-w/
 how many-number-particle thus-appear-inverse-II-3
 'it is several different colours'

4.1.9 /-əčee-/ 'body, shape'

(4.22)

(a) Preceding /-ən/ 'by hand'

mpəkʷčeenəmən
/nə-pəkʷ-əčee-ən-əm-ən/
1-hole-body-by hand-TI1b-3
'I open it up'

pkwəčeeenaasəw
/pəkʷ-əčee-ən-aasii-w/
hole-body-by hand-AI-3
'someone put a hole in it, it has had a hole put in it'

pəkʷəčeeniikeew
/pəkʷ-əčee-ən-ii-kee-w/
hole-body-by hand-Ep-AI-3
'he operates (doctor), takes insides out (e.g. of animal)'

mpakčeeenaaw
/nə-pak-əčee-ən-aa-w/
1-flat-body-by hand-3-sg
'I flatten him (by hand)'

mpakčeenəmən
/nə-pak-əčee-ən-əm-ən/
1-flat-body-by hand-TI1b-3
'I flatten it (by hand)'

(b) Preceding /-x-/ 'lay/be'

toonkčeexiin
/toonk-əčee-x-iin-w/
open-body-lay-AI-3
'he lays spread open, apart'

ntaameexiin
/nə-t-aam-əčee-x-iin/
1-Ep-back-body-lay-AI
'I lean back (e.g. in chair)'

lookčeexiin
/look-əčee-x-iin-w/
break-body-lay-AI-3
'he lays broken'

piimčeexiin
/piim-čee-x-iin-w/
diagonal-body-lay-AI-3
'he lays crooked'

toonkčeexən
 /toonk-čee-x-ən-w/
 open-body-lay-II-3
 'it lays spread open, apart'

(c) Preceding AI /-əsii/ 'state'

ləčeesəw
 /əl-əčee-əsii-w/
 thus-body-AI-3
 'he is a certain shape'

maamatəčeesəw
 /maamat-əčee-əsii-w/
 bad (redup)-body-AI-3
 'he is lumpy, out of shape'

ptəkwcčeesəw
 /pətək-w-əčee-əsii-w/
 round-body-AI-3
 'he is round in shape'

waakčeesəw
 /waak-əčee-əsii-w/
 bent-body-AI-3
 'he is bent, lop-sided, not straight'

məsəčeesəw
 /məs-əčee-əsii-w/
 various-body-AII-3
 'he is whole'

(d) Preceding II /-ee/ 'state'

piimčeeyeew
 /piim-əčee-y-ee-w/
 diagonal-body-Ep-II-3
 'it is lop-sided'

ləčeeyeew
 /əl-əčee-y-ee-w/
 thus-body-Ep-II-3
 'it is a certain shape'

maamatəčeeyeew
 /maamat-əčee-sii-w/
 bad (redup)-body-AI-3
 'it is lumpy, out of shape'

ptəkwcčeeyeew
 /pətək-w-əčee-y-ee-w/
 round-body-Ep-II-3
 'it is round in shape'

waakčeeyeew
 /waak-əčee-y-ee-w/
 bent-body-Ep-II-3
 'it is bent, lop-sided, not straight'

məsəčeeyeew
 /məs-əčee-y-ee-w/
 various-body-Ep-II-3
 'it is whole'

xwəčeeyeew
 /məx-əčee-y-ee-w/
 very-body-EP-II-3
 'it is big'

kwənəčeeayeew
 /kwən-əčee-y-ay-ee-w/
 long-body-Ep-final-II-3
 'it is long in shape'

- (e) Preceding /-hk-/ 'by foot/body'

pakčehkamən
 /wə-pak-əčee-hk-am-ən/
 3sg-flat-body-by foot/body-TI1a-3
 'he flattens it (by foot/body)'

- (f) Preceding /-h/ 'cause'

mpakčeehaaw
 /nə-pak-əčee-h-aa-w/
 1-flat-body-caus-3-sg
 'I flatten him'

- (g) Preceding /-oox-ee/¹ 'walk'

ašahkčeeeweew
 /ašahk-əčee-wxee-w/
 backwards-body-walk-3
 'he walks backwards'

- (h) Preceding /-hl-aa/ 'motion'

tatəpčehlaak
 /tatəp-əčee-hl-aa-k/
 revolve (redup)-body-motion-AI-3 (conjunct)
 's.t. that is rolling around'

¹ The AI final /-ooxee/ 'walk' has an allomorph /-wxee/ after long vowels.

- (i) Preceding /-apii/ 'sit'

ntaamčeepe
/nə-t-aam-əčee-apii/
1-Ep-back-body-sit
'I lean back while sitting'

- (j) Preceding /-pwii/ 'eat'

nəwiinkčeepe
/nə-wiink-əčee-pw-ii/
1-glad-body-eat-AI
'I enjoy my food'

nšamčeepe
/nə-šam-əčee-pw-ii/
1-greasy-body-eat-AI
'I eat greasy food'

(4.23)

peeččehleew
/peeč-əčee-hl-aa-w/
hither-body-motion-AI-3
'he comes this way driving'

wənččehleewak
/wənt-əčee-hl-aa-w-ak/
from-body-motion-AI-3-pl
'they drive from there'

apaamčehleew
/papaam-əčee-hl-aa-w/
about (redup)-body-motion-3
'he drives about, around'

peexəwəčehleew
/peexəw-əčee-hl-aa-w/
near-body-motion-AI-3
'he drives close by'

šayeewčehleew
/šayeew-əčee-hl-aa-w/
in advance-body-motion-AI-3
'he drives ahead, first'

tiiwčehleew
/tiiw-əčee-hl-aa-w/
noise-body-motion-AI-3
'he makes a rattling (?) noise in driving (e.g. car/wagon wheels)'

ntaləməčehla
 /nə-t-aləm-əčee-hl-aa/
 1-Ep-away-body-motion-AI
 'I drive away'

ləčehleew
 /əl-əčee-hl-aa-w/
 thus-body-motion-AI
 'he drives in a certain manner, in a certain direction'

əspčehleew
 /əsp-əčee-hl-aa-w/
 upwards-body-motion-AI-3
 'he drives upwards'

kamək wčehleew
 /kamək w-əčee-hl-aa-w/
 immerse-body-motion-AI-3
 'he drives through water'

kwiišk wčehleew
 /kwiišk w-əčee-hl-aa-w/
 quiet-body-motion-AI-3
 'he drives quietly'

(4.24)

čooxpwaakčehl
 /čooxp w-aak-əčee-hl-w/
 into water-sudden-body-motion-3
 'he jumps into the water'

pkwaakčehl
 /pək w-aak-əčee-hl-w/
 hole-sudden-body-motion-3
 'he jumps through a hole'

piintaakčehl
 /piint-aak-əčee-hl-w/
 inside-sudden-body-motion-3
 'he jumps inside'

laakčehl
 /əl-aak-əčee-hl-w/
 thus-sudden-body-motion-3
 'he jumps in a certain manner, in a certain direction'

kamək waakčehl
 /kamək w-aak-əčee-hl-w/
 immerse-sudden-body-motion-3
 'he jumps in the water'

4.5.1 /-aapee-/ 'hang'

(4.48)

pənaapehleew
/pən-aapee-hl-aa-w/
down-hang-motion-II-3
'it hangs down'

piisəlaapehleew
/piisəl-aapee-hl-aa-w/
limp-hang-motion-II-3
'it hangs loose'

nəmihtaapehlalaaw
/nə-miht-aapee-hl-al-aa-w/
1-exposed-hang-motion-TA-3-
'I hang him out in the open'

nəmihtaapehlatoon
/nə-miht-aapee-hl-at-oo-n/
1-exposed-hang-motion-TI-TI2-3
'I hang it out in the open'

4.5.2 /-ahtak-/ 'run'

(4.49)

ktahtakihleew
/kət-ahtak-ii-hl-aa-w/
out-run-Ep-motion-AI-3
'he runs out'

aləmahtakihleew
/aləm-ahtak-ii-hl-aa-w/
away-run-Ep-motion-AI-3
'he runs away'

šayeewahtakihleew
/šayeew-ahtak-ii-hl-aa-w/
in advance-run-Ep-motion-AI-3
'he runs ahead'

aašəwahtakihleew
/ʔəšəw-ahtak-ii-hl-aa-w/
exchange/across-run-Ep-motion-AI-3
'he runs across'

lahtakihleew
 /əl-ahtak-ii-hl-aa-w/
 thus-run-Ep-motion-AI-3
 'he runs in a certain manner, in a certain direction'

kiimahtakihleew
 /kim-ahtak-ii-hl-aa-w/
 secret-run-Ep-motion-AI-3
 'he runs secretly, in secret'

maačahtakihleew
 /maāč-ahtak-ii-hl-aa-w/
 go home-run-Ep-motion-AI-3
 'he runs home'

wəyakahleew
 /wəyak-ahtak-ii-hl-aa-w/
 sufficient-run-Ep-motion-AI-3
 'he runs around/wild, all over'

mihmsahleew
 /mih-məs-ahtak-ii-hl-aa-w/
 redup-various-run-Ep-motion-AI-3
 'he/she is the "run-around type"'

(4.50)

laalakwihleew
 /laal-akw-ii-hl-aa-w/
 rub-adhere-Ep-motion-AI-3
 'he slides down, off'

lxakwampiisəw
 /lax-akw-ampii-sii-w/
 loose-adhere-tie-AI-3
 'he is tied loosely'

laxakwənəmən
 /nə-lax-akw-ən-əm-ən/
 1-loose-adhere-by hand-TI1b-3
 'I loosen it (by hand)'

lxakwiixən
 /lax-akw-ii-x-ən-w/
 loose-adhere-Ep-lay-II-3
 'it is loose, does not adhere tightly (e.g. jar ring, nut, bolt)'

4.5.6 /-əkwal-/ 'inverted, upside down'

(4.53)

ntaapoočkwaliixəmaaw
/nə-t-aapooč-əkwal-ii-x-əm-aa-w/
1-Ep-open-inverse-Ep-lay-TA-3-sg
'I turn him upside down, put him on inside out'

ntaapoočkwaliixtoon
/nə-t-aapooč-əkwal-ii-x-t-on/
1-Ep-open-inverse-Ep-lay-TI-TI2-3
'I turn it upside down; put it on inside out'

aapoočkwalaapehleew
/aapooč-əkwal-aapee-hl-aa-w/
open-inverse-hang-motion-AI-3
'he hangs upside down'

ntaapoočkwalaapehlatoon
/nə-t-aapooč-əkwal-aapee-hl-at-oo-n/
1-Ep-open-inverse-hang-motion-TI-TI2-3
'I hang it upside down'

aapoočkwalthoosəw
/aapooč-əkwal-ahoos-ii-w/
open-inverse-dress-AI-3
'he does a somersault'

aapoočkwalihleew
/aapooč-əkwal-ii-hl-aa-w/
open-inverse-Ep-motion-AI-3
'he turns over, flips over, does a somersault'

ntaapoočkwalaənaaw
/nə-t-aapooč-əkwal-ən-aa-w/
1-Ep-open-inverse-by hand-3-sg
'I hold him upside down (by hand)'

ntaapoočkwalaənəmən
/nə-t-aapooč-əkwal-ən-əm-ən/
1-open-inverse-by hand-TI1b-3
'I hold it upside down (by hand)'

ačiičkwalihleew
/ačiič-əkwal-ii-hl-aa-w/
forward-inverse-Ep-motion-AI-3
'he falls head first'

4.5.7 /-əʃ-/ 'collective'

(4.54)

mpiintʃiihaawak
/nə-piint-əʃ-ii-h-aa-w-ak/
1-inside-collective-Ep-cause-3-sg-pl
'I take/drive them inside'

mpiintʃihkawaawak
/nə-piint-əʃ-ii-hk-aw-aa-w-ak/
1-inside-collective-Ep-by foot/body-TA-3-sg-pl
'I chase/drive them inside'

nčooxpwʃiihaaw
/nə-čooxpw-əʃ-ii-h-aa-w/
1-into water-collective-Ep-caus-3-sg
'I chase him into the water'

nkamkwəʃiihaaw
/nə-kamək-w-əʃ-ii-h-aa-w/
1-immersed-collective-Ep-caus-3-sg
'I chase/drive him into the water'

4.5.8 /-htee-/ 'hit, by force'

(4.55)

lookihteexəmaaw
/nə-look-ii-htee-x-əm-aa-w/
1-break-Ep-hit-lay-TA-3-sg
'I wreck him'

nəmahkihteexəmaaw
/nə-mahk-ii-htee-x-əm-aa-w/
1-detach-Ep-hit-lay-TA-3-sg
'I knock him off; detach him by hitting'

nəkwithteexəmaaw
/nə-n kwət-ii-htee-x-əmaa-w/
1-one-Ep-hit-lay-TA-3-sg
'I hit him once, kill him with one blow'

nəwaakihteexəmaaw
/nə-waak-ii-htee-x-əm-aa-w/
1-bend-Ep-hit-lay-TA-3-sg
'I bend him by hitting'

nəmahkihteextoon
 /nə-mahk-ii-htee-x-t-oo-n/
 1-detach-Ep-hit-lay-TI-TI2-3
 'I knock it off; detach it by hitting'

nəwaakihteextoon
 /nə-waak-ii-htee-x-t-oo-n/
 1-bend-Ep-hit-lay-TI-TI2-3
 'I bend it by hitting'

nčaskihteethaaw
 /nə-čask-ii-htee-h-aa-w/
 1-brush-Ep-hit-caus-3-sg
 'I almost hit him, nicked him'

nkawihteethaaw
 /nə-kaw-ii-ntee-h-aa-w/
 1-prostrate-Ep-caus-3-sg
 'I knock him down by hitting'

nkaxkihteethəmən
 /nə-kaxk-ii-htee-h-am-ən/
 1-break-Ep-hit-cause-TI1a-3
 'I break it (by hitting)'

nkwxkihteethaaw
 /nə-kwxk-ii-htee-h-aa-w/
 1-back-Ep-hit-caus-3-sg
 'I retaliate by hitting him'

laalihteethəkw
 /nə-laal-ii-htee-h-ək-w-w/
 1-contact-Ep-hit-caus-3-sg
 'he grazed me in hitting me, hit and grazed me'

nəmahkihteethəmən
 /nə-mahk-ii-htee-ah-am-ən/
 1-detach-Ep-hit-by tool-TI1a-3
 'I knock it off (s.t. attached) by hitting'

nəməsihteethaaw
 /nə-məs-ii-htee-h-aa-w/
 1-various-Ep-hit-caus-3-sg
 'I bounce him, hit him various ways'

nəmoókəlihteethaaw
 /nə-mook l-ii-htee-h-aa-w/
 1-maul-Ep-hit-caus-3-sg
 'I hit him with a maul'

nəwaakihteethaaw
 /nə-waak-ii-htee-h-aa-w/
 1-bend-Ep-hit-caus-3-sg
 'I bend him crooked'

nəwaakihteemən
/nə-waak-ii-htee-h-am-ən/
1-bend-Ep-hit-caus-TI1a-3
'I bend it crooked'

nəweemihteeməwak
/nə-weem-ii-htee-h-aa-w-ak/
1-all-Ep-hit-caus-3-sg-pl
'I hit all of them'

noosaamihteeməw
/nə-wəsaam-ii-htee-h-aa-w/
1-too much-Ep-hit-3-sg
'I hit him too much, too hard'

nəkwtihteeməw
/nə-nəkwt-ii-htee-h-aa-w/
1-one-Ep-hit-caus-3-sg
'I hit him once; kill him with one blow; knock him out'

mpaakxehteeməw
/nə-paal-axee-htee-h-aa-w/
1-noise-ear-hit-caus-3-sg
'I slap him across the face (once) (close to ears)'

mpalihteeməw
/nə-paal-ii-htee-h-aa-w/
1-over-Ep-hit-caus-3-sg
'I hit him over [farther than intended]'

mpakihteeməw
/nə-pak-ii-htee-h-aa-w/
1-flat-Ep-hit-caus-3-sg
'I flatten him by hitting'

mpalihteeməw
/nə-pal-ii-htee-h-aa-w/
1-elsewhere-Ep-hit-caus-3-sg
'I miss at hitting him'

mpalihteemən
/nə-pal-ii-htee-h-am-ən/
1-elsewhere-Ep-hit-caus-TI1a-3
'I miss at hitting it'

pkwihteemiikan
/pəkw-ii-htee-h-ii-kan/
hole-Ep-hit-cause-tool
'chisel'

mpəmihteeməw
/nə-pəm-ii-htee-h-aa-w/
1-along-Ep-hit-caus-3-sg
'I knock him over'

psakwihteehaaw
 /pəsakw-ii-htee-h-aa-w/
 stick-Ep-hit-caus-3-sg
 'he is crucified' (indefinite subject)

psakwihteehaas w
 /pəsakw-ii-htee-h-aasii-w/
 stick-Ep-hit-caus-AI-3
 'he is crucified'

mpwahwihteehaaw
 /nə-pwahw-ii-htee-h-aa-w/
 1-noise-Ep-hit-cause-3-sg
 'I slap him hard'

nsalaxkihteehaaw
 /nə-salaxk-ii-htee-h-aa-w/
 1-startle-Ep-hit-cause-3-sg
 'I hit and startle him'

nsələskihteehaaw
 /nə-sələsk-ii-htee-h-aa-w/
 1-squeeze-Ep-hit-caus--3-sg
 'I press/squeeze (the insides out of) him'

nsələskihteehəmən
 /nə-sələsk-ii-htee-h-am-ən/
 1-squeeze-Ep-hit-cause-TI1a-3
 'I press/squeeze (the insides out of) it'

nšəkwihteehaaw
 /nə-šək-ii-htee-h-aa-w/
 1-crush-Ep-hit-caus-3-sg
 'I squash/flatten him by hitting'

ntakwihteehəmənəl
 /nə-takw-ii-htee-h-am-ən-əl/
 1-together-Ep-hit-caus-TI1a-3-pl
 'I hit them (IN) together, esp. I nail them (IN) together'

ntaamihteehaaw
 /nə-t-aam-ii-htee-h-aa-w/
 1-Ep-backwards-Ep-hit-caus-3-sg
 'I knock him over (by hitting); make him fall backwards'

ntaamihteehəmən
 /nə-t-aam-ii-htee-h-am-ən/
 1-Ep-backwards-Ep-hit-caus-TI1a-3
 'I knock it over (by hitting); make it fall backwards'

ntaantihteehaaw
 /nə-t-aant-ii-htee-h-aa-w/
 1-Ep-anew-Ep-hit-cause-3-sg
 'I hit him anew, another time'

aaštehteehiikan
/aašte-htee-h-iikan/
then-hit-caus-tool
'cross'

aaštehteehaaw
/aašte-htee-h-aa-w/
then-hit-caus-3-sg
'he is crucified, put on the cross' (indefinite subject)

ntaləmihteehaaw
/nə-t-aləm-ii-htee-h-aa-w/
1-Ep-away-Ep-hit-caus-3-sg
'I send him away by hitting'

nčaankihteehaaw
/nə-čaank-ii-htee-h-aaw/
1-make cry-Ep-hit-caus-3-sg
'I make him cry by hitting him'

(4.56)

ləmatapihteexiin
/ləmatapii-htee-x-iin-w/
sit-hit-lay/be-AI-3
'he falls sitting'

mahkihteexiin
/mahk-ii-htee-x-iin-w/
detach-Ep-hit-lay/be-AI-3
'he gets knocked off, detached by hitting'

mahkihteexən
/mahk-ii-htee-x-ən-w/
detach-Ep-hit-lay/be-II-3
'it gets knocked off, detached by hitting'

msihteexiin
/mə-s-ii-htee-x-iin-w/
various-Ep-hit-lay-be-II-3
'he falls all over'

waakihteexən
/waak-ii-htee-x-iin-w/
bend-Ep-hit-lay/be-AI-3
'it is bent by hitting'

pakčehteexiin
/pak-əčee-htee-x-iin-w/
flat-body-hit-lay/be-AI-3
'he falls flat, face down'

piimihteexiin
 /piim-ii-htee-x-iin-w/
 diagonal-Ep-hit-lay/be-AI-3
 'he falls sideways'

piimihteexən
 /piim-ii-htee-x-ən-w/
 diagonal-Ep-hit-lay/be-II-3
 'it falls sideways'

piisəlihteexiin
 /piisəl-ii-htee-x-iin-w/
 limp-Ep-hit-lay/be-AI-3
 'he falls down due to being weak/limp'

mpwahwalehteexiin
 /nə-pwahw-alee-htee-x-iin/
 1-noisily-damn-hit-lay/be-AI
 'I fall down hard as hell'

takwihteexiinook
 /takw-ii-htee-x-iin-w-ak/
 together-Ep-hit-lay-AI-3-pl
 'they hit together'

aamihteexiin
 /aam-ii-htee-x-iin-w/
 backwards-Ep-hit-lay/be-AI-3
 'he falls backwards, is knocked over'

aaptihteexiin
 /aapət-ii-htee-x-iin-w/
 to death-Ep-hit-lay/be-AI-3
 'he falls to his death'

ntalaamihteexiin
 /nə-t-alaam-ii-htee-x-iin/
 1-Ep-inside-Ep-hit-lay/be-AI
 'I fall underneath'

4.5.9 /-nčəkwee-/ 'roll'

(4.57)

(a) /-hl-aa/ 'motion'

pəmiinčkwehleew
 /pəm-ii-nčəkwee-hl-aa-w/
 along-Ep-roll-motion-AI-3
 'he rolls by'

aləmiinčkwehleew
 /aləm-ii-nčəkwee-hl-aa-w/
 away-Ep-roll-motion-AI-3
 'he rolls away'

liinčkwehleew
 /əl-ii-nčəkwee-hl-aa-w/
 thus/in a certain direction-roll-motion-AI-3
 'he, it rolls in a certain manner; in a certain direction'

wəliinčkwehleew
 /wəl-ii-nčəkwee-hl-aa-w/
 good-Ep-roll-motion-AI-3
 'he rolls straight'

wiiwəniinčkwehleew
 /wiiwən-ii-nčəkwee-hl-aa-w/
 around-Ep-roll-motion-AI-3
 'he rolls around in a circle'

- (b) /-hl-at/ 'motion'

nəwiiwənčkwehlatoon
 /nə-wiiwən-ii-nčəkwee-hl-at-oo-n/
 1-in a circle-Ep-roll-motion-TI-TI2-3
 'I roll it in a circle'

- (c) /-aahee/ 'throw'

ntəpiinčkweeyaahen
 /nə-təp-ii-nčəkwee-y-aah-ee-n/
 1-revolve-Ep-roll-Ep-throw-AI-3
 'I roll him/it'

ntaləmiinčkweeyaahen
 /nə-t-al m-ii-nčəkwee-y-aah-ee-n/
 1-Ep-away-Ep-roll-Ep-throw-AI-3
 'I roll s.o./s.t. away'

wtəliinčkweeyaahen
 /wə-t-əl-ii-nč-əkwee-y-aah-ee-n/
 3-Ep-thus-Ep-roll-Ep-throw-AI-3
 'he rolls it in a certain manner; in a certain direction'

4.6 Stems containing more than one medial

(4.59)

- (a) /-aalak-axoon-/ 'voice quality'
- čankaalakaxoonešəw
/čank-aalak-axoon-ee-šii-w/
small-hole-throat-AI-dim-3
'he has a soft, high-pitched voice (dim.)'
- nəmoxwaalakaxoone
/nə-məx-aalak-axoon-ee/
1-big-hole-throat-AI
'I have a deep voice'
- (b) /-aalak-iinkw/ 'eyes'
- oolihk-aalak-iinkw-ee-w
/oolihk-aalak-iinkw-ee-w/
blue-hole-face-AI-3
'he has blue eyes'
- askask-aalak-iinkw-ee-w
/askaskw-aalak-iinkw-ee-w/
green-hole-face-AI-3
'he has green eyes'
- amank-aalak-iinkw-ee-w
/mamank-aalak-iinkw-ee-w/
big-hole-face-AI-3
'he has big eyes'
- amank-aalak-iinkw-ee-x-iin
/mamank-aalak-iinkw-ee-x-iin-w/
big-hole-face-AI-lay-AI-w
'he is big-eyed'
- (c) /-əšee-nkw-/ 'face'
- taaxkšeenkweew
/taaxk-əšee-nkw-ee-w/
retract-dimension-face-AI-3
'he has his eye pulled down'
- mpwahwšeenkweechaaw
/nə-pwahw-əšee-nkw-ee-h-aa-w/
1-loudly-dimension-AI-face-cause-3-sg
'I slap him in the face'
- laapšeenkweehəkw
/nə-laap-šee-nkw-ee-h-ək-w/
1-thread-dimension-face-AI-cause-3
'he grazes my eye'

taaxkʃeenkweexiin
 /taaxk-əʃee-nkw-ee-x-iin-w/
 retract-dimension-face-AI-lay-AI-3
 'he has pulled-down eyes'

laapʃeenkweexiin
 /laap-əʃee-nkw-ee-x-iin-w/
 'he was struck in the eye;
 brushes against s.t. which goes in the eye'

pwahwʃeenkweexiin
 /pwahw-əʃee-nkw-ee-x-iin-w/
 loudly-dimension-face-AI-lay-AI-3
 'he hits his face hard (against something)'

laapʃeenkweenaaw
 /nə-laap-əʃee-nkw-ee-ən-aa-w/
 1-thread-dimension-face-AI-by hand-3-sg
 'I stick my finger in his eye'

ntaaxkʃeenkweenaaw
 /nə-taaxk-ʃee-nkw-ee-ən-aa-w/
 'I pull his eye down, hold his eye open'

- (d) /-əʃee-təy-/ 'backside'

kəmanoonkʃeetəya
 /kə-manoonk-əʃee-təy-aa/
 2-angry-body-rear-AI
 'you are a crabby person'

- (e) /-əʃee-htee-/ 'hit'

pakʃehteexiin
 /pak-əʃee-htee-x-iin-w/
 flat-body-hit-lay-AI-3
 'he falls flat, face down'

- (f) /-əʃee-nkw-/ 'face'

niiskʃeenkweexiin
 /nə-niisk-əʃee-nkw-ee-x-iin-w/
 1-dirty-body-face-PM-lay-AI-3
 'I have a dirty look on my face'

- (g) /-əpee-nkw-/ 'tears'

nkakeexpeenkwa
 /nə-kakeex-əpee-nkw-aa/
 1-many-water-face-AI
 'I have tears in my eyes'

- (h) /-əkwal-aapee-/

aapoočkwalaapehleew
/aapooč-əkwəl-aapee-hl-aa/
open-inverse-hang-motion-AI
'he hangs upside down'

CHAPTER V

PRIMARY DERIVATION OF NOUNS

5.0 Introduction

This chapter deals with the analysis of noun stems formed in primary derivation. Primary derivation refers to the formation of stems by the concatenation of roots and suffixes. The formation of noun stems is not as complex as the formation of verb stems, in either primary or secondary derivation. There are few instances of nominal primary derivation which are productive. Some noun stems which appear to be multimorphemic are analysed as listed in the lexicon rather than as derived by rule. However, there are certain instances of primary noun formation which are analysed as being derived by rule.

In §1.5.3, it was proposed that there are three central factors which are relevant to the evaluation of morphological productivity: (a) semantic compositionality; (b) restrictions on affixation; (c) the outputs of productive morphology are occurring words. Affixes which enter into productive word formation have their own lexical entries (§1.5.3). Words containing these affixes will be derived by morpholexical insertion. Words which are not productively formed will be listed in the lexicon, rather than derived.

Some noun forming suffixes occur solely in primary noun formation. That is, they attach to roots or to sequences of root and medial. Some occur in both primary and secondary derivation, while others occur only in secondary derivation. In certain cases a suffix appears to attach more productively to stems than to roots (or vice-versa). In others it was not possible to make a determination. A suffix which is used in both primary and secondary derivation will be analysed as having a subcategorization frame which states that the suffix subcategorizes for both a root (X^{-2}) and a noun or verb stem (V^{-1} , N^{-1}).

5.0.1 Types of Primary Noun Stems

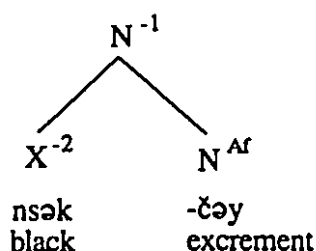
Descriptively, the major patterns of primary derivation of nouns which occur are listed in (5.1).

(5.1)

- (a) Root + Final
- (b) Root + Medial + Final
- (c) Root + Medial (+ no final)

Primary nouns consisting of a root followed by a final are associated with tree structures such as that in (5.2). For example, the noun nsəkčəy 'black excrement' has a structure of this type.

(5.2)

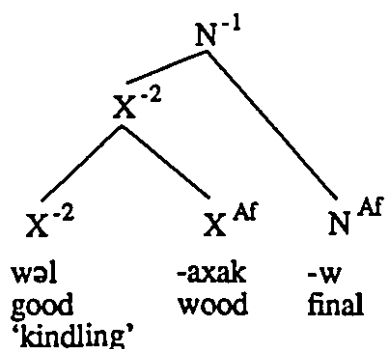


Tree structures of the type displayed in (5.2) will be generated by rule 5.3.

(5.3) $N^{-1} \rightarrow X^{-2} N^{Af}$

Primary nouns which are formed with an abstract final will be discussed in §5.1; primary nouns formed with a concrete final will be discussed in §5.2. Primary nouns consisting of a root, a medial, and a final will be assigned the structure in (5.4).

(5.4)



It is argued in §5.3 that primary nouns of the type (5.1c), which are conventionally described as being formed with a root, medial, and no final are analysed as having the

structure in (5.4). In nouns of the type (5.1c), it is proposed that an underlying final suffix of the form /-w/ is deleted by an independently justified rule. Noun stems containing medials will be discussed in §5.3. Cases where a noun final is added to an unanalysable noun stem are analysed as instances of addition of a suffix to a stem (X^{-1}). These processes will be discussed in Chapter VI.

There is a class of morphological entities whose structural status is not always certain. There is a large class of elements, referred to as bound variants of noun stems, which will be discussed in detail in Ch. VII. Many noun stems have a morphologically related form which occurs adjoined to a root or, more rarely, to a noun stem. For example, the noun stem mahksən 'shoe' (5.5a) has a bound variant -ahksən, in (5.5b).

(5.5)

- (a) mahksən
'shoe'
- (b) wəsk-ahksən
new-shoe
'new shoe'

There exist a variety of morphological elements which, from a historical point of view, were members of the class of bound variants. However, their synchronic status in the present-day language may be different, usually for one of two reasons: (1) the free noun stem to which the bound variant is related no longer occurs in the present-day language. Cases of this type include: (a) /-aapeew/ 'man' (§5.2.1); (b) /-akwiiwan/ 'cloth' (§5.2.2); (c) /-ameekw/ 'fish' (§5.2.3); (d) /-aniikwəs/ 'squirrel'. (2) the free and bound variants are sufficiently distinct, phonologically and semantically, that there is no justification for relating them synchronically. Examples of this type include /-hleew/ 'bird' (§5.2.6).

Synchronically, there are two possible analyses of morphological elements of the type discussed in the paragraph above. They could be analysed as bound stems. That is, they obligatorily are attached to a derivational affix (or another bound stem). They would be analogous to bound stems such as English -mit in 'per-mit', or rasp- in 'rasp-berry'.

Alternatively, they could be analysed as suffixes.¹ These two analyses are not mutually exclusive, in that some morphemes which (historically) are bound variants of noun stems may best be analysed as bound noun stems, while others may best be analysed as suffixes. Examples of both types of evolution can be found in the history of English, for instance. Aronoff and Sridhar (1988: 180), discussing the general phenomenon of bound variants (referred to by them as 'combining forms'), emphasize that determining the status of particular (problematic) elements must be determined on a case-by-case basis.

Developments which involve a change in the status of morphological elements are sometimes discussed under the rubric of 'lexicalization'. Aronoff and Sridhar (1988: 183) equate lexicalization with 'boundary decay', in which for example, morphological elements associated with a word boundary ('#') are reassociated with a prefix ('+') boundary.² Selkirk (1982: 104-105) also assumes that developments of this type must be allowed for, at least as a diachronic phenomenon. Halle and Vergnaud (1987b: 91-92) propose that there are synchronic rules in English which have this effect.

The distinction between bound stems and prefixes is not a sharp one. Typically, in English, a noun is analysed as containing a bound root if it co-occurs with another morpheme which is analysed, for independently justified reasons, as a suffix (because of its occurrence in other forms). In feck-less, feck- is analysed as a bound root because -less is analysed as a suffix. But an element such as -dom in free-dom is analysed as a suffix,

¹ That is, from a diachronic perspective, they are noun stems which have been recategorized as noun-forming suffixes.

² In theories which do not recognize the existence of boundaries, such as Lexical Phonology (Mohanen (1986)), this type of observation would be stated in different terms.

however, because it attaches to stems/roots, like other suffixes, even though historically the element *-dom* is known to have been an independent noun stem.³

In present-day Delaware there is no reason to consider morphemes such as */-aapeew/* to be anything other than noun forming suffixes; that is how they are analysed here. It is only possible to claim that they are bound variants of noun stems if one knows the history of the language, which is not relevant for synchronic analysis.

Many primary noun stems are monomorphemic. They have no internal structure. Analyses of these stems which assume that such nouns have 'zero' noun finals are sometimes proposed by Algonquianists, because they make it possible to maintain the generalization that every noun stem contains a noun final. Bloomfield (1946: §59; 1962: §3.32) in his studies of Proto-Algonquian and Menominee, respectively, proposed that unanalysable stems contain a noun final of the shape zero, that is, a zero morpheme. Wolfart (1973: 69) takes a similar position in his study of Plains Cree. Some examples of monomorphemic nouns are listed in (5.6).⁴

(5.6)

asən	'stone'	IN
mahksən	'shoe'	IN
mələy	'pus'	IN
mohkaməy	'ice'	AN
čkwal	'frog'	IN
aahaas	'crow'	AN
mataht	'bow (for hunting)'	IN

³ Note also that 'freedom' has the phonological characteristics of a single word, rather than those of a compound stem.

⁴ The grammatical gender of nouns is indicated as inanimate (IN) or animate (AN).

5.0.2 Noun Finals Ending in /-n/

There are several noun finals ending in /-n/, which are listed in (5.7). From a historical point of view, these suffixes consist of a noun final /-n/ preceded by other material. Synchronically, however, they have been lexicalized as unitary suffixes. As well, some synchronically unanalysable nouns end in /-n/: mahksən 'shoe'.

(5.7)

(a) /-iikaan/	'house'
(b) /-iikan/	'tool'
(c) /-aakan/	'nominalizer'
(d) /-an/	'nominalizer'
(e) /-oon/	'nominalizer'

The suffixes in (5.7) end in the Delaware reflex of the Proto-Algonquian noun final */-n/, which formed "actions, products, and instruments" from Animate Intransitive verb stems (Bloomfield (1946: §62)). The addition of */-n/ to stems is associated with two distinct morphophonological effects. Although the distinct morphophonological effects associated with the segment */-n/ suggests that there are two noun-forming suffixes /-n/₁ and /-n/₂, Bloomfield (1946) does make such a proposal. When added to suffixes ending in /-ee/, /-ee/ --> /-a/ in certain cases, and /-aa/ in others (Goddard (1974b: 326, Fn. 66)). For example, AI stems formed with /-kee/ 'derived intransitive' (§3.2.9) would be nominalized by adding /-n/, with /-ee/ --> /-a/, as in the following stems.

(5.8)

(a)	/payaxkahiikee-/	'shoot' (AI)
	/payaxkahiikee-n/ -->	
	/payaxkahiikan/	'gun'
(b)	/apiikwee-/	'play flute' (AI)
	/apiikwee-n/ -->	
	/apiikwan/	'musical instrument'

Other nouns ending in /-an/ (5.7d) were formed by the addition of /-n/ to an AI verb stem with the shift of stem-final /-ee/ to /-aa/: aaman 'string' is based upon an AI verb stem /aamee-/ which now only occurs as a bound variant in the verb stem /weent-aamee-/ 'fish with a line'. However, there are many noun stems for which it is not possible to justify this analysis on a synchronic basis; it is necessary to assume that there is a noun final /-an/ (see §5.1.1 for some examples).

In other cases, addition of the nominalizing suffix shifts /-ee/ --> /-aa/.

(5.9)

/niiskiikee-/ 'have a dirty house' (AI)

/niiskiikee-n/ -->

/niisk-iikaan/ 'dirty house'

As well, other nouns ending in /-n/ were formed by the addition of /-n/ to an AI verb stem, with the shift of stem-final /-ee/ to /-aa/. For example apwaan 'bread', from a non-occurring AI stem /apwee-/ 'roast'; piimənahtaan 'thread', from AI stem /piimənahtee-/ (non-occurring, but cited in Zeisberger (1887: 197), from an unidentified Delaware dialect).

Synchronically, however, there is little evidence for assuming that there is a nominalizing suffix /-n/. In this study I analyse /-(ii)kaan/ 'house' (§5.2.6), and /-iikan/ 'tool, instrument' (§6.1.1) as suffixes. Although there are many nouns which end in /-an/ (§5.1.1) there is no justification for claiming that the segment /-n/ is a final suffix in these stems.

5.1 Primary Nouns Formed With Abstract Finals

Abstract noun finals used in primary derivation of nouns are few in number. In terms of productivity, nearly all of the suffixes discussed in this section are synchronically marginal, particularly when compared to the suffixes used in the primary derivation of verbs, which frequently are highly productive in that they form semantically compositional

'new' stems, with few or no restrictions on affixation (§1.5.3). The structure of primary nouns formed with abstract finals is often difficult to analyse, especially because many morphemes are only partially motivated: although the stem contains an identifiable final, the remaining elements may not occur elsewhere. The only relatively productive abstract noun final is /-w/, especially when preceded by medials. Complex noun stems formed with /-w/ are discussed in §5.3.

5.1.1 /-an/

A suffix of the form /-an/ is found in some noun stems. These noun stems include the 'body part' nouns (5.10a), as well as others (5.10b). Usually the root of such nouns does not occur in any other stems.

(5.10)

(a) Body Part Stems

nihtankan /nə-htank-an/	'back of my neck'	DI
lonkwan /nə-lonkw-an/	'my wing, armpit'	DI
nəmaamaawan /nə-maamaaw-an/	'my eyebrow'	IN
nihkaxkwan /nə-hkaxkw-an/	'my shin'	DI
nohpoxkwan /nə-hpoxkw-an/	'my back'	DI
niiskwan /nə-niiskwan/	'my elbow'	DA
waxk-an	'bone'	IN

(b) Other Noun Stems

aniix-an	'shoelace'	IN
miikw-an	'feather'	AN
aam-an	'rope'	IN

Some speakers sporadically add /-an/ as a unit to a few existing noun stems: ee-heešanteek 'window', a participial form of an II verb stem reanalysed as a noun stem, was recorded as eeheešanteekan from one speaker. However, there do not appear to be any cases where new words are productively formed with /-an/. I analyse all nouns containing /-an/ as listed, rather than derived.

The final /-an/ also occurs preceded by /-aaw-/ in a number of nouns; it is possible that these should be treated as a final /-aawan/. The status and the structure of these stems are often not clear. The formation of noun stems by suffixation of /-aaw-an/ is not productive. The list of noun stems containing /-aaw-an/ in (5.11) appears to be nearly exhaustive.

(5.11)

ahpčaawan
/ahp-č-aawan/
upon-backside (?) -final
'diaper, napkin'

məlihkaawan
'pillow'

miixiinkwaawan
/miix-iinkw-aawan/
hairy-eye-final
'eyebrow'

wiilaawan
/wə-iil-aawan/
pre-head-final
'horn, antler'

akwiipəl-aawan
'plow'

alaawan
/al-aawan/
touch-final
'cane'

siixiipahkw-aawan
'cornstalk'

nčankələnčaawanəš
/nə-čank-ə-lənč-aawan-əš/
1-small-Ep-hand-final-dim
'my little finger'

The suffix /-an/ is also found in noun stems which consist of an AI verb followed by /-w-/ and /-an/. The /-w-/ which occurs in these stems is not the connective /-w-/ discussed in §1.6, since it does not condition the shift of a preceding /-aa/ to /-ee/, or /-ii/ to the segment /-ə/, which is a characteristic of 'connective -w-'. The suffix could also be analysed as /-wan/ in these forms; it would in any event be very limited in distribution.

(5.12)

niimaawan	'lunch'
/niimaa-w-an/	
take along one's lunch-w-nom	
leexeewan	'breath'
/leexee-w-an/	
breathe-w-nom	
škiiwan	'urine'
/šəkii-w-an/	
urinate-w-nom	
/-akwiiwan/ ⁵	'cloth'
/-akwii-w-an/	
don clothes-w-nom	

Nouns derived from verbs in this way are few in number. As there is no evidence that noun stems are productively formed in this manner, the nouns in (5.12) are analysed as being listed in the lexicon.

The suffix /-an/ also occurs in the large number of noun stems which are formed with /-iik-an/. There are several possible analyses of these forms. One is to consider /-iikan/ as a single suffix. This is the analysis which is adopted in §6.1.1. It could be proposed that the suffix /-an/ is attached directly to the prefinal suffix /-iik-/, which also occurs in 'indefinite object' AI stems. Third, it could be proposed that the suffix /-n/ is added to an

⁵ This is a noun final based upon a bound variant of a noun stem (§5.2.2).

AI 'indefinite object' verb formed with /-iik-ee/. Suffixation of /-n/ would trigger a shift of /-ee/ to [-a]. This is approximately the analysis assumed in Bloomfield (1946, 1958, 1962).

5.1.2 /-ay/

The final /-ay/ is found in a small number of nouns. Examples of /-ay/ added to roots which occur in other noun stems are given in (5.13a). In the examples in (5.13b), /-ay/ is added to morphemes which were not recorded in other stems. The examples in this section represent nearly all noun stems containing the noun final /-ay/ which were recorded. There do not appear to be any productive patterns of noun formation with /-ay/, nor does /-ay/ appear to have a discernable meaning. All nouns containing /-ay/ are analysed as being listed rather than derived.

(5.13)

(a) Added to Roots

čiiip-ay frightful-final 'ghost'	IN
kih-k-ay mature-final 'chief'	AN
nihtoonayak /nə-htoon-ay-ak/ 1-mouth-final-pl 'my whiskers, beard' (pl.)	AN
wtalaamtoonay /wə-t-alaam-toon-ay/ 3-Ep-inside-mouth-final 'inside his mouth'	IN
mihtkwiinootay ⁶ /mihtək-w-ii-noot-ay/ tree-Ep-bag-final 'basket'	IN

⁶ This stem appears to be a compound noun consisting of /mihtək-w/ 'tree' and /nootay/ 'bag'; /nootay/ does not occur freely, but only in a few other nouns of this type, such as šəlpəliinootay 'purse'.

awee-y-ay-əs someone-Ep-final-final 'animal'	AN
mačiiy-ay bad-final 'grave'	IN
(b) <u>Other Roots</u>	
watay /wə-at-ay/ 3-stomach-final 'his stomach'	DI
nhakay ⁷ /nə-hak-ay/ 1-body-final 'my body'	DI
xay ⁸ /ax-ay/ skin-final 'skin'	IN
wšiixay /wəšiix-ay/ 'nest'	IN
aanay /aan-ay/ 'road'	IN
kšəkwanay /kə-šəkwan-ay/ 2-tail-final 'your tail'	DI
akoot-ay 'petticoat'	IN
wšak-ay 'eggshell'	IN
niilakay /nə-iilakay/ 'my penis'	DI

⁷ The stem /-hak-ay/ is also found in the noun hwakees 'bark'; originally /w-hak-ay-əs/, with metathesis of initial /w-h/ (R38) and contraction of /-ay-əs/ to [-ees] (R17).

⁸ The AI verb stem nəksasəw /nəsək-ax-as-ii-w/ 'tan oneself' (§2.4.2.9) may contain /-ax-/ 'skin'.

In a few forms /-ay/ appears to be added to a sequence of root or stem followed by /-n/ (5.14a). The status of /-n/ in these forms is unclear; it may represent nominalizing /-n/ (§5.0.2), followed by /-ay/. One speaker added /-ay/ to another stem ending in /-n/: s(a)kaxeehoonay 'earring'; other speakers s(a)kaxeehoon. Other nouns containing /-ay/ are listed in (5.14b).⁹

(5.14)

(a)	ootee-n-ay visit-nom-final 'town'	IN
	apii-n-ay be there-nom-final 'bed'	IN
(b)	mat-alak-ay bad-epithet-final 'a bad person'	AN
	mačceew-ay-al belongings-final-pl 'old things, odds and ends (pl.)'	IN
	waap-asaan-ay ¹⁰ white-?-final 'white blanket'	IN

5.1.3 Monomorphemic Noun Stems Ending In /-w/

Some noun stems end in a segment /-w/. Many of the roots found in these stems occur in one noun only. These instances of /-w/ might be analysed as representing a noun final /-w/. Bloomfield (1946: §59; 1958: §11.2), discussing Proto-Algonquian and Ojibwa, respectively, notes that many primary noun stems end in /-w/ although he does not analyse

⁹ A morpheme of the form /-ay/ was recorded in a few verb stems, such as /moxəwiiyay-ii-/ 'be old, used'. It is uncertain if /-ay/ in this verb stem should be analysed as the noun final /-ay/.

¹⁰ The element /-asaan-/ was not recorded in any other forms. Its meaning is uncertain.

/-w/ as a noun-forming suffix in these stems. There is no evidence which would support analysing /-w/ as a noun-forming suffix in most of these cases, and such forms are analysed as monomorphemic. However, a noun-forming suffix /-w/ does occur in stems of the form root-medial-final, which will be discussed in §5.3. The examples in (5.15) represent apparently monomorphemic noun stems which end in /-w/.

(5.15)

(a) Final /-w/ preceded by long vowel

tanteew	'fire'	IN
maaleew	'glutton'	AN
aamweew	'bee'	AN
oxkweew	'woman'	AN
alaankweew	'star'	AN
lənapeew	'Indian'	AN
oočeew	'fly'	IN
pihteew	'foam'	IN
mwaakaneew	'dog'	AN
meenkweew	'Oneida Indian'	AN

(b) Final /-w/ preceded by short vowel

lənəw	'man'	AN
asiiskəw	'mud'	IN
leekəw ¹¹	'sand'	IN
siipəw	'river'	IN
pkəw	'gum'	AN

(c) Final /-w/ preceded by consonant

maxkw	'bear'	AN
amoxkw	'beaver'	AN
mohkw	'blood'	IN
wteeskw ¹²	'cornhusk'	IN
ponkw	'dust'	IN
apiikw ¹³	'flea'	AN
ašiikw	'woodtick'	AN

¹¹ Goddard (1982: 21) recorded leekaw 'sand' from some speakers; leekəw appears to be an innovation.

¹² This stem may consist of a root /wətay-/ or /wətee-/ 'behind, in back of', followed by /-askw/ 'grass'.

¹³ This stem may consist of a root /ap-/ , /-iik-/ 'insect', and /-w/ 'abstract final.'

Goddard (1974b: 325-326) has noted the antiquity of a common Algonquian process which nominalizes AI verb stems by suffixation of a noun final /-w/ (see also Bloomfield (1946: §61). The formation of agent nouns from AI stems by suffixation of /-w/ is still productive in several other Algonquian languages. Bloomfield (1962: §242) discusses this pattern in Menominee. This process may be the historical source of some noun stems ending in /-w/. Delaware does not productively form agent nouns from AI verbs, although there are several nouns which apparently represent a pattern of nominalization by suffixation of /-w/. The noun stem sookhəpeew 'bootlegger' appears to be formed from an AI stem /sookahəpee-/ 'pour liquid', which may be analysed as /sook-/ 'pour', /-ah-/ 'by tool', /-əpee-/ 'liquid', and noun final /-w/.

5.2 Primary Nouns Formed With Concrete Final

Concrete noun finals have a discernable lexical meaning. Several of the concrete noun finals are also used in the formation of noun stems from existing noun stems (see also Chapter VI).

A distinction is made here between productive concrete noun finals (§5.2.1.1) and unproductive concrete noun finals (§ 5.2.1.2). As discussed previously, morphological productivity in this study is correlated primarily with three characteristics: (1) semantic compositionality; (2) extent of restrictions on affixation; (c) regularity of output. The productivity of word formation with the concrete noun finals varies considerably. Some concrete noun finals are found in only a small number of nouns stems, while a few are highly productive. There are very few concrete noun finals which occur suffixed to roots.

5.2.1 Productive Concrete Noun Finals

5.2.1.1 /-iikaan/ 'dwelling'

This is one of the most productive of the primary concrete finals. I analyse this final as a noun-forming suffix /-iikaan/, which is added to numerous roots. The resulting noun stem is always semantically compositional.

Noun stems formed with /-iikaan/ are always inanimate in gender; the lexical entry for this suffix includes the specification [-animate]. Noun stems formed with /-iikaan/ never take the possessive suffix /-əm/ when possessive nouns are formed. This property will be represented by including the diacritic feature [-M] in the lexical entry of the suffix (see also §1.5.4 and Ch. II for discussion of the distribution of the possessive suffix).

Examples of /-iikaan/ added to roots are listed in (5.16a); examples of /-iikaan/ added to noun stems in (5.16b).

(5.16)

(a) Added to Roots

wəskiikaan /wəsk-iikaan/ new-house	'new house'	IN
alaamiikaan /alaam-iikaan/ inside-house	'inside the house'	IN
maaweewiikaan /maaweew-iikaan/ gather-house	'church'	IN
čankiikaanəš /čank-iikaan-əš/ small-house-dim	'little house (dim.)'	IN
čpwiikaan /čəpw-iikaan/ pointed-house	'house with pointed roof'	IN
kiišəwiikaan /kiišəw-iikaan/ warm-house	'warm house'	IN
amankačiikaanal /mamankat-iikaan-al/ big (redup)-house-pl	'big houses (pl.)'	IN
pahtamawiiikaan /pahtamaw-iikaan/ pray-house	'church'	IN

(b) Added to Noun Stems

asən-iikaan	'stone house'	IN
pasiikaaxkw-iikaan	'board house'	IN
wšapakwiiwan-iikaan cloth-house	'tent'	IN

The lexical entry for this suffix is as in (5.17).

(5.17)

[-iikaan/ 'dwelling']
[+N -V]
[-animate]
[-M]
{ N ⁻¹ } { X ⁻² } —

5.2.1.2 /-čəy/ 'excrement'

The suffix /-čəy/ is added to roots and to noun stems, forming noun stems denoting excrement. That is, it is used in both primary and secondary derivation. This final may be a diminutive variant of the dependent noun /-təy/ 'backside', since it appears to show the effect of the rule of consonant harmony (R8), according to which /t/ is modified to /č/ in diminutive noun and verb stems. The examples in (5.18a) show /-čəy/ added to roots; the examples in (5.18b) show /-čəy/ added to stems. Nouns formed with this suffix are always inanimate in gender. Possessive forms of nouns formed with this suffix were not elicited. Therefore it is not known if they occur with the possessive suffix /-əm/.

(5.18)

(a) Added to Roots

nsəkčəy	IN
/nəsək-čəy/	
black-excrement	

(b) Added to Noun Stems

mwaakaneewčəy /mwaakaneew-čəy/ dog-excrement	IN
kiikiipšəčəy /kiikiipəš-ə-čəy/ chicken-Ēp-excrement	IN
nehnayoonks-ə-čəy /nehnayoonkəs-ə-čəy/ horse-Ēp-excrement	IN

The noun stems which result from the suffixation of this suffix are semantically compositional. Nouns containing this final will be derived rather than listed. The lexical entry for this suffix will be as in (5.19).

(5.19)

<div> <div>[-čəy/ 'excrement']</div> <div> <div>[+N -V]</div> <div>[-animate]</div> </div> <div> <div>{ N⁻¹ }</div> <div>{ X⁻² } ---</div> </div> </div>
--

5.2.1.3 /-nčəw/ 'dish, kitchen item'

This suffix is attached to roots, and to noun stems, forming nouns which denote various types of plates and food containers. Nouns formed with this suffix are always inanimate in gender. These nouns do not take the possessive suffix /-əm/ when inflected for possession. Examples in which /-nčəw/ is added to roots are given in (5.20a), to stems in (5.20b). In some respects /-nčəw/ has the properties of a bound variant of a noun stem, rather than those of a noun final, since this suffix occurs in Noun Incorporation construc-

tions, as in the examples in (5.21) below, although it does not correspond to an independently occurring noun stem (see §4.4.2 for further discussion).

(5.20)

(a) Added to Roots

pak-ii-nčəw flat-Ep-dish	'plate'	IN
šənkaw-ii-nčəw level-Ep-dish	'saucer'	IN

(b) Added to Noun Stems

wšaphoos-ii-nčəw pail-Ep-dish	'tin pan'	IN
pepəl-ii-nčəw pepper-Ep-dish	'pepper shaker'	IN
šiiwank-ii-nčəw salt-Ep-dish	'salt shaker'	IN
šookəl-ii-nčəw sugar-Ep-dish	'sugar bowl'	IN
tiih-ii-nčəw tea-Ep-dish	'cup, teacup'	IN
xwəs-ii-nčəw wood-Ep-dish	'wooden plate'	IN

The examples in (5.21) resemble noun incorporation constructions (§4.4), since /-nčəw/ is followed by 'post-medial' /-ee/.

(5.21)

wəliinčəweextiikeew
/wəl-ii-nčəw-ee-x-t-iikee-w/
good-dish-PM-lay/be-TI-AI-3
'he sets the table'

kəmaaweenčəweextiike
/kə-maawee-nčəw-ee-x-t-iikee/
2-assemble-dish-PM-lay/be-TI-AI
'you gather up the dishes'

kšiiixiinčəweextiikeew
/kəšiiix-ii-nčəw-ee-x-t-iikeew/
wash-Ep-dish-PM-lay/be-TI-AI-3
'he washes the dishes'

The lexical entry for this suffix is as in (5.22).

(5.22)

[-nčəw/ 'dish; bowl']
[+N -V]
[-animate]
[-M]
{ N ⁻¹ X ⁻² } --

5.2.2 Unproductive Concrete Noun Finals

The noun finals discussed in this section do not appear to be productive, in that most of them occur in a small number of forms. Most of the stems containing these finals are analysed as being listed in the lexicon rather than derived.

5.2.2.1 /-aapeew/ 'man'

The noun final /-aapeew/ 'man' is added to roots in the examples in (5.23). Historically, this is a bound variant of a noun stem /naapeew/ which does not occur in present-day Delaware.

(5.23)

lənaapeew /ələn-aapeew/ ordinary-man	'Delaware, Indian'	AN
kih:k-aapeew mature-man	'adult single male'	AN
mat-aapeew bad-man	'thief'	AN
mat-ah-aapeew ¹⁴	'bad, good for nothing man'	AN

¹⁴ The status of the morpheme /-ah-/ in this example is uncertain.

5.2.2.2 /-akwiiwan/ 'cloth'

The noun final /-akwiiwan/ 'cloth' is added to roots in the examples in (5.24). In (5.24c), /-akwiiwan/ is added to a root /weent-/ which was recorded in only one other stem, /weent-aamee-/ 'fish with a line'. Historically this noun final is a bound variant of a noun stem /akwiiwan/ 'cloth' which does not occur in present-day Delaware. Brinton and Anthony (1888: 15) list a noun stem "Akquiwan" 'blanket', which may be phonemicized as /akwiiwan/, a term not recognized or accepted by my informants.

(5.24)

(a)	wšapakwiiwan /wəšap-akiiwan/ thin-cloth	'cloth'	IN
(b)	pxankakwiiwan ¹⁵ /pəxank-akwiiwan/ patch-cloth	'quilt'	IN
(c)	weent-akwiiwan	'dress, coat'	IN

5.2.2.3 /-ameekw/ 'fish'

The noun final /-ameekw/ 'fish' is added to roots in the examples in (5.25a) and to stems in (5.25b). This noun final is a bound variant of a noun stem /nameekw/ which no longer occurs in Delaware.

(5.25)

(a)	<u>Added to Roots</u>		
	čankameekw /čank-ameekw/ small-fish	'small fish'	AN
	xwatameekw /məxat-ameekw/ big-fish	'big fish, mullet'	AN

¹⁵ This stem is sometimes pronounced [pxaŋkwiiwan].

(b) Added to Noun Stems

wšaphoosameekw /wəšapahoos-ameekw/ pail-fish	'shiner (fish)'	AN
asənameekw /asənameekw/ stone-fish	'stonefish'	AN

5.2.2.4 /-hleew/ 'bird'

The final /-hleew/ 'bird' occurs in only a few forms. The examples in (5.26a) show /-hleew/ added to a root; the examples in (5.26b) show /-hleew/ added to noun stems.

(5.26)

(a) Added to Roots

awehleew	'hawk'	AN
awehleešooš	'bird'	AN

(b) Added to Nouns

lənəwehleew	'male fowl'	AN
oxkwehleew	'female fowl'	AN

5.2.2.5 /-m/ 'fruit, berry, seed'

The noun final /-m/ 'fruit, berry, seed' is added to roots, forming nouns which refer to fruits, etc. The suffix /-m/ occurs in only a small number of noun stems. Nouns formed with this final are inanimate in gender. This final is a reshaped form of the Proto-Algonquian bound variant of a noun stem *-min (Goddard 1982: 18). In the examples in (5.27a-g), this final is added to a root or root followed by a medial. In (5.27h), /-m/ is added to the noun stem /waxkan/ 'bone'.

(5.27)

(a) xwaskwiim /məx-askw-ii-m/ big-grass-Ep-seed	'corn'	IN
---	--------	----

(b)	ptəkwiim /pətək-w-ii-m/ round-Ep-seed	'walnut'	IN
(c)	waap-ii-m white-Ep-seed	'chestnut'	IN
(d)	paak-ii-m noisy-Ep-seed	'cranberry'	IN
(e)	w-teeh-ii-m ¹⁶ pre-heart-Ep-seed	'strawberry'	IN
(f)	wiisak-ii-m tender-Ep-seed	'grape'	IN
(g)	kehtaa-m ¹⁷	'hazelnut'	IN
(h)	waxkan-ii-m bone-Ep-seed	'seed'	IN

The suffix /-m/ occurs in only a small number of noun stems. The nouns containing the suffix /-m/ are analysed as listed, rather than derived by morphological insertion.

5.2.2.6 /-miinšəy/ 'tree'

A few tree names are formed with noun final /-miinšəy/ 'tree species'. This final is related in some way to the final /-oonšəy/ which is found in a few noun stems. Examples are listed in (5.28a); examples of /-oonšəy/ are listed in (5.28b).

(5.28)

(a)	ptəkwiimiinšəy	'walnut tree'	AN
	asənaamiinšəy	'hard maple tree'	AN
	šaweemiinšəy	'beech tree'	AN
(b)	xwaškoonšəy	'corn cob'	AN
	wiinoonšəy	'onion'	AN
	asan(a)koonšəyak	'elderberries (pl.)'	AN
	wəlaakanahoonšəy	'American elm tree'	AN

¹⁶ The noun stem /-teeh-/ 'heart' is a dependent (obligatorily possessed) noun; the final /-m/ is added to the root /-teeh/ preceded by the prefix /wə-/ discussed in §3.1.1.1.

¹⁷ The meaning of this root is unknown.

5.2.2.7 /-aapoow/ 'water';

A small number of nouns are formed with a suffix /-aapoow/ 'water/liquid'. This final does not have any synchronic relationship to the medial /-əp-/ 'water', or to the verbs formed with /-aapəw-ee/ 'be liquid'. In the examples in (5.29a-b), /-aapoow/ is added to noun stems, and to roots, respectively. There are very few nouns formed with /aapoow/.

(5.29)

(a) Added to Noun Stems

ʒookəl-aapoow	'sap, Kool-Aid'	IN
sugar-water		
ʒiiwank-aapoow	'salty water'	IN
salt-water		

(b) Added to Roots

ʒəw-aapoow	'vinegar'	1N
sour-water		

5.3 Nouns Formed in Primary Derivation With Medials

Primary nouns formed with medials occur in two patterns. In the first, a primary noun stem consists of a root followed by a classificatory medial (Ch. IV) and the abstract final suffix /-w/. The structure of these nouns is analysed in §5.3.1. In the second, a primary noun stem consists of a root followed by a medial ending in /-w/ and no final /-w/. In §5.3.2 it is argued that noun stems of the second type should be assigned the same structure as the noun stems discussed in §5.3.1 which contain the suffix /-w/.

5.3.1 Nouns Formed in Primary Derivation With Medial and Final

Some nouns consist of a root followed by a 'classificatory' medial, the suffix /-ak-/, and a noun-forming suffix /-w/. In this pattern the abstract final suffix is /-w/ in all cases recorded. The status of other noun stems which end in a segment /-w/ is discussed in

§5.1.3. The classificatory medials recorded in noun stems formed with the final /-w/ are listed in (5.30).¹⁸

(5.30)

- | | | |
|-----|---------------|--------------|
| (a) | /-əpee-(a)k-/ | 'water' |
| (b) | /-eew-ak-/ | 'meat' |
| (c) | /-aht-ak-/ | 'stringlike' |

Examples of each type are given in (5.31).

(5.31)

- | | | | |
|-----|--|---------------|----|
| (a) | thəpeekw
/tah-əp-ee-ak-w/
cold-water-PM-final | 'spring well' | IN |
| (b) | askeewakw
/ask-eew-ak-w/
raw-meat-PM-final | 'raw meat' | IN |
| (c) | oolihkahtakw
/oolihk-ahtak-ɣ/
blue-stringlike-PM-final | 'blue thread' | IN |

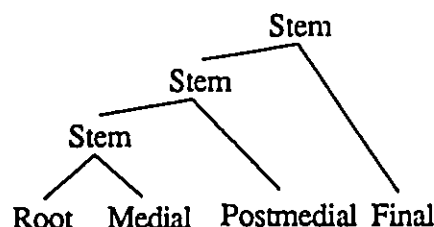
The sequence of suffixes /-eew-ak/ 'meat' (5.32b) forms a large number of nouns, as does the sequence of suffixes /-aht-ak-/ 'stringlike' (5.32c). Only a small number of noun stems are formed with /-əpee-ak-/ (5.32a). The sequence of suffixes (5.31b) /-eew-ak-/ 'meat' only forms nouns; /-əpee-ak/- and /-aht-ak-/ form both nouns and verbs. The other classificatory medials (Ch. IV) were not recorded followed by noun-forming suffixes in primary nouns.¹⁹

¹⁸ Several noun stems also contain /-ak-w/, but are not preceded by a classificatory medial: waal-ak-w 'hole'; əwan-ak-w 'white man'; and wənt-ak-w 'direction'.

¹⁹ The status of the classificatory medial /-aapoxk-/ 'metal solid' followed by abstract noun final /-w/ is discussed in §4.1.

In the typical case, classificatory medials are found in verb and noun stems consisting of a root, classificatory medial, 'postmedial' suffix, and a final suffix of the appropriate category. Informally, the structure is as in (5.32).

(5.32)



As discussed in Ch. I, the position taken here is that the terms 'medial' and 'final' do not refer to distinct classes of constituents. Rather, 'medials' and 'finals' are types of suffixes with distinct lexical properties; it is in the latter sense that these terms are used here. Finals are morphemes whose lexical entries contain feature specifications for grammatical category ($[\pm N, \pm V]$), and diacritic features for gender ($[\pm \text{animate}]$). Lexical entries for medials do not contain specifications of features for grammatical category, or for the feature $[\pm \text{animate}]$, although they will, for example, contain indications of lexical meaning.

As was discussed in §1.5.1, Delaware stems conform to the Righthand Head Rule (RHR). The rightmost morpheme in a stem determines the grammatical category of the stem. This characterization of the difference between the lexical entries of medials and finals predicts that a multimorphemic stem must contain a final, since, as was argued in §1.6, the lexical entries of most roots do not contain specifications for grammatical category.

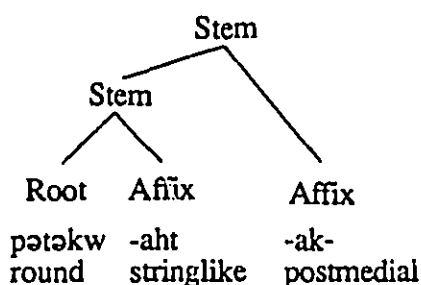
The distribution of classificatory medials in nouns may be accounted for by the word structure rules proposed in §1.5.4. These are reproduced here.

(5.33)

- (a) Word --> (Af) Stem (Af)
- (b) Stem --> Stem (Af)
- (c) Stem --> Root (Af)

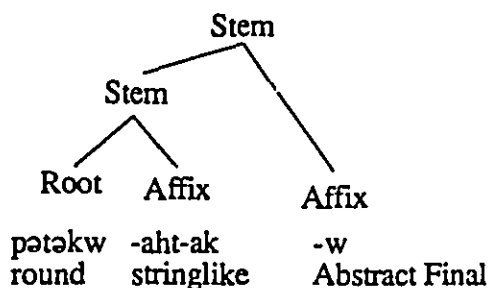
Let us assume that concatenations of Root+Medial are generated by (5.33c) above. Thus (5.34) represents a partial tree structure.

(5.34)



This is not a well formed word-structure tree, because there is no morpheme which specifies grammatical category. The medial /-aht-/ and 'postmedial' /-ak-/ do not furnish specifications of categorial information or of argument structure. As a result, (5.34) has no head, and cannot be interpreted. In order to form a word-structure tree which contains a specification for grammatical category, a final suffix must be lexically inserted into a word-structure tree, as in the well-formed structure in (5.35).

(5.35)



In examples (5.34) and (5.35) I assume that sequences of a root and a medial are dominated by a stem node. I hypothesize that the sequence of root, medial, and postmedial

xəwahkw /məxəw-ahkw/ old-wood	'old tree'	AN
wiinahkw /wiin-ahkw/ pain-wood	'sassafras'	AN
(b) <u>Added to Noun Stems</u>		
šəntahkw /šənt-ahkw/ hemlock-tree	'cedar tree'	AN
wsiihahkw ²⁰ /wə-siit-ahkw/ 3-foot-wood	'handle'	IN
kaawənšahkw /kaawənš-ahkw/ thistle-wood	'thistle bush'	AN
aapələšahkw /aapələš-ahkw/ apple-wood	'apple tree'	AN

The nouns in (5.39) all contain /-ahkw-/. However, the identification of the material preceding /-ahkw-/ is not certain.

(5.39)

wənaxkwiht-ahkw	'branch'	IN
wihkwan-ahkw	'tree stump'	IN
paawsəw-ahkw	'poplar tree'	AN
wčəpakw-ahkw	'evergreen tree'	AN

The examples in (5.38a) represent primary derivation, since /-ahkw-/ is being added to a root. The examples in (5.38b) are analysed as secondary derivation, as the suffix /-ahkw-/ is added to noun stems.

Consider now the case of nouns which consist a root and a medial, but no final, as are found in words such as (5.40).

²⁰ The first member of this form is a dependent (i.e. obligatorily possessed) noun: wsiih 'his foot'.

(5.40)

čīipahkw
 /čīip-ahkw/
 frightful-wood
 'bad, frightful tree'

I propose that words of this type do contain a noun final /-w/ underlyingly, but that it is always deleted in these forms by phonological rule. There is an independently motivated phonological rule which deletes word-final /-w/ after any consonant except /-k/ (R35). This solution is not unmotivated, since exactly this situation obtains in the formation of certain types of Transitive Animate verb stems, where a morpheme /-w/ '3' is deleted when it follows the 'inverse' theme marker /-əkʷ/ (Goddard (1979a: 111)). It will not be necessary to stipulate any extra rule. Therefore, nouns such as (5.40) čīip-ahkw are structurally analogous to nouns such as (5.35) ptəkʷ-aht-ak-w 'rope'. The superficial differences between them are due to the effects of the phonological rule R35.

It is also necessary to consider the possibility that the lexical entry for the morpheme /-ahkw-/ 'wood' does contain specifications for grammatical category. For example, /-ahkw-/ could be specified [+N,-V]. When appearing in noun stems such as (5.40) čīipahkw 'bad tree', the categorial status of (5.40) would follow from the appearance of /-ahkw-/ in the rightmost position in the stem, that is, as the morphological head of the word. When /-ahkw-/ occurs in verb stems such as kwənahkwat 'it (wood) is long', the verb-forming suffix /-at/ is the morphological head of the word. In accordance with the Percolation conventions discussed in §1.5, the features [+V,-N] associated with /-at/ will determine the grammatical category of the stem.

It is necessary to determine whether /-ahkw-/ would be the only classificatory medial specified for grammatical category. If /-ahkw-/ is specified for grammatical category, it could be proposed that the lexical entries for all classificatory medials contain specifications

for grammatical category. This position has an undesirable feature, in that it would not be possible to determine the category features of medials in a non-ad hoc manner, because in most cases medials are followed by verb or noun finals. Because the final is the head of the stem, the category features of the medial will never be realized.

If it is assumed that medials are lexically specified for grammatical category, no account would be evident for why it is normally the case that stems which consist of a root and medial, such as /pətək-w-aht-ak-/ must be followed by a final. The only classificatory medials which occurs in rightmost position in a noun stem are /-ahkw-/ and /-askw-/ 'grass'. It is the behaviour of these particular morphemes which must be accounted for. This may be achieved by analysing nouns which contain /-ahkw-/ 'wood' and /-askw-/ 'grass' as being formed with a final suffix /-w/ which is deleted for phonological reasons. As a result, the pattern described above can be analysed as part of the general pattern of primary nouns formed with a medial, that is, they are formed with an abstract final.

CHAPTER VI

SECONDARY DERIVATION OF NOUNS

6.0 Introduction

This chapter discusses the formation of nouns by secondary derivation. Secondary derivation of nouns refers to the formation of noun stems from existing stems. Some patterns of this type were discussed in Ch. IV, when analysing noun-forming suffixes which are added to both roots and stems. There are two major types of nouns formed by secondary derivation: (a) nouns derived from verb stems; and (b) denominal nouns, that is, nouns derived from noun stems. Productive patterns of secondary derivation of nouns are rare. Certain suffixes are used both in primary and secondary derivation. Some noun-forming suffixes are added to both stems and roots. These suffixes were discussed in Ch. V. Suffixes which are used uniquely in secondary derivation are discussed here.

6.1 Nouns Derived From Verb Stems

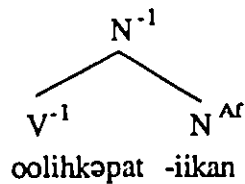
Suffixes which form noun stems from verb stems are described here. These include: (a) the very common suffix /-(ii)kan/ 'tool, instrument'; (b) the less frequent /-aakan/; and the rare (c) /-(oo)n/.

Nouns formed in secondary derivation from verb stems may be accounted for by the word structure rule in (6.1). For example, the noun oolihkpatiikan 'blueing' is formed by adding the noun-forming suffix /-iikan/ to the TI stem /oolihkəpat-/ 'put blueing on it'.

(6.1) $N^{-1} \rightarrow V^{-1} N^A$

The tree structure generated by this rule is as follows.

(6.2)



6.1.1 /-(ii)kan/ 'tool, instrument'

Nouns denoting tools and other types of instruments are derived from TI verb stems by the addition of /-(ii)kan/ to TI stems. The resulting noun is usually inanimate in gender, although some animate nouns formed with /-(ii)kan/ were recorded. Nouns formed with /-(ii)kan/ do not take the possessive noun suffix /-əm/ (§7.3.2). Often there are triplets consisting of (a) a TI stem; (b) a derived AI verb stem formed with /-iik-ee/; and (c) a noun stem formed with /-iikan/.

(6.3)

(a) TI Stem

wtoolihkpatoon
 /wə-t-oolihk-əpa-t-oo-n/
 3-Ep-blue-water-TI-TI2-3
 'she puts blueing on it'

(b) AI Stem

oolihkpatiikeew
 /oolihk-əpa-t-ii-kee-w/
 blue-water-TI-Ep-AI-3
 'she uses blueing'

(c) Noun Stem

oolihkpatiikan
 /oolihk-əpa-t-iikan/
 blue-water-TI-noun final
 'blueing'

While it is common for all three stems of the types represented in (6.3) to occur, it is also common for one or two of the three to be non-occurring. For example, a TI stem and a corresponding instrumental noun might occur, but no corresponding AI stem. The nonsystematic nature of the gaps can be accounted for by assuming that /-(ii)kan/ has a single lexical entry, independent from that for /-(ii)kee/.

In some cases it is difficult to determine whether or not the suffix has been added to a Transitive Inanimate or a Transitive Animate stem. I shall argue that /-iikan/ is usually added to a TI stem. However there is a small number of cases where it is clearly added to a TA stem. For instance, the noun 'sword' was recorded both as tankamiikan, and tankantiikan.

(6.4)

- (a) tankamiikan
/tankam-iikan/
stab someone-tool
'sword'
- (b) tankantiikan
/tankam-t-iikan/
stab someone-TI-tool
'sword'

The noun stem in (6.4a) may be analysed as having /-iikan/ added to a TA verb stem /tankam-/ 'stab someone'. Similarly, the noun stem in (6.4b) may be analysed as having the suffix /-iikan/ added to a TI verb stem /tankam-t-/ 'stab something'. Both nouns are inanimate in gender. Noun stems in which /-iikan/ occurs suffixed to a TA stem are rare, and are analysed here as exceptional. They will be listed in the lexicon rather than derived by morpholexical insertion.

The final /-(ii)kan/ is added frequently to TI stems which end in the prefinal /-ah/ 'by tool' (6.5a) and to other TI finals (6.b-d).

(6.5)

(a)	<u>Added to /-ah-/</u>	'by tool'	
	čiiłkhiikan /čiiłk-ah-iikan/ sweep-by tool-tool 'broom'		IN
	təmahiiikan /təmə-ah-iikan/ sever-by tool-tool 'axe'		IN
	škwahiiikan /šəkw-ah-iikan/ crush-by tool-tool 'pounding block'		IN
	ehanshiikan /eh-ans-ah-iikan/ redup-scoop-by tool-tool 'well sweep'		IN
	təmaskhiikan /təmə-ask-ah-iikan/ sever-grass-by tool-tool 'scythe'		IN
	pakahiikan /pak-ah-iikan/ hit-by tool-tool 'barn'		IN
	payaxkhiikan /payaxk-ah-iikan/ strike with lightning-by tool-tool 'gun'		IN
	kehkaasiinkwechiikan /keh-kaas-iinkw-ee-ah-iikan/ redup-wipe-face-by tool-tool 'towel'		IN
	poonthiikan /poont-ah-iikan/ weigh-by tool-tool 'scale'		IN
	kteekhiikan /kət-eełk-ah-iikan/ out-sheetlike-by tool-tool 'camera'		IN

	peenkwahkhwiikan /peenkw-ahkw-ah-iikan/ dry-wood/solid-by tool-tool 'tea towel'	IN
	kaasahkhwiikan /kaas-ahkw-ah-iikan/ wipe-wood/solid-by tool-tool 'tea towel'	IN
(b)	<u>Added to /-əʃ/</u> 'by cutting edge'	
	paxkšiikan /paxk-əʃ-iikan/ burst-by cutting-tool 'knife'	IN
	pkwəšiikan /pəkw-əʃ-iikan/ hole-by cutting-tool 'awl'	IN
(c)	<u>Added to Finals Ending in /-t/</u>	
	pootaatiikan /poot-aat-iikan/ blow-TI-tool 'horn'	IN
	kox-p-t-iikan firmly-tie-TI-tool 'string'	IN
	wiixkwee-p-t-iikan wrap-tie-TI-tool 'wrapping, bandage'	IN
	oolihkpatiikan /oolihk-əp-at-iikan/ blue-water-TI-tool 'blueing'	IN
	ah-t-iikan place-TI-tool 'container'	IN
(d)	<u>Added to /-ən/</u> 'by hand'	
	šam-ən-iikan grease-by hand-tool 'grease'	IN

wtəniikan /wət-ən-iikan/ pull-by hand-tool 'harness tug'	IN
teh-tawee-naxk-ən-iikan redup-open-hand-by hand-tool 'gate'	IN

Instrumental nouns formed with /-iikan/ are almost invariably inanimate in gender. The lexical entry for this suffix will be specified as [-animate]. Nouns formed with /-iikan/ which are animate in gender will be listed. Noun stems formed with /-iikan/ usually do not add the possessive suffix when they are inflected for possession.¹ The lexical entry for the suffix /-iikan/ will be as in (6.6).

(6.6)

[-iikan/ 'tool; instrument' [-animate] [-M] V-1__

Since there is a nominalizing suffix /-n/, a case could be made that noun stems ending in /-kan/ are derived from AI verbs formed with /-kee/ (these AI verbs are themselves derived from TI and TA stems, as in §3.2.1.2). However, as noted above, there is no consistent relation between a derived noun ending in /-kan/ and the corresponding AI verb, since often the AI verb does not occur. I assume that there is a suffix /-iikan/ which attaches to TI stems, as well as a suffix /-iikee/ which attaches to TI stems and some TA stems.

¹ Goddard (1982: 41, Fn. 142) notes forms such as paxkšiikanəm 'his gun', produced when speakers were made aware that paxkšiikan could mean either 'gun' or 'his gun'.

There are cases where /-(ii)kan/ occurs added to inputs which do not ever occur as TI stems (see in particular the discussion of stems formed with /-a.ɬ-/ 'cutting edge' (examples in (6.9)). For some nouns, no underlying TI stem was recorded even though the structure of the stem is, at least in some cases, relatively clear.

(6.7)

taatpəniikan	'wagon'	AN
takwalooniikan	'scissors'	IN
piintpehlatiikan	'funnel'	IN
maxkeewehlatiikan	'flag'	IN
kpaapehlatiikan	'curtain'	IN
sakeehiikan	'ladder'	AN
lehleewhiikan	'fan'	IN
laapeex(h)iikan	'plow'	IN
wtaloohiikan ²	'his pointing finger'	IN
čiix(h)iikan	'comb'	AN
škwəntiikan	'pincers, pliers'	IN
šewəntiikan	'pocket'	AN
akwaaniikan	'fishnet'	AN
paasawiix(h)iikan	'yeast'	IN

The examples in (6.8) are apparently not formed by adding /-iikan/ to TI stems. Example (6.8a) contains a root /aš-/ which does not occur elsewhere, except perhaps in /ašiilonkwanaa-/ 'perspire from the armpits'. Example (6.8b) contains a root /taw-/ 'open'; /amp-/ may mean 'tie'. Example (6.8c) is a dependent (obligatorily possessed) noun. The initial /w-/ is the third person prefix. This is a rare word for 'his head'. The more common word is wiil; the stem is /-iil/. Example (6.8d) contains a root /wiix-/ 'hair'; the status of the segment /-ee-/ in this form is uncertain.

(6.8)

(a)	ašiikan	'sock'	IN
(b)	ntawampiikan	'my jaw'	IN
(c)	wiiləštiikan	'his head'	DI
(d)	wiixeeikan	'body hair'	IN

² Also recorded as wtaloohiikan.

The noun stems in (6.7) and (6.8) will be listed in the lexicon, with the appropriate assignment of word structure.

The suffix /-(ii)kan/ also occurs following a morpheme /-anš-/ which does not otherwise occur in TI stems. Some relationship with the prefinal /-əš-/ 'by cutting edge' seems likely, but is not synchronically evident.

(6.9)

kiinanšiikan /kiin-anš-iikan/ sharp-knife-tool	'sharp knife'	IN
amankatanšiikan-al /mamankat-anš-iikan-al/ big-knife-tool-pl	'big knives'	IN
xwanšiikan ³ /məx-anš-iikan/ big-knife-tool	'American, big knife'	AN
xwatanšiikan /məxat-anš-iikan/ big-knife-tool	'American, big knife'	AN
mpočəlanšiikan /nəpočəl-anš-iikan/ butcher-knife-tool	'butcher knife'	IN

6.1.2 /-aakan/ 'nominalizer'

The suffix /-aakan/ also forms noun stems, most productively from intransitive verb stems which have an animate subject. There are some stems which might be analysed as containing either /-aakan/ or /-iikan/.

The most productive use of /-aakan/ is in the formation of stems consisting of an Animate Intransitive (AI) or Objectless Transitive Inanimate (OTI) verb stem followed by

³ Both forms meaning 'American, big knife' are animate in the sense 'American' and inanimate as 'big knife'.

the morpheme previously referred to as 'connective /-w/' (§1.7) and /-aakan/, forming abstract nominals. The distribution and function of connective /-w/ is discussed in §1.7.

The resulting nominalizations are always semantically transparent, reflecting directly the meaning of the stem to which /-aakan/ is added. These nouns are always inanimate in gender. Possessive forms were not elicited, but it is expected that, like most noun stems formed with suffixes ending in /-n/, they would not take the possessive suffix /-əm/. Examples added to AI stems are given in (6.10a). The examples in (6.10b) contain /-w-aakan/ added to Objectless Transitive Inanimate (OTI) stems.⁴ OTI stems are those that have the morphological composition of Transitive Inanimate (TI) verb stems, but function morphosyntactically as Animate Intransitive (AI) stems (§2.3.3).⁵

(6.10)

(a) Added to AI Stems

pəmaawsəwaakan /pəmaawəsii-w-aakan/ live-CW-final 'life'	IN
sookənəpaasəwaakan /sookənəpaasii-w-aakan/ be baptized-CW-final 'baptism'	IN
aamwii-w-aakan get up from lying-CW-final 'Resurrection'	IN
ahwaaltəwaakan /ahwaal-tii-w-aakan/ love- recip-CW-final 'loving'	IN
alaaxiiməwaakan /alaaxiimwii-w-aakan/ rest-CW-final 'resting (esp. after death)'	IN

⁴ One instance was recorded of /-w-aakan/ added to a TI Class 3 verb stem: miičəwaakan /miičii-w-aakan/ eat something-CW-final 'food' (IN).

⁵ The following stem is also reminiscent of this pattern: ptəkwaləncəewaakan 'fist' (IN).

hələniixsəwaakan /hələniixəsii-w-aakan/ speak an Indian language-CW-final 'speaking an Indian language'	IN
kənteeləməkwəsəwaakan /kənteeləməkwəsii-w-aakan/ be condemned-CW-final 'condemnation'	IN
maskanəsəwaakan /maskanəsii-w-aakan/ be strong-CW-final 'strength'	IN
mataawsəwaakan /mataawəsii-w-aakan/ be a sinner-CW-final 'sin'	IN
matalohkee-w-aakan do evil-CW-final 'evil'	IN
miiltəwaakan /miil-tii-w-aakan/ give to someone- recip-CW-final 'gift'	IN
miixanəsəwaakan /miixanəsii-w-aakan/ be ashamed-CW-final 'shame'	IN
wəlaamwee-w-aakan say good things-CW-final 'truth'	IN
wəlahteenaməwaakan /wəlahteenamwii-w-aakan/ be happy-CW-final 'happiness'	IN
wəlakəniimkwəsəwaakan /wəlakəniiməkwəsii-w-aakan/ be favourably talked about-CW-final 'good name'	IN
(b) <u>Added to OTI Stems</u>	
pooneeləntaməwaakan /pooneeləntam-ə-w-aakan/ give up-Ep-CW-final 'forgiveness'	IN

amantaməwaakan /amantam-ə-w-aakan/ painful sensation-Ep-CW-final 'feeling in a sore body part'	IN
aweentaməwaakan /aweentam-ə-w-aakan/ suffer-Ep-CW-final 'extreme pain, suffering'	IN
wəleeləntaməwaakan /wəleeləntam-ə-w-aakan/ be glad-Ep-CW-final 'happiness'	IN

The suffix /-aakan/ is added to any intransitive verb stem; the resulting noun stems are semantically compositional. It is appropriate that these stems be derived by morpholexical insertion. The suffix /-aakan/ has the lexical entry in (6.11).

(6.11)

[-aakan/
[+N -V]
[-animate]
V-I ____

The suffix /-aakan/ also occurs in noun stems which are formed from Transitive Animate stems formed with /-kw(aa)-I-/, which have corresponding TI stems formed with /-kw/. The meaning of the morpheme /-kw-/ is discussed in §2.1.3.

(6.12)

peenkw-ii-kw-aakan dry-Ep-tool-final	'tea towel'	IN
pihtaw-ii-kw-aakan double-Ep-tool-final	'lining of coat'	IN
lxeekwaakan /laxee-kw-aakan/ loosen-tool-final	'rake'	IN

maawee-kw-aakan
gather-tool-final

'rake'

IN

For example, (6.13a) 'tea towel' has a corresponding TA formed with prefinal /-kw(aa)-/ 'tool' and TA final /-l/ (6.13b); the corresponding TI (6.13c) is formed with prefinal /-kw-/ and no TI (§2.1.3).

(6.13)

- | | | |
|-----|--|-----------------------|
| (a) | peenkwii kwaakan
/peenkw-ii-kw-aakan/
dry-Ep-tool-nom | 'tea towel' |
| (b) | mpeenkwii kwaalaaw
/nə-peenkw-ii-kw-aal-aa-w/
dry-Ep-tool-TA | 'I dry someone off' |
| (c) | mpeenkwii kwamən
/peenkw-ii-kw-aŋ-ən/
dry-Ep-tool | 'I dry something off' |

The analysis of these forms is uncertain. They could be analysed as containing /-(ii)kan/ (§6.1.1) added to a TA stem ending in /-l/. This would entail that the TA final is deleted when /-kan/ is added. It should be noted that the morphophonological behaviour of TA stems ending in /-l/ is irregular in several contexts (§2.1.3). It appears to drop irregularly before several morphemes, including /-sii/ 'middle reflexive' (§3.2.3.2). Alternatively, it could be claimed that the suffix /-aakan/ is being added to a TI stem formed with /-kw/. However, in the other data examined in this section /-aakan/ is affixed only to intransitive verbs.

In some instances /-aakan/ is added to a root or sequence of root and medial which otherwise only forms an AI stem, usually one ending in /-ee/ (except for (6.14f) 'feast', which has an AI stem ending in /-ii/).⁶

⁶ The noun niimčeehamaakan 'lacrosse stick' (IN) resembles these forms; note the comparable AI verb stem /niimčeeahamaa-/ 'play lacrosse'.

(6.14)

(a)	aaptoon-aakan speak-final	'word, a voice'	IN
	/aaptoon-ee-/	'speak' (AI)	
(b)	alohk-aakan work-final	'servant'	AN
	/alohk-ee-/	'work' (AI)	
(c)	kšiixiinčəw-aakan wash dishes-final	'dishcloth'	IN
	/kəšiiix-ii-nčəw-ee/ wash-Ep-dishes-AI	'wash dishes' (AI)	
(d)	ahkiih-aakan plant-final	'field'	IN
	/ahkiih-ee-/	'plant' (AI)	
(e)	niintaw-aakan ⁷ fire-noun final	'lantern'	AN
(f)	takwiipw-aakan hold a feast-final	'feast'	IN
	/takwiipwii-/	'hold a feast' (AI)	
(g)	təməšahkw-aakan ⁸ cut down wood-final	'saw'	IN

The noun stems in (6.14) appear to be the only ones formed with /-aakan/ occurring after roots (or sequences of root and medial). Nouns are not productively formed by adding /-aakan/ to roots or to sequences of roots and medials. The nouns in (6.14) will therefore be listed in the lexicon.

⁷ Although the AI root underlying 'lantern' is non-occurring, it is attested in the reduplicated agent noun neh-niintaw-ee-s 'fire dragon' (Hewitt 1896).

⁸ No AI stem was recorded, but /təməšahkwee-/ would be expected.

In the examples in (6.15), /-aakan/ is found attached to stems or roots which do not conform to the patterns listed above.

(6.15)

(a)	kwənt-aakan	'throat'	IN
(b)	noon-aakan	'breast, nipple'	IN
(c)	wəl-aakan-əs	'dish'	IN
(d)	səkwiin-aakan	'saliva'	IN
(e)	takwahaakan	'mortar'	IN
(f)	apah-aakan	'roof'	IN
(g)	apahahk-aakan	'roof'	IN
(h)	wiiwəlah-aakan-al	'harness (pl.)'	IN

Example (6.15a) contains an attested TI stem /kwənt-/ 'swallow something'; e.g. nkwəntamən 'I swallow it'. Example (6.15b) contains a root /noon-/ 'suckle', which also occurs in the stem /noon-l/ 'nurse someone', e.g. nohlaaw 'I nurse him'. In example (6.15c), /-aakan/ precedes the root /wəl-/ 'good' (?), and is followed by the suffix /-əs/ (§6.2.1).

6.1.3 /-(oo)n/

A few nouns end in a suffix /-(oo)n/, which is of uncertain meaning. This suffix does not productively form new noun stems. The nouns which are formed with /-oon/ will be listed in the lexicon, rather than derived by morphological insertion.

This suffix results diachronically from the suffixation of secondary noun final /-n/ (§5.0.2) to various types of 'middle reflexive' verbs. As discussed in §3.2.3, AI middle reflexive verbs ended in the vowel *-o. Proto-Algonquian *-o and *-oo merge in Delaware as /-oo/.

Verb stems which appear to serve as the base for the formation of noun stems formed with /-(oo)n/ do occur, as in the examples in (6.16). However, no attempt is made to derive the nouns from the verbs; the formation of noun stems with /-(oo)n/ is not productive, and appears to be limited to those listed in (6.16).

(6.16)

- | | | |
|-----|--|----|
| (a) | skaxeehoon
/sak-ax-ee-h-oon/
grasp-ear-PM-cause-final
'earring'

sakaxeehəw
/sak-axee-h-ii-w/
grasp-ear-cause-AI-3
'she wears earrings' (AI) | IN |
| (b) | laalohkweehoon
/laal-ohkw-ee-h-oon/
rub-hair-PM-cause-final
'comb' | IN |
| (c) | kehkaasiinkweehoon
/keh-kaas-iinkw-ee-h-oon/
redup-wipe-face-PM-cause-final
'towel' | IN |
| (d) | kpahoon
/kəp-ah-oon/
close-by tool-final
'door'

/kəpahw-/
'shut s.o. in, out' (TA) | IN |
| (e) | weewehkaas-oon
'swing'

/weewehkaasii-/
'swing' (AI) | IN |
| (f) | ampiis-oon
'cradleboard'

/takwampiisii-/
'be tied together' (AI) | IN |
| (g) | ahpap-oon
'chair'

/ahpapii-/
'sit upon' (AI) | IN |
| (h) | eehəntaxpoon
'table' | IN |

- (i) wiiwašoon⁹
'bundle, pack'

IN

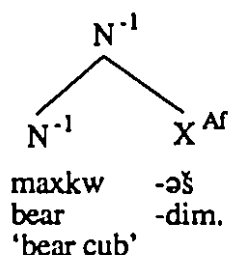
6.2 Denominal Nouns

Suffixes which form noun stems from noun stems are described here. These include (a) the diminutive suffix /-əš/; and (b) the unproductive diminutive suffix /-əs/. The most productive of these is the diminutive suffix /-əš/; the suffix /-əs/ occurs only in a few frozen forms. The structure of denominal nouns may be accounted for by the Word Structure Rule (6.17). Since the resulting noun is always formed by adding a suffix to a noun stem, the suffix is analysed as unspecified for category. Unspecified suffixes may be represented as 'X^{Af}'.

(6.17) $N^{-1} \rightarrow N^{-1} X^{Af}$

The tree structure of the nouns generated by this rule is as in (6.18). For example, the noun maxkw 'bear' forms a diminutive maxkw-əš 'bear cub'.

(6.18)



6.2.1 /-əš/ 'diminutive'

Noun diminutives are productively formed by adding the diminutive suffix /-əš/ to noun stems.¹⁰ The diminutive form of a noun frequently carries a connotation of cuteness, affection, or the like. Presence of the diminutive suffix in a noun stem triggers a shift of

⁹ Cited in Goddard (1982: 22).

¹⁰ Goddard (1979a: Ch. III) discusses verb diminutives.

any instances of /t/ or /s/ in the stem to /č/ and /š/, respectively (R9). Although consonant shift is basically regular, speakers will on occasion fail to shift consonants.

(6.19)

pootaatiikan	'horn'	AN
poočaačii!an-əš	'horn (dim.)'	AN
asən	'stone'	IN
ašən-əš	'stone (dim.)'	IN

While the diminutive suffix may be added to any noun stem, in some instances the diminutive form of a noun has a specialized or independent meaning.

(6.20)

(a)	šookəl	'sugar'	IN
	šookəl-əš	'candy'	IN
(b)	ponkw	'dust'	IN
	ponkw-əš	'moth'	AN
(c)	wiikwahn	'house'	IN
	wiikwahn-əš	'outhouse'	AN

One stem appears to be formed with a double use of the diminutive suffix. The noun šiipoošəš 'creek' is structurally a diminutive of the diminutive of the noun 'river': /šiipəw-əš-əš/ --> šiipoošəš, with regular contraction of the sequence /-əwə-/ (R18). Similar formations have been noted in other Algonquian languages (see e.g. Siebert (1967: 21, 25)).

The diminutive suffix is used to distinguish two pairs of kinship terms (6.21).¹¹

(6.21)¹²

nkək	'my mother'	DA
------	-------------	----

¹¹ The non-productive old diminutive suffix /-əs/ (§6.2.2) is used to differentiate several other pairs of kinship terms.

¹² Delaware kinship terms are discussed in Goddard (1973).

nkək-əš	'my maternal aunt'	DA
nooxw	'my father'	DA
nooxw-əš	'my paternal uncle'	DA

The diminutive suffix does not transmit a feature specification for gender. The gender of a diminutive noun stem is invariably the same as that of the noun stem to which it is added. Both the diminutive and non-diminutive forms of a noun stem are marked with the same inflectional ending, /-al/ for inanimate nouns, and /-ak/ for animate noun stems. For example, mahksən 'shoe' is inanimate when used without the diminutive suffix (6.22a), and when used with the diminutive suffix (6.22b). Similarly, pampiil 'book' is invariably animate in gender (6.22c-d).

(6.22)

- | | | |
|-----|------------------|------------------|
| (a) | mahksən | 'shoe' |
| | mahksən-al | 'shoes' |
| (b) | mahšən-əš | 'shoe (dim.)' |
| | mahksənš-al | 'shoes (dim.)' |
| | /mahkəsən-əš-al/ | |
| (c) | pampiil | 'book, paper' |
| | pampiil-ak | 'books' |
| (d) | pampiil-əš | 'slip of paper' |
| | pampiilš-ak | 'slips of paper' |
| | /pampiil-əš-ak/ | |

The distribution of gender in nouns is accounted for by proposing that the lexical entry for the diminutive suffix contains no diacritic feature for gender. Percolation conventions (§1.5.1) guarantee that gender would be transmitted from the noun stem to which the suffix is added to the mother node. An apparent exception, ponkwəš 'moth', is animate, even though ponkw 'dust', upon which it is based, is inanimate (6.20b). Because the noun

stem ponkwəʃ 'moth' appears to be independent of ponkw 'dust', in terms of features such as gender, ponkwəʃ will be analysed as entered in the lexicon, specified as [+animate].

The lexical entry for the diminutive suffix will be as in (6.23). The diminutive suffix subcategorizes for a noun stem and forms a noun stem. It need not be specified for grammatical category, which will be inherited by percolation from the noun to which the diminutive suffix is added.

(6.23)

$\left[\begin{array}{l} /-əʃ/ \\ \text{'small; cute'} \\ N^{-1} _ \end{array} \right]$
--

6.2.2 /-əs/ Noun Formative

Historically, the suffix /-əs/ formed noun diminutives. Productive noun diminutives are now formed with the suffix /-əʃ/ (§6.2.1). The suffix /-əs/ appears to be entirely lacking in meaning. The diminutive origin of /-əs/ is reflected in a few pairs of nouns:

(6.23)

axkook axkook-əs	'snake' 'insect'	AN AN
mihtəkw mihtkw-əs	'tree' 'branch'	AN IN
noohəm noohəm-əs	'my grandmother' 'my stepmother'	DA DA
nəmoxoom nəmoxoom-əs	'my stepfather' 'my grandfather'	DA DA

Several forms were recorded both with and without the /-əs/ suffix, with no apparent distinction of meaning.

(6.24)

mooškiinkw-əs	'rabbit'	AN
mooškiinkw	'rabbit'	AN
niimat-əs	'my brother (man speaking)'	DA
niimat ¹³	'my brother (man speaking)'	DA

The examples in (6.25) have /-əs/ added to roots, or to other sequences of morphemes.

(6.25)

aapiikwəs	'mouse'	AN
škaakwəs	'skunk'	AN
pokwəs	'bedbug'	AN
xwəs	'wood'	IN
eeliikwəs	'ant'	AN
ceemhwaanəs	'spoon'	AN
mooxwees	'white grub'	AN
wiisaawaniikwəs	'red squirrel'	AN
akwaaniilənəs	'thimbleberry'	AN
aweeyayəs	'animal'	AN
maansakwəs	'fine comb'	AN
wəlaakanəs	'dish'	IN
xwaskwəs	'muskrat'	AN
wiiniinkwəs	'mink'	AN
keentəwees	'Christian Indian'	AN
naaniitəs	'doll'	AN

Some of the noun stems in (6.25) appear to consist of several morphemes. For example, wiiniinkwəs 'mink' consists of /wiin-/ 'dirty (?)', painful', /-iinkw-/ 'face', and /-əs/. However, in others the element(s) to which /-əs/ appears to be added is a hapax legomenon: naaniitəs 'doll'. These stems are listed.

Several stems appear to have the suffix /-əs/ added twice. The stem for 'lake' (6.26a) is based upon /nəpəy/ 'water'. The underlying form is /nəpəy-əs-əs/, with regular

¹³ This form is cited in Goddard (1973: 40), but was not recorded by me.

contraction of /-əy-ə-/ to [-ii-] (R20). Similarly, the stem for 'girl' (6.26b), which is based upon /oxkweew-/ 'woman', also contains two occurrences of /-əs/.

(6.26)

(a)	mpiisəs /nəpəy-əs-əs/ water-əs-əs	'lake'	IN
(b)	oxkweesəs /oxkweew-əs-əs/ ¹⁴ woman-əs-əs	'girl'	AN

The following examples show /-əs/ added to kinship terms; other kinship terms containing /-əs/ are given in (6.21) and (6.23).

(6.27)

nxiisəməs	'my younger sibling'	DA
nkwiisəs	'my son'	DA
ntaankwəs	'my male cousin'	DA

Certain roots are followed by /-əs/ when they form a noun stem, but drop /-əs/ when they are used as bound variants of noun stems (Ch. VII).

(6.28)

(a)	mihloosəs	'old man'	AN
	nšiil-ihloos	'my father-in-law'	AN
(b)	hoosəs	'kettle'	AN
	wihkaat-hoos	'kettle with legs'	AN

The morpheme /-əs/ is also used in the formation of agent nouns. Agent nouns are based upon AI stems, with reduplication of initial consonant followed by /-eh/. Formation

¹⁴ Elision of stem-final /-w/ is phonologically regular; the rule has not been formulated here.

of agent nouns is productive. For instance the agent noun in (6.29) is based upon the AI verb stem /pool wee-/ 'escape from'.

(6.29)

pehpooləwees
 /peh-pooləwee-əs/
 redup-escape from-noun final
 'runaway'

/pooləwee-/
 'escape' (AI)

CHAPTER VII

BOUND VARIANTS OF NOUN STEMS

7.0 Introduction

To be discussed here is a class of morphologically complex nouns.¹ The class of nouns which is to be analysed will be outlined, and some of the salient characteristics of these forms will be sketched. I will discuss the traditional analysis of these forms, and will propose two alternative analyses: one in which allomorphs of noun stems are listed in the lexicon; and another which employs rules of allomorphy in order to account for the relevant data. I will also discuss evidence concerning the behaviour of syntactic and diacritic features which are relevant for distinguishing between the two analyses.

7.1 Bound Variants of Noun Stems

There are many nouns containing an element which itself resembles a noun stem. That is, many noun stems in Delaware come in two shapes: one as a free form, the other as a bound form. The bound forms are traditionally treated as suffixes, referred to by Algonquianists as deverbal finals, or in certain cases, deverbal medials (Bloomfield (1946)). Bloomfield uses the term 'deverbal' in the sense 'derived from a stem', not 'derived from a verb'. I will refer to them as bound variants of stems, or bound variants. In Delaware, these bound variants most frequently occur adjoined to roots, and somewhat more rarely after noun and verb stems. Bound variants of noun stems also occur in Noun Incorporation constructions (Ch. IV).

For example, the form xwataaniitəs 'big doll' in (7.1b) below may be analysed as being composed of a root xwat- (/məxat-/) 'big', and an element /-aaniitəs/ 'doll', which is related to the freely occurring noun stem in (7.1a) naaniitəs 'doll'.

¹ Verbs with a similar structure also occur, although they are not discussed in this study.

(7.1)

- (a) naaniitəs 'doll'
- (b) xwat-aaniitəs 'big doll'
big-doll

Semantically, a form such as (7.1b) xwataaniitəs resembles a compound, and may be compared to forms usually considered to be compounds in Algonquian languages, such as xwačə=akook 'big snake', which consists of a prenominal particle xwačə 'big', and a noun stem.² The left-hand and right-hand members of (7.1b) xwat-aaniitəs 'big doll' stand in the same semantic relationship to each other as do for example the left- and right-hand members of xwačə-akook 'big snake'. In each case the left-hand member acts as a modifier of the right-hand nominal element. This parallelism is consistent with treating forms such as (7.1b) as compounds, since whatever mechanism accounts for the interpretation of forms such as the one for 'big snake' could also account directly for the interpretation of forms which contain a bound variant of a noun stem.

Phonologically, forms such as (7.1b) xwataaniitəs are unitary words. Assignment of metrical structure starts at the left edge of the word and proceeds rightward (R23); there is only one main stress (in this case on the penultimate vowel, R24). On the other hand, in a form such as xwačə=akook 'big snake', the two elements are treated as separate domains with regard to metrical structure assignment. As a result both the prenominal particle and the noun are assigned main stress.

In the most commonly occurring pattern, bound variants attach to roots (7.2). In other cases they attach to noun stems (7.3), or to verb stems (7.4). Examples of noun stems of the type under discussion formed with verb stems as initial members are relatively rare; it is possible that this pattern is unproductive. The most common pattern, in terms of

² In her analysis of Cree-Montagnais nouns containing bound variants of noun stems, Drapeau (1979: Ch. IV), concludes that they are a type of compound noun.

examples collected, is that involving roots. In the following list of examples the forms given under (a) are noun stems (internal structure, if any, is ignored); the forms listed under (b) are complex nouns which contain the corresponding bound variants of the nouns listed under (a). In the (b) examples the element to the left of the bound variant is a root. The boundary between root and bound variant (or stem and bound variant) is indicated by '-'. A more complete list of bound variants is given in the Appendix to Chapter VII.

(7.2)

(1a)	naaniitəs	'doll'
(1b)	xwat-aaniitəs	'big doll'
(2a)	mahksən	'shoe'
(2b)	wəsk-ahksən	'new shoe'
(3a)	kooškooš	'pig'
(3b)	mat-ooškooš	'bad pig'
(4a)	aapələš	'apple'
(4b)	kaah-aapələš	'dried apple'
(5a)	apwaan	'bread'
(5b)	kaah-apwaan	'dried bread'
(6a)	eeheešanteekan	'window'
(6b)	šiikal-eeheešanteekan transparent-window	'screen window'
(7a)	ohpən	'potato'
(7b)	wəsk-ihpən	'new potato'
(8a)	oxkweew	'woman'
(8b)	wəsk-oxkweew	'young woman'
(9a)	lənaapeew	'Delaware, Indian'
	/ələnaapeew/	
(9b)	mat-ələnaapeew	'bad Indian'
(10a)	ntaləmoons	'my dog/horse' ³
(10b)	mat-axəm	'bad dog'

³ The stem of ntaləmoons is /-aləmoons/; /nt-/ represents a variant of the possessive prefix /nə-/ '1' (R11, R31).

- | | | |
|-------|--------------|--------------------|
| (11a) | poošiiš | 'cat' ⁴ |
| (11b) | mat-apoošiiš | 'bad cat' |

Bound variants, as in the (b) examples above, usually have a corresponding freely occurring noun stem.⁵ The status of the bound variants which do not have a corresponding free stem is discussed in §7.2.

Although bound variants are most commonly added to roots, there are a number of forms in which bound variants are added to noun stems, as in (7.3).

(7.3)

- | | | |
|------|-----------------------------------|---------------|
| (1a) | taatpəniikan | 'wagon' |
| (1b) | tənteew-aatpəniikan
fire-wagon | 'train' |
| (2a) | waalakw | 'hole, pit' |
| (2b) | kənoop-aalakw | 'button hole' |

A small number of stems were recorded in which bound variants of noun stems are added to AI verb stems. In all cases, the bound variant is immediately preceded by connective /-w-/ (§1.7). The formation of compounds consisting of an AI verb and a bound variant of a noun stem does not appear to be productive.

(7.4)

- | | | |
|-----|---|----------------------------|
| (a) | lənəw
/ələnəw/ | 'man' |
| (b) | laxksəwiilənəw
/laxkəsii-w-iilənəw/
be angry-CW-man | 'war captain' ⁶ |

⁴ Delaware poošiiš 'cat' is a borrowing from Dutch (Goddard (1974a)).

⁵ Example (7.2.10a) is a dependent (obligatorily possessed) noun.

⁶ This form is cited in Goddard (1978a: 225).

- (c) *matahkeewiilənəw* 'fighting man'⁷
 /matahkee-w-iilənəw/
 fight-CW-man

A few vowel-initial noun stems have two bound variants, one in which the initial vowel is retained following a consonant-final root, and another lacking the vowel when preceded by a noun stem ending in /-VVw/. In the latter case the final glide of the preceding noun stem is also elided. Hence (7.5a) *oxkweew* has the bound variant /-oxkweew/ in (7.5b), and the bound variant /-xkweew/ in (7.5d and 7.5f).

(7.5)

- | | | |
|-----|------------------------|-----------------|
| (a) | <i>oxkweew</i> | 'woman' |
| (b) | <i>wəsk-oxkweew</i> | 'young woman' |
| (c) | <i>lənəapeew</i> | 'Indian' |
| (d) | <i>lənəapee-xkweew</i> | 'Indian woman' |
| (e) | <i>meenkwēew</i> | 'Oneida Indian' |
| (f) | <i>meenkwēe-xkweew</i> | 'Oneida woman' |

Bound variants often are not identical to the free form of the stem. The following patterns have been attested: (a) stem-initial long vowels and short vowels other than /ə-/ or /o-/ are retained (exx. 7.2.4-6, 8, 10); (b) an initial consonant is missing in the bound form (exx. 7.1.2-3, 11); (c) an initial /o-/ is missing (ex. 7.2.7a-b); (d) in one form /ə/ is replaced by /ii-/ (7.4b-c); (e) in one morpheme there is an alternation between /-l-/ and /-x-/ (7.2.10a-b). Vowel-initial noun stems, other than those beginning with /ə-/ or /o-/ generally do not show any segmental differences when they appear in bound variants. These segmental alternations which occur between bound and free forms are not part of the productive phonology of the language. They are statable in terms of particular morphemes or morphological environments, rather than being motivated in strictly phonological terms, a point which is reviewed in greater detail below.

⁷ This form is cited in Prince (1901: 24).

Not every noun stem has a corresponding bound form. For example, the following are nouns which do not have bound variants:

(7.6)

koon	'snow'
pampiil	'book, paper'
kaal	'car'
maxkw	'bear' ⁸

If a given noun does have a corresponding bound form, then the bound form may potentially occur in a considerable number of complex nouns. While it is arbitrary whether or not a given noun has a bound variant, if it does, the bound variant may freely attach to the appropriate class of roots.⁹ By way of exemplification, the noun kooškooš 'pig' has the bound variant /-ooškooš/ (as in (7.2.3a-b) above), which occurs in a variety of complex nouns, of which the following is a partial listing:

(7.7)

mat-ooškooš	'bad pig'
wəsk-ooškooš	'young pig'
nsək-ooškooš	'black pig'
čank-ooškooš-əš	'small pig (dim.)'
waap-ooškooš	'white pig'
xwat-ooškooš	'big pig'
xəw-ooškooš	'old pig'

All of the examples in (7.7) are strictly compositional in meaning; that is, the meanings of the complex nouns may be computed from the meanings of their constituents and the structure of the stems.

⁸ Note however "Nunscheach" 'female bear', which may be phonemicized as /noonšaxkw/, consisting of a verb stem /noonš-/ 'suckle' and /-axkw/ 'bear', in Brinton and Anthony (1888: 101). This form is rejected by the speakers I have consulted.

⁹ This statement must be qualified, as certain bound variants do not form new compound stems. Further investigation is required. See the Appendix to Ch. VII, §II for a list of bound variants which are not productive.

The segmental differences between the forms of bound variants and their related free forms are analysed as a function of the properties of particular morphemes rather than as resulting from the operation of general phonological rules. It might be thought, for example, that the initial consonants of some stems are elided when they appear in their bound forms because of the existence of phonological rules which have the effect of simplifying consonant clusters. While it is true that some underlying clusters are broken up by a rule of vowel epenthesis which applies across morpheme boundaries (R14), in many cases epenthesized vowels are deleted in the course of a derivation by the application of a rule of syncope which is sensitive to metrical structure (R31). As a result, complex consonant clusters are commonplace in Delaware, with surface clusters of up to four consonants being quite frequent. There do not appear to be any rules which elide consonants in order to preserve syllable structure.

It might be claimed that, for example, when kooškooš 'pig' appears in bound forms such as (7.7) matooškooš 'bad pig', the initial consonant of the noun stem drops in order to avoid a cluster /-t-k-/ in underlying /mat-kooškooš/. It would be difficult to motivate a rule which would elide /-t/ before /-k/ purely in terms of syllable structure, since such clusters occur elsewhere, both underlyingly and in surface forms: nkwaṭkaateexiin /nəkwəṭkaat-ee-x-iin/ 'he has one leg'.

Similarly, the elision of the initial segment of (7.3.1a) taatpəniikan 'wagon' in (7.3.1b) tənteewaatpəniikan /tənteew-taatpəniikan/ cannot be ascribed to a rule which drops /w/ before /t/ (whether they are adjacent underlyingly or in the course of a derivation), given forms such as apaameewtam 'he goes about crying', and kaahahkwteew 'corn soup'. The underlying forms of these two stems are approximately /papaam-eew-t-am/ and /kaah-ahkw-tee-w/, respectively. In both cases, a cluster /-w-t-/ occurs both underlyingly and in the surface forms.

Consider now examples of vowel-initial stems which appear to undergo modification, as exemplified in (7.2.7a-b). Consider (7.2.7b) wəskihpən 'new potato', which is

related to the root /wəsk-/ 'new, young', and the free noun ohpən 'potato'. The initial vowel /o-/ of the free form is absent in the bound variant; in its place one finds instead /-i-/. If it is assumed that the complex noun is formed simply by the concatenation of a root and a free noun stem, then the underlying representation of the complex noun would be /wəsk-ohpən/. The occurrence of /-i-/ in the bound variant of the noun stem would be inexplicable. This latter vowel cannot be a case of an epenthetic /-ii-/ inserted between the two morphemes and subsequently shortened to [-i-] before /-hC/ (R30), since the rule of epenthesis of /-ii-/ requires a non-syllabic both in the left and right environments.

Alternatively, it might be possible to argue that a form such as wəskihpən 'new potato' represents a compound noun consisting of a combination of a prenominal particle (a prenoun) and a noun. Under this proposal, a now non-occurring wəskii=ohpən (the boundary between the prenoun and noun is indicated by '=') would have been lexicalized as a unitary noun wəskihpən, with elision of /-o-/ because it is preceded by a long vowel, followed by shortening of /-ii-/ before /-hC/ (R30). This analysis would be consistent with the fact that there is an independently motivated rule which deletes short vowels when adjacent to a long vowel (R22). There is some evidence that a similar process of reanalysis has taken place on a sporadic basis in other cases. Consider the verb stem in (7.8)

(7.8)

aniiskiipaxkəniikɛwək
 /naniiskii=paxkəniikee-w-ak/
 dirty (redup)=break by hand-3-pl
 'they are dirty pickers'

Morphologically, this stem is a compound verb consisting of a preverb /naniiskii-/ 'dirty' and an AI verb stem /paxkəniikee-/ 'break things off by hand'. However, the stem has the phonological characteristics of a single word, with only one main stress and no phonological break between the preverb and the verb. These characteristics suggest that the compound stem has been lexicalized as a unitary verb stem. However, this is not a syn-

chronically productive mechanism. In general, sequences of Prenoun plus Noun are not re-analysed as single words with no major phonological break between the prenoun and the noun. Note for instance, such forms as maxkii=aniixan 'red shoelace'. Therefore there is no motivation for claiming that the segmental differences between the bound and free forms of the stem for 'potato' is part of the synchronically productive phonology of the language.

As well, this hypothesis could not account for the appearance of /-(i)hpən/ in environments where an account involving lexicalization is not possible. Consider for example a stem such as pxwašihpəneew 'he peels potatoes', which may be segmented as follows: /pəxaš-(i)-hpən-ee-w/. The element /-i-/ is not part of the transitive verb stem /pəxaš-/ 'to peel'. Nor can it be interpreted as an epenthetic vowel inserted between the first two morphemes in underlying /pəxaš-ohpən-ee-w/, since the environment for epenthesis would not be met, as discussed above. Although it might be possible to claim that in forms such as the one under discussion the /-ihpən/ variant was generalized from forms such as wəskihpən, this is evidently a matter of historical interest, and is not relevant synchronically.

Whatever the ultimate historical origin of the segment /-i-/ in the bound variant of 'potato', it is not predictable by any independently motivated phonological rule. Because it is not possible to predict on any phonological or morphological grounds whether or not a given noun has a corresponding bound form, it will be necessary to specify lexically which noun stems have bound variants and which do not. There are a number of ways of accomplishing this, which will be reviewed shortly.

A few other features of the examples presented in (7.2-7.4) may be noted here. In all stems containing a bound variant of a noun stem, the bound form acts as the morphological head of the word. A derived noun containing a bound variant takes the syntactic and diacritic features of the free form. For example, in ex. (7.2.1), the syntactic category of ex. (7.2.1a) is Noun ([+N, -V]). As well, the feature specification for gender ([± animate]) is invariably the same for any noun stem and its bound variant. Example (7.2.1b) is animate,

as is the free form naaniitəs 'doll'. The significance of the behaviour of the syntactic and diacritic features will be discussed in §§7.3.1 and 7.3.2.

Bound variants of noun stems are most frequently added to roots. As discussed in §1.6, there is a large class of roots which act as if they do not belong to any syntactic category. Because they are bound morphemes, they must be followed by another morpheme, which may be a member of any of the three categories Noun, Verb, or Particle. Stems containing acategorial roots obtain their categorial specifications from some other morpheme; in the typical case in Delaware, categorial specifications come from the morphemes referred to as finals (Chs. II, III, V, VI). Hence the acategorial roots in Delaware are equivalent to English morphemes such as counter- which can be analysed as having no categorial specification (cf. Lieber (1981a: 49-50); also §1.6).

The use of bound variants of noun stems in morphologically complex nouns should be contrasted with their use in certain types of verbs. Nouns stems containing bound variants may take verbalizing suffixes. For example, 'new shoe', as in (7.2.2b) above, forms an intransitive verb by adding a suffix /-aa/ to the noun stem (§3.1.3).

(7.9)

wəskahksəneew
/wəsk-ahkəsən-aa-w/
new-shoe-AI final-3
'he has new shoes'

These denominal verbs are to be distinguished from a superficially similar type of form exemplified in (7.10).¹⁰

(7.10)

ktənahksəneew
/kətən-ahkəsən-aa-w/
take off by hand-shoe-AI final-3
'he takes off his shoes'

¹⁰ This distinction was apparently first noted in Wolfart (1971), in a discussion of similar data from Cree, a related language.

In (7.10) the bound variant /-ahksən/ of the noun stem mahksən 'shoe', follows a transitive verb stem /kətən-/ 'take off/remove something (by hand)'; as with (7.2.2b) and (7.9), the initial segment /m-/ of the noun stem is absent, and an intransitive verb forming suffix /-aa/ is added.¹¹ Although the verb in (7.10) resembles that of (7.9), they in fact have different representations and result from different rules of combination. Denominal verbs of type (7.9) are derived from complex nouns such as (7.2.2b) by addition of a suffix to a noun stem (see §3.1.1 for discussion). In contrast, verbs of type (7.10) do not involve derivation from an intermediate noun. Rather they represent a type of noun incorporation. In Chapter IV these incorporating structures were analysed as involving a lexical process which derives compound verbs. As discussed in Chapter IV, this process appears to only involve certain transitive verbs and certain nouns as well. The significance of the 'incorporating' structures will be discussed shortly.

7.2 Traditional Analysis.

The traditional treatment of these forms is due to Bloomfield, in his studies of various Algonquian languages (cf. e.g. Bloomfield 1946, 1958, 1962). In his analysis, bound variants of the type under discussion, e.g. /-ahksən/ 'shoe', as in (7.2b) above, are treated as deverbal finals. (Bloomfield 1962: Ch. 14, §351). On the other hand, when they occur in the 'incorporating' constructions exemplified in (7.10) above they are considered to be deverbal medials (Bloomfield (1962: Ch. 18)), because they occur medially between roots/stems and finals. Bloomfield treats what are arguably the same elements inconsistently. That is, the bound variants are either assigned to the category 'medial' or to the category 'final', depending upon whether they occur with transitive verb stems (the incorporating forms), or with acategorical roots.¹²

¹¹ There are also cases of this type of formation where the noun is added to a root rather than to a verb stem. See §4.4 for discussion.

¹² Although Bloomfield seems to be assuming that the morphemes in question are basically medials which are also assigned to the category 'final', Wolfart (1971: 512) notes that it would be equally plausible to assume that there are pairs of homophonous medial and final suffixes.

In the traditional analysis the criterion for calling these bound forms medials or finals is entirely distributional: if they take a denominal verb-forming final (as in 7.8), they are finals; if they take a verb-forming final which is not denominal (as in 7.9), they are medials. The relationship between the difference in category assignment and the type of noun or verb construction in which they occur is not considered. Since Bloomfield does not make a distinction between the two types of constructions, he is obliged on distributional grounds to treat bound variants of noun stems as affixes belonging to two different affixal categories.¹³

Secondly, the traditional analysis treats bound variants of noun stems as suffixes. As a result, what are arguably related elements are being treated as noun stems in one case and as suffixes in the second.

It is frequently assumed that affixes and members of compounds have properties which will distinguish the two types of elements, at least in the clear cases (see Aronoff and Sridhar (1988) for discussion). However, there are also intermediate cases, which appear to have some of the properties of affixes and some of the properties of compound members. The stems which are here being referred to as bound variants are representative of these intermediate cases. Aronoff and Sridhar (1988: 180) briefly discuss the status of morphological elements, including what they refer to as "combining forms", that is, where a "member of a lexical category has a special idiosyncratic form that is only found in compounds".

Aronoff and Sridhar note that the status of 'combining forms' may vary, since in some cases they may be analysable as affixes, and in other instances as allomorphs of stems. As noted in Ch. V, noun stems formed with bound variants of noun stems appear to have an intermediate status. Semantically, these forms are similar to compound nouns.

¹³ In the analysis of comparable verbs, in which verb stems occur following roots as bound variants of verb stems, they are considered finals, since they never appear in medial position (Bloomfield (1946: §78)).

Phonologically, they are treated as unitary stems by rules of stress assignment. Structurally, they appear to consist of a root and a bound variant of a noun stem. It can be argued that these bound variants are not suffixes, since they are related to noun stems. Drapeau (1979), in her discussion of similar data in Cree-Montagnais, a related language, proposed that nouns formed with bound variants constitute a special class of compound nouns. According to one of the analyses proposed here, the bound variants are allomorphic variants of noun stems. In the traditional analysis (e.g. Bloomfield (1946)), the bound variants are treated as suffixes. I shall argue that they are a special kind of compounding form.

Because bound variants are in effect 'buried' within a phonological word, it might seem reasonable to treat them as noun stems which have been reanalysed as suffixes, since their relationship with related free stems might have become obscured diachronically. However, many bound variants of nouns productively form new stems when added to roots, and the resulting complex stems are semantically compositional, as was exemplified in (7.7) above. It is not correct to claim that in general the relationship between a given free noun stem and its bound variant has become so attenuated phonologically, semantically, or morphologically, that they should no longer be considered related. While I will discuss below some cases which are taken to show that some elements which historically were bound variants of noun stems should be lexicalized as suffixes, the position taken here is that free noun stems and their bound variants are both assigned to the category N^{-1} (noun stem).

Superficially, the bound noun stems may appear to have some of the properties of suffixes. Although it is argued here that synchronically they should be treated as members of the category Noun (N^{-1}) if they have a corresponding freely occurring noun stem, it appears that under certain circumstances bound variants of noun stems may be sporadically lexicalized as suffixes. While it is not my intention to advance a general account of how members of compound words may become reanalysed as affixes, it is clear that comparable

cases of categorial reanalysis may take place in a wide variety of languages. Selkirk (1982: 104, 105) has argued that it is necessary to recognize sporadic recategorization of suffixes in certain circumstances.¹⁴ Halle and Vergnaud (1987b: 91-92) also argue that there must be a synchronic rule in English which changes the morphological status of certain members of compounds.

There is one significant respect in which bound variants of noun stems resemble suffixes. Bound variants of noun stems are assumed to have the same formal properties as freely occurring noun stems, with the one exception that, like suffixes, they must be attached to some other unit. In this respect, therefore, bound variants already have the property which distinguishes suffixes from freely occurring noun stems. This formal similarity between suffixes and bound variants could serve as the enabling factor which would permit recategorization.

The Delaware data suggest that conditions which would permit lexicalization could involve one or both of two factors. First, if the semantic link between the free and bound variants becomes sufficiently obscure, there may be little or no justification for analysing them as related forms. For example, there is a Delaware noun stem pəleew 'turkey' which has a putative bound variant /-hleew/ 'bird' (§5.2.6). The bound variant is found in a few forms such as those listed in (7.11).

(7.11)

waapsəwihleew /waapəsii-w-i-hleew/ be white-CW-Ep-bird	'goose'
lənəwehleew	'male bird'
oxkwehleew	'female bird'
awehieew	'hawk'

¹⁴ Mithun (1984) discusses relevant data from a variety of languages.

While the free and bound variants may have some semantic characteristics in common, the semantic link between them may be sufficiently opaque as to allow for the possibility that they need not be considered related. The semantic distance between the noun stem and its putative bound variant, as well as the relative unproductivity of /-hleew/ as a noun-forming element may play a role in allowing the bound variant to lose its categorial status as a noun and be lexicalized as an affix. Hence, synchronically /-hleew/ may best be analysed as a noun-forming suffix of limited productivity. A comparable case in English might involve the element -man in woman which has lost its original meaning and its status as the second member of a compound.

Bound variants of nouns may also become lexicalized as final suffixes if the corresponding free noun stem drops out of the language.¹⁵ If the free noun stem does not occur, a bound variant of a noun stem is not distinguishable from any other suffix. There are a number of cases of this type in Delaware. A suffix /-aapeew/ 'man' (§5.2.1) is found in a number of stems such as mat-aapeew 'thief' (/mat-/ 'bad'). A noun stem to which this suffix is related may be reconstructed for Proto-Algonquian as *naapeew- 'man', on the basis of cognates in other Algonquian languages: Ojibwa naapee, Cree naapeew, and so on. The Proto-Algonquian noun stem has no known attestation in modern Delaware. The loss of the free noun stem would allow for the reanalysis of /-aapeew/ as a noun-forming suffix. Without knowledge of Algonquian linguistic history, there is no synchronic justification for treating /-aapeew/ as anything other than a noun forming suffix.

7.3 Analysis

I assume that bound morphemes, that is, roots and affixes of various types, have lexical entries, as do unanalysable stems (§1.5.2). Lexical entries contain information about phonological representation, semantic representation, syntactic category, subcategorization

¹⁵ Compare -dom in English kingdom. Historically this is the second member of a compound which has been lost as a free form. It is usually analysed as a suffix in present day English (Marchand (1969: 262-264)).

requirements, argument structure, and diacritic features. Morphemes are inserted under appropriate nodes in morphological trees, subject to the subcategorization requirements of the morphemes which appear in particular words. Syntactic and diacritic features percolate upwards in tree structures in accordance with percolation conventions of the type summarized in §1.5.1.

7.3.1 The Representation of Allomorphy

Whether a given noun stem has a bound form is not predictable. Whatever analysis is proposed must take this into account. The traditional analysis, according to which bound variants are suffixes, was discussed in §7.2. Two alternative analyses will be discussed here.

(A) In the first, bound variants are listed in the lexicon along with the nouns stems they are related to. Only forms that are so listed may enter into the formation of noun stems which have bound variants as second members.

(B) In the second, stems that have bound variants are lexically marked to undergo one of a series of rules of allomorphy. The rules of allomorphy account for segmental differences between the free and bound variants (an analysis of this type is proposed by Drapeau (1979) in her study of similar data from Cree-Montagnais).

Both of these types of analysis are consistent with generally accepted assumptions about the types of theoretical devices considered necessary for morphological analysis and description. I shall first outline an account along the lines of (A), that is, involving the listing of allomorphs, which will then be compared with a possible analysis of type (B). I will show that although Analysis A is superior in certain respects, it encounters difficulties which do not arise in Analysis B.

In order to account for the distribution and the properties of the bound variants of noun stems, some of the proposals concerning lexical organization made by Lieber (1981a, 1982) will be assumed. Lieber argues that when alternants of the same morpheme or stem are not related in a phonologically transparent way, all the allomorphs should be listed in

the lexicon. She further suggests that cases of lexically listed allomorphy be organized in the lexicon in a manner which reflects the alternation in question (Lieber (1982: 31)). For example, we discussed earlier the fact that for consonant initial stems that have corresponding bound variants, the initial consonant drops in the bound form; similarly, an initial /o-/ corresponds to /-i/ in one bound form; in one morpheme /-l-/ alternates with /-x-/; initial /ə-/ is sometimes retained and sometimes replaced by /ii-/ , while other short vowels and long vowels are retained in bound forms.

These alternations define a series of what Lieber (1982: 31) calls morpholexical rules, with each rule accounting for a lexical class or allomorphy class¹⁶. Some sample morpholexical rules are given in (7.12). Each morpholexical rule will define a lexical class, "since stem variants will belong to a class only if they exhibit the relations specified in the morpholexical rule" (Lieber (1982: 31)). The listing in (7.12) is only partial.

(7.12)

<u>Morpholexical rule</u>				<u>Example</u>		
(a)	CV	~	-øV	/mahksən/	~	/-ahksən/ 'shoe'
(b)	VI	~	-Vx	/aləm-/	~	/-axəmw/ 'dog'
(c)	oC	~	-iC	/ohpən/	~	/-ihpən/ 'potato'

Each of these morpholexical rules represents a particular alternation. Lieber (1982: 31-32) proposes that each of the alternations represented by a morpholexical rule serves as a heading under which all of the lexical entries which display the alternation in question are entered in the lexicon. Each morpholexical rule acts as a kind of generalized redundancy rule, since each one defines an allomorphy class which represents all pairs of elements

¹⁶ See also Spencer (1988) for a discussion of morpholexical rules.

which display a particular alternation. In the permanent lexicon all nouns having a bound variant which has a 'missing' initial consonant would be associated with the morpholexical rule (7.12a), which defines this particular allomorphy class. One of the effects of this approach is to produce a lexicon which has a certain amount of internal structure, since the lexicon is divided into a series of allomorphy classes. This feature of Lieber's proposal is of more direct significance in the analysis of inflection, where morpholexical rules have the effect of deriving traditional declension and conjugation classes (Lieber (1982: 50-51)). Nonetheless it is also relevant for our purposes, since stems having corresponding bound variants may be organized into subclasses, depending upon the alternations they enter into.

Here I will sketch the form which lexical entries might take in a theory which lists allomorphs in the lexicon. Each allomorph will have its own lexical entry, containing the usual information about phonological form, category and diacritic features, subcategorization requirements, and so on. Peculiarities of particular allomorphs are listed in their lexical entries. In Delaware, free nouns and their bound variants are distinct in only two ways: (1) phonological shape, and (2) subcategorization features. The latter distinction is a reflection of the requirement that bound variants must have another morpheme to their left, either a root or a stem. This requirement must form part of the lexical entry for each bound variant.

Lieber (1981a: 38) also suggests that the lexicon should be organized by category, as if all nouns are to be listed in one section, verbs in another, and so on. In this manner, features for syntactic category will not be present in lexical entries. This proposal correctly predicts that allomorphs of a given lexical entry will automatically be assigned to the same syntactic category. Here I give sample lexical entries for the noun stem mahksən and its bound variant /-ahkəsən/.

(7.13)

Morpholexical rule

(a) CV... ~ øV...

(b) Lexical Entries

/mahkəsən/ 'shoe' [-animate] [-M]		/-ahkəsən/ 'shoe' [-animate] [-M] [X-2 <u> </u>]
--	--	--

These two lexical entries would be entered in the 'Noun' section of the lexicon, under the morpholexical rule which defines the allomorphy class of consonant-initial noun stems which lack an initial consonant in their bound variant. The diacritic mark [-M] in the entries in (7.13b) indicates that 'shoe' does not take the suffix /-əm/ when it is inflected for possession (§§1.5.4, 3.1.1). The significance of the diacritic feature will be discussed in §7.3.2. In their function as redundancy rule-like entities, the morpholexical rules which define allomorphy classes relate lexical entries of free and bound variants of noun stems. Since this relation is stated for each allomorphy class as a whole it is not necessary to employ separate morpholexical rules for each instance of a noun stem having a bound variant.

Entering bound variants in the lexicon predicts that both variants should be available to enter into word formation processes. The free stems may undergo numerous processes of suffixation, as discussed in Chs. III-VI. However, the bound forms are also found in one other type of word formation process, Noun Incorporation, which was discussed earlier. Noun incorporation was exemplified in (7.10), repeated here:

(7.14)

ktənahksəneew
 /kətən-ahkəsən-ee-w/
 take off-shoe-AF-3
 'he takes off his shoes'

What is of interest here is that the morpheme /-ahkəsən/ 'shoe' in (7.14) has the same phonological shape as the bound form found in e.g. wəskahksən 'new shoe', namely the initial consonant found in the free stem mahksən 'shoe' is absent. More generally, whenever a noun stem with a bound variant occurs in a Noun Incorporation construction, it is the bound variant which appears in the incorporating verb. This would follow directly from the proposal that bound variants are listed in the lexicon and therefore should be able to participate in other word formation processes. No other theoretical machinery need be invoked.¹⁷

This argument based upon noun incorporation is of significance only if noun incorporation is indeed a lexical process. In Chapter IV I showed that Delaware Noun Incorporation has the character of a lexical process. It is necessary to stipulate which predicates and which noun stems enter in Noun Incorporation. Not all nouns undergo noun incorporation, and not all transitive verb stems have incorporating forms. A small number of transitive stems have corresponding incorporating forms. This limited productivity points to a lexical process. While noun incorporation may be 'syntactic' in some languages, its limited productivity makes it all but certain that Delaware incorporation is lexical. Assuming that Incorporation in Delaware is lexical, then the appearance of bound variants in incorporating forms follows directly from the listing of allomorphs in the lexicon.

I have proposed an account of Delaware noun allomorphy which assumes that both free and bound variants of a given noun stem are entered in the lexicon. As suggested earlier, there is another possible analysis in which noun stems that have bound variants are lexically marked as being subject to rules of allomorphy which account for the segmental alternations which have been observed. Aronoff (1976: 98) describes a rule of allomorphy

¹⁷ Forms which do not have bound variants may undergo incorporation. When they do, the incorporated stem does not undergo any modification. For example, maxkw 'bear', does not have a bound variant which occurs in noun stems, but does form an incorporating stem without undergoing any phonological modification: nihliimaxkweew 'he kills a bear'.

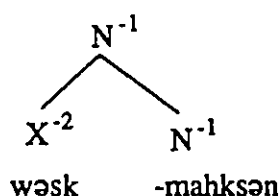
as "A rule which effects a phonological change, but which only applies to certain morphemes in the immediate environment of certain other morphemes".¹⁸ Rules of this type are generally assumed to apply after word formation has taken place, but before 'regular' phonology. It is arbitrary as to whether a given noun has a bound variant. Hence it is possible and necessary to list, for example, all consonant-initial noun stems which drop their initial consonant in forming a bound variant. A rule of allomorphy which accounts for this variation could be formulated as in (7.15). Rule (7.15) is comparable to the rule proposed by Drapeau (1979: 189) for this type of noun in her study of Cree-Montagnais.

(7.15)

$$\left\{ \begin{array}{l} /mahkəsən/ \\ /kooškooʃ/ \end{array} \right\} \longrightarrow \left\{ \begin{array}{l} /-ahkəsən/ \\ /-ooškooʃ/ \end{array} \right\} /X^{-2}_$$

After lexical insertion the concatenation of /wəsk-/ 'new' and /mahkəsən/ 'shoe' could be represented as in (7.16).

(7.16)



A form such as (7.16) would undergo rule (7.15), yielding the surface form wəskahksən 'new shoe'. Rule (7.15) would be adequate for dealing with complex nouns, and can also account for the distribution of bound variants in incorporating forms. Evidently, in a fuller account it would be necessary to formulate rules of allomorphy to account for each of the alternations between free and bound variants.

¹⁸ Rules of allomorphy are comparable to what Bloomfield (1962: §3.5) refers to as morpholexical variation.

In terms of accounting for the relevant data, the two proposals are equivalent in coverage. The two analyses differ in the way that they treat phonologically irregular allomorphs. Analysis (A) acknowledges the existence of the allomorphs by listing them in the lexicon, without attempting to derive the bound variants from the free noun stems. Analysis (A) predicts correctly that once allomorphs are listed in the lexicon, they may participate in other word formation processes, and that is what obtains in Delaware. Analysis (B) derives the bound variants from free noun stems by the operation of rules of allomorphy. Analysis (B) in effect also proposes a solution involving listing, since it is necessary to explicitly state which nouns undergo the rules.

Lieber (1982) argues in favour of a theory which lists allomorphs, discussing several sets of data which she argues, on both descriptive and theoretical grounds, show that analyses which list allomorphs are superior to theories which employ rules of allomorphy. Lieber argues that by listing allomorphs it is possible to dispense with the various types of theoretical devices which have been employed to deal with phonologically unpredictable allomorphy: rules of allomorphy, morphologically governed 'minor' phonological rules, and possibly others such as truncation rules.¹⁹ As well, under a proposal which lists allomorphs, because there are no rules of allomorphy one may in principle rule out the possibility of rules of allomorphy being ordered. Since there do not appear to be any such cases (Lieber (1982: 50)), this is a desirable result. Nonetheless, I now turn to data which appear to be problematic for this proposal.

7.3.2 Syntactic and Diacritic Features

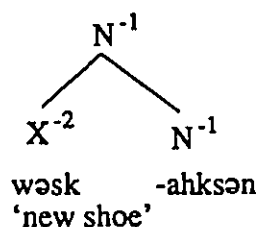
In this section I discuss data relating to the distribution of syntactic and diacritic features in noun stems. I will show that these data raise difficulties for Analysis (A), according to which allomorphs of a given morpheme have separate lexical entries. It will be

¹⁹ Note however that the analysis of the derivation of Transitive Inanimate verb stems proposed in §2.3 presupposes the existence of rules of truncation.

shown that Analysis (B), employing rules of allomorphy, appears to have descriptive and explanatory advantages. As discussed in §7.1, a free noun stem and its bound variant share certain feature specifications. They invariably have identical specifications for syntactic category as well as for certain diacritic features. I will present examples of these feature specifications and then discuss their significance for the two analyses proposed in §7.3.1.

First, free noun stems and their bound variants are assigned to the same grammatical category. Thus mahksən 'shoe' is a member of the grammatical category, Noun; when it occurs in its bound form it is also a noun. I assume that nouns containing bound variants are assigned the structure in (7.17).

(7.17)



Second, free stems and their bound variants also share diacritic features. I will discuss two which are relevant. The first is gender. I will briefly summarize some of the information about diacritic features first presented in §1.3.1. Nouns are either animate or inanimate in gender. Although gender assignment corresponds partly with semantic animacy or inanimacy, gender is specified in lexical entries since it is partly unpredictable, and also because the gender of some words may vary from speaker to speaker. Gender is morphologically distinguished in the marking of plural inflection. Plural number is marked on inanimate nouns with an inflectional ending /-al/, and on animate nouns by /-ak/. A noun stem and its bound variant are always of the same gender. For example mahksən 'shoe' is inanimate and hence takes the plural marker /-al/ (7.18a). Similarly, wəsk-ahksən 'new

shoe', which contains the bound variant of the stem for 'shoe' is also inanimate, and hence occurs with inanimate plural inflection (7.18b).

(7.18)

- | | | |
|-----|----------------|-------------|
| (a) | mahksən | 'shoe' |
| | mahksən-al | 'shoes' |
| (b) | wəsk-ahksən | 'new shoe' |
| | wəsk-ahksən-al | 'new shoes' |

On the other hand, the noun mihtəkw 'tree' is animate in gender, and takes the plural inflection /-ak/ (7.19a). The bound variant of the stem for 'tree' is /-ihtəkw/; it occurs with the root /wəsk-/ 'young, new' in wəsk-ihtəkw 'young tree', which is also animate, as may be determined from the fact that it takes the plural marker /-ak/ (7.19b).

(7.19)

- | | | |
|-----|------------------|---------------|
| (a) | mihtəkw | 'tree' |
| | mihtkw-ak | 'trees' |
| | /mihtəkw-ak/ | |
| (b) | wəsk-ihtəkw | 'young tree' |
| | wəsk-ihtkw-ak | 'young trees' |
| | /wəsk-ihtəkw-ak/ | |

The second diacritic feature which is relevant here involves the way that nouns are marked in possessive constructions. As discussed in Chs. I and III, nouns are inflected for possession by the use of members of a set of mutually exclusive prefixes, as well as by suffixes used for pluralization. In addition, nouns are divided into two classes: those that occur with a possessive suffix /-əm/ immediately after the stem, and those that do not. This classification does not correlate in any way with gender, and is essentially arbitrary, although there is one minor morphological generalization: nouns formed with finals ending in the segment /-n/ usually do not take /-əm/. In the following examples, compare the posses-

sive form (7.20b), which does not take the possessive marker /-əm/, with (7.21b), which does.

(7.20)

- | | | |
|-----|--|------------|
| (a) | paxkšiikan | ‘knife’ |
| (b) | mpaxkšiikan
/nə-paxkəšiikan/
1-knife | ‘my knife’ |

(7.21)

- | | | |
|-----|--|------------------|
| (a) | pampiil | ‘book, paper’ |
| (b) | mpampiiləm
/nə-pampiil-əm/
1-book-poss | ‘my book, paper’ |

Since there is for the most part no basis for predicting whether or not a noun will be marked by /-əm/ in the possessive, this must be indicated in lexical entries for each noun. This specification is indicated by the diacritic [$\pm M$]. As might be expected, nouns that have a bound variant have the same specification for this feature in both the free and bound forms. Thus for example naaniitəs requires the presence of /-əm/ in the possessive, as do nouns containing its bound variant /-aaniitəs/, as the following examples show.

(7.22)

- | | | |
|-----|---|-----------|
| (a) | naaniitəs | ‘doll’ |
| (b) | naaniits-əm
/nə-naaniitəs-əm/
1-doll-poss | ‘my doll’ |

(7.23)

- | | | |
|-----|--|---------------|
| (a) | xwat-aaniitəs | ‘big doll’ |
| (b) | nəmoxwataaniitsəm
/nə-məxat-aaniitəs-əm/
1-big-doll-poss | ‘my big doll’ |

Similarly, if the free form of a stem does not take /-əm/ in the possessive, then its bound variant does not either, as in the examples in (7.24) and (7.25).

(7.24)

- | | | |
|-----|----------------------|-----------|
| (a) | mahksən | 'shoe' |
| (b) | nə-mahksən
1-shoe | 'my shoe' |

(7.25)

- | | | |
|-----|--|---------------|
| (a) | wəsk-ahksən | 'new shoe' |
| (b) | nooskahksən
/nə-wəsk-ahkəsən/ ²⁰
1-new-shoe | 'my new shoe' |

In a complex noun stem containing a bound variant, the bound variant is the head of the word (assuming that it is not followed by any other derivational morphemes). The morphological head of the word transmits its categorial and diacritic features to the mother node (i.e. the first branching node dominating the stem) in accordance with the percolation conventions discussed in §1.5.1.

Let us now turn to how the distribution of categorial and diacritic features would be dealt with in the two analyses proposed in §7.3.1. The distribution of category features is compatible with Analysis (A) outlined in §7.3.1. It was noted that Lieber (1982) proposed that the lexicon be partitioned according to syntactic category membership. Hence lexical entries which are related by a given morpholexical rule will automatically be assigned to the same category. This is the situation which obtains in Delaware, as discussed above. Turning now to the distribution of the two diacritic features discussed above, a similar situation obtains. A free stem and its bound variant always have identical specifications for diacritic

²⁰ The sequence /-əwə-/ contracts to [-oo-] by R18.

features. According to Analysis (A) free stems and bound variants have separate lexical entries. An example of a pair of possible lexical entries was given in (7.13), repeated here.

(7.26)

(a) Morpholexical rule

CV... ~ øV...

(b) Lexical Entries

$\left[\begin{array}{l} /mahkəsən/ \\ \text{'shoe'} \\ [-animate] \\ [-M] \end{array} \right]$		$\left[\begin{array}{l} /-ahkəsən/ \\ \text{'shoe'} \\ [-animate] \\ [-M] \\ [X^2 __] \end{array} \right]$
---	--	---

Each allomorph of the Delaware form for 'shoe' contains specifications for phonological form, meaning, gender, and specification for possession ($[\pm M]$). I assume, as above, that specifications for syntactic category are not part of individual lexical entries. There is evidently a considerable amount of overlap in the information contained in each entry, since each entry contains identical specifications for meaning, and also for the relevant diacritic features. The only distinct specifications are for phonological form and the presence of a subcategorization frame for the bound variant. According to this proposal it would be as plausible for free and bound variants to have distinct specifications for diacritic features, as it would be for them to have the same specifications. Yet free and bound variants invariably have identical specifications for such features. While Analysis (A) can account for these data on a mechanical basis, the fact that free and bound variants invariably agree in feature specifications appears to be entirely coincidental.

In comparison, Analysis (B), employing rules of allomorphy of the type discussed in §7.3.1, would have no difficulty in accounting for these data. Because there would only

be one lexical entry for each noun stem, with allomorphy being accounted for by rule, the distribution of syntactic and diacritic features follows automatically.

The data considered in §7.3.1 indicate that a theory proposing multiple lexical entries correctly predicts the occurrence of allomorphy in word formation processes in Delaware in that bound variants of noun stems occur in two types of morphologically complex words. On the other hand, the data discussed in §7.3.2 raise problems for this type of theory, since the distribution of diacritic features appears arbitrary in this analysis.

It may be necessary to significantly modify the multiple entry theory if it is to be able to account for the data outlined in §7.3.2. The source of difficulty for Analysis (A) lays in the proposal that each allomorph has its own fully specified lexical entry (the reason why it is necessary to require that each lexical entry is fully specified is discussed below). Nothing in this analysis requires that related free and bound variants have the same feature specifications. In an analysis using multiple lexical entries, an attempt could be made to constrain the divergence of related lexical entries. For instance, a principle of lexical relatedness could be invoked which stated that lexical entries which are related by a morphological rule are highly valued to the extent that they have identical feature specifications. Related lexical entries which contain the same specifications for diacritic features such as gender would be evaluated as being more closely related than those which do not.²¹ Nonetheless, a principle such as this will still allow related lexical entries which have diverging specifications for the same features, a situation which does not appear to occur.

Here I will consider an alternative means of organizing the lexical entries of bound variants, while still assuming that they are related by morphological rule. One entry in each series of entries would be fully specified, while the other would be specified only for non-predictable information peculiar to that allomorph. For example, returning to the sample lexical entries in (7.25), the entry for the free stem could be fully specified, while the entry

²¹ A principle of lexical relatedness which would have approximately this effect was proposed by Walsh (1985).

for the bound variant could be specified only for the information peculiar to it, that is, its phonological shape and subcategorization requirements. Non-distinct information for the partly-specified entry could then be filled in by the morpholexical rules relating entries, which would supply the values for the underspecified lexical entry.

Evidently, this proposal entails a considerable extension of the power of morpholexical rules as they are conceived of by Lieber. She treats morpholexical rules as a type of lexical redundancy rule which simply relates lexical entries without deriving the content of one from the other. A proposal of this type would depend upon being able to identify one allomorph as basic. In the case under discussion, it would be plausible to take the free noun stem as the basic allomorph. However, Lieber (1982) has argued that in some cases it is not possible to identify one basic allomorph from which the others may be derived. In instances where a morpheme has multiple allomorphs, each with its own lexical entry, there may be no principled basis for a decision. Lieber (1982) discusses an example with precisely this characteristic. Data which do not allow one to identify a basic allomorph will undermine any attempt to make use of partially specified lexical entries.

While both Analysis (A) and Analysis (b) can account for these data, the kinds of variant specifications of features which Analysis (b) allows for do not occur. Analysis (B) appears to be consistent with the relevant data, correctly predicting the distribution of categorical and diacritic features. This analysis makes use of rules of allomorphy, a theoretically tractable device which appears to be necessary to describe a variety of natural language phenomenon.

7.4 Conclusion

I have examined a class of allomorphs of noun stems which occur as bound elements in a certain type of morphologically complex noun. I have argued that these bound variants of nouns stems are not suffixes, as one might expect, and as the traditional analysis claims. Rather these bound variants should be assigned to the category Noun. Two

possible analyses were considered: (A) one that lists bound variants of noun stems in the lexicon; and (B) one that makes use of rules of allomorphy in order to relate noun stems and their bound variants. It was shown that data concerning the distribution of syntactic and diacritic features shared by noun stems and their corresponding bound variants posed difficulties for the analysis which lists allomorphs in the lexicon. Although possible modifications of the proposal were considered, the analysis making use of rules of allomorphy is able to account for data without any further stipulation.

APPENDIX TO CHAPTER VII

Here I include a more comprehensive list of bound variants which were recorded occurring in noun compounds. Attention is also drawn to the bound variants discussed in Chapter V, which have been reanalysed as suffixes. In the examples in §I below, the bound variant is given on the first line; the free noun stem upon which it is based is given immediately below, followed by examples. Bound variants whose status is unclear, usually because of lack of productivity, are given in §II.

L. Bound Variants of Noun Stems

- | | | |
|-----|---|---|
| (1) | <p><u>/-aakonkweepəy/</u></p> <p style="padding-left: 20px;">/aakonkweepəy/</p> <p style="padding-left: 20px;"><u>wiilawaakonkweepəy</u></p> <p style="padding-left: 20px;">/wiilaw-aakonkweepəy/</p> <p style="padding-left: 20px;">fancy-hat</p> <p style="padding-left: 20px;"><u>maxkaakonkweepəy</u></p> <p style="padding-left: 20px;">/maxk-aakonkweepəy/</p> <p style="padding-left: 20px;">red-hat</p> | <p>‘hat’</p> <p>‘a fancy hat’</p> <p>‘a red hat’</p> |
| (2) | <p><u>/-aalakw/</u></p> <p style="padding-left: 20px;">/waalakw/</p> <p style="padding-left: 20px;"><u>ahkəyaalakw</u></p> <p style="padding-left: 20px;">/ahkəy-aalakw/</p> <p style="padding-left: 20px;">earth-hole</p> <p style="padding-left: 20px;"><u>kənoopaalakw</u></p> <p style="padding-left: 20px;">/kənoop-aalakw/</p> <p style="padding-left: 20px;">button-hole</p> | <p>‘hole’</p> <p>‘root cellar’</p> <p>‘button hole’</p> |
| (3) | <p><u>/-aalaxkwsii/</u></p> <p style="padding-left: 20px;">/maalaxkwsii/</p> <p style="padding-left: 20px;"><u>waapaalaxkwsii</u></p> <p style="padding-left: 20px;">/waap-aalaxkwsii/</p> <p style="padding-left: 20px;">white-bean</p> | <p>‘bean’</p> <p>‘white bean’</p> |

- (4) /-aaman/ 'rope'
/aaman/
čahkwaamanəšal 'short pieces of string'
/čahkw-aaman-əš-al/
small-rope-dim-pl
- (5) /-aanay/ 'road'
/aanay/
šaaxkaanay 'straight road'
/šaax(a)k-aanay/
straight-road
wihkwaanay 'the end of the road'
/wihkw-aanay/
end-road
nsəkəsənaanay 'railroad'
/nəsək-asən-aanay/
black-stone-road
- (6) /-aaniitəs/ 'doll'
/aaniitəs/
xwataaniitəs 'big doll'
/məxat-aaniitəs/
big-doll
- (7) /-aapələš/ 'apple'
/aapələš/
kaahaapələš 'dried apple'
/kaah-aapələš/
dried-apple
- (8) /-aataatəpəniikan/ 'wagon'
/taatəpəniikan/
xwataatəpəniikan 'big wagon'
/məxat-aatəpəniikan/
big-wagon
čiipaatapəniikan 'car'
/čiip-aatəpəniikan/
frightful-wagon

- (9) /-ahkəsən/
 /mahkəsən/
 'shoe'
- lapəlahkəsən
 /lapəl-ahkəsən/
 rubber-shoe
 'rubber overshoe'
- asiiskəwahksən
 /asiiskəw-ahkəsən/
 mud-shoe
 'muddy shoe'
- xayahksənal
 /axay-ahkəsən-al/
 skin-shoe-pl
 'leather shoes'
- kənoopahksənal
 /kənoop-ahkəsən-al/
 button-shoe-pl
 'button shoes'
- xəwahksənal
 /məxəw-ahkəsən-al/
 old-shoe-pl
 'old shoes'
- pihtawahksənal
 /pihtaw-ahkəsən-al/
 double-shoe-pl
 'low rubber shoes'
- (10) /-ahkəy/
 /ahkəy/
 'earth'
- lənahkəy
 /ələn-ahkəy/
 ordinary-earth
 'barren land'
- (11) /-ahoos/
 /ahoosəs/
 'pot, kettle'
- asiiskəwahoos
 /asiiskəw-ahoos/
 mud-kettle
 'clay pot'
- wihkaathoos¹
 /wə-hkaat-ahoos/
 3-leg-kettle
 'kettle with legs'

¹ Pronounced as wəhkaathoos by E. Peters.

- (12) /-ahpapoon/ 'chair'
 /ahpapoon/
xəwəhpapoon 'old chair'
 /məxəw-ahpapoon/
 old-chair
wəskəhpapoon 'new chair'
 /wəsk-ahpapoon/
 young, new-chair
wiiləwəhpapoon 'fancy chair'
 /wiilaw-ahpapoon/
 fancy-chair
- (13) /-akəmahkw/ 'cloud'
 /-akəmahkw/
nsəkakəmahkw 'black cloud'
 /nəsək-akəmahkw/
 black-cloud
- (14) /-amoxool/ 'boat'
 /amoxool/
nsəkamoxool 'black boat'
 /nəsək-amoxool/
 black-boat
- (15) /-apiinay/ 'bed'
 /apiinay/
wšayapiineenk 'at the edge of the bed (loc)'
 /wəšay-apiinay-ənk/
 edge-bed-loc
- (16) /-apoošiiš/ 'cat'²
 /poošiiš/
nsəkapoošiiš 'black cat'
 /nəsək-apoošiiš/
 black-cat

² This form is a borrowing from Dutch (Goddard (1974a)).

<u>laaweewapoošiiš</u> /laaweew-apoošiiš/ wild-cat	'wild cat'
<u>niiskapoošiiš</u> /niisk-apoošiiš/ dirty-cat	'dirty cat'
<u>piilapoošiiš</u> /piil-apoošiiš/ clean-cat	'clean cat'
<u>inatapoošiiš</u> /mat-apoošiiš/ bad-cat	'bad cat'
(17) <u>/-apwaan/</u> /apwaan/	'bread'
<u>kaahapwaan</u> /kaah-apwaan/ dried-bread	'dried bread'
<u>paasapwaan</u> /paas-apwaan/ rise-bread	'baker's bread'
<u>wiisaamapwaan</u> /wiisaam-apwaan/ cornmeal-bread	'cornmeal bread'
<u>šookəlapwaan</u> /šookəl-apwaan/ sugar-bread	'cake'
<u>šookəlapwaanəš</u> /šookəl-apwaan-əš/ sugar-bread-diminutive	'cookie'
<u>xwaskwiimapwaan</u> ³ /məxaskwiim-apwaan/ corn-bread	'corn bread'
<u>salapwaan</u> /sal-apwaan/ fry-bread	'fried bread'

³ Cited as xwaskwiimənapwaan by Goddard (1982).

	<u>maanšəwaween</u> /maanšəw-aween/ odd-person	'odd person'
	<u>kaanšaween</u> /kaanš-aween/ great-person	'important person'
(21)	<u>/-axəmw/</u> /-aləmoons/	'dog, animal'
	<u>xwatxəm</u> /məxat-axəmw/ big-dog	'big dog'
	<u>manəčooxəmwəš⁶</u> /manətoow-axəmw-əš/ spirit-animal-dim	'weasel'
	<u>wəskxəm</u> /wəsk-axəmw/ young-dog	'young dog'
	<u>čankxəmwəš⁷</u> /tank-axəmw-əš/ small-dog-dim	'puppy'
	<u>xəwxəm</u> /məxəw-axəm-w/ old-dog	'old dog'
	<u>oxkweexəm</u> /oxkweew-axəmw/ female-dog	'female animal; female dog'
	<u>lənəweexəm</u> /ələnəwee-axəmw/ male-dog	'male animal, dog'
(22)	<u>/-axkook/</u> /-axkook/	'snake'
	<u>maamaalaxkook</u> /maamaal-axkook/ striped-snake	'garter snake'

⁶ Diminutive consonant harmony shifts /t/ --> /č/ in the stem /manətoow/ (R9).

⁷ Diminutive consonant harmony shifts /t/ --> /č/ in the root /tank-/ (R9).

- (23) /-axkookəs/ 'insect'
 /axkookəs/
wiixəwaxkookəs 'caterpillar'
 /wiixəw-axkookəs/
 hairy-insect
- (24) /-eeheešanteekan/ 'window'
 /eeheešanteekan/
šiikaleeheešanteekan 'screen window'
 /šiikal-eeheešanteekan/
 transparent-window
- (25) /-eehəntaxpoon/ 'table'
 /eehəntaxpoon/
čahkweehəntaxpoon 'short table'
 /čahkw-eehəntaxpoon/
 short-table
ptəkweehəntaxpoon 'round table'
 /ptəkʷ-eehəntaxpoon/
 round-table
- (26) /-eentakwiiwan⁸ 'dress, coat'
 /weentakwiiwan/
xəweentakwiiwan 'old coat'
 /məxəw-eentakwiiwan/
 old-coat'
loowaneentakwiiwan 'winter dress'
 /loowan-eentakwiiwan/
 be winter-dress
- (27) /-eesəkaleenkʷ/ 'Negro'
 /neesəkaleenkʷ/
mateeskaleenkʷ 'bad Negro'
 /mat-eesəkaleenkʷ/
 bad-Negro

⁸ This stem contains a bound variant of a noun stem /akwiiwan/ 'cloth' which has been reanalysed as a noun suffix (§5.2.2.2).

	<u>thəpəy</u> /tah-əpəy/ cold-water	'cold water'
	<u>kiišəwəpəy</u> /kiišəw-əpəy/ warm-water	'warm water'
	<u>šəwanpəy</u> /šəwan-əpəy/ be sour (II)-water	'ocean, sea'
	<u>šaak-əpəy</u> ⁹	'well'
(32)	<u>/-əšapakwiiwan/</u> /wəšapakwiiwan/	'cloth'
	<u>nsəkšapakwiiwan</u> /nəsək-əšapakwiiwan/ black-cloth	'black cloth'
(33)	<u>/-əxaskwiim/</u> /məxaskwiim/	'corn'
	<u>askxaskwiim</u> /ask- xaskwiim/ raw-corn	'green corn'
(34)	<u>/-ihpən/</u> /ohpən/	'potato'
	<u>wəskihpənək</u> /wəsk-ihpən-ək/ new-potato-pl	'new potatoes'
	<u>šookəlihpnək</u> /šookəl-ihpən-ək/ sugar-potato-pl	'sweet potatoes'
(35)	<u>/-iikiipəš/</u> /kiikiipəš/	'chicken'
	<u>laaweewiikiipəš</u> /laaweew-iikiipəš/ wild-chicken	'pheasant'

⁹ The first element of this stem was not recorded in any other form; its meaning is unknown.

- (36) /-iikwahn/ 'house'
 /wiikwahn/
 alaamiikwahnənk 'inside the house
 /alaam-iikwahn-ənk/ (loc)
 inside-house-loc
- (37) /-iikwan/ 'feather'
 /miikwan/
 waapiikwan 'white feather'
 /waap-iikwan/
 white-feather
- (38) /-iixaskw/ 'grass'
 /miixaskw/
 mačiixaskwal 'weeds'
 /mat-iixaskw-al/
 bad-grass-pl
 xəwiixaskwal 'old grass'
 /məxəw-iixaskw-al/
 old-grass-pl
 askiixaskwal 'green grass'
 /ask-iixaskw-al/
 raw-grass-pl
- (39) /-ihloos(əs)/ 'old man'
 /mihloosəs/
 nšiilihloos 'my father-in-law'
 /nə-šiil-ihloos/
 1-marry-old man'
 aaptihloosəs 'man who died of old
 /aapət-ihloosəs/ age'
 die-old man
- (40) /-ihtəkw/ 'tree'
 /mihtəkw/
 xəwihtəkw 'old tree'
 /məxəw-ihtəkw/
 old-tree

- wəskihtək w
/wəsk-ih'ək w/
young-tree 'young tree'
- (41) /-ooškooš/
/kooškooš/
čankooškoošəš
/čank-ooškooš-əš/
small-pig-dim 'small pig'
- nsəkooškooš
/nəsək-ooškooš/
black-pig 'black pig'
- wəskooškooš
/wəsk-ooškooš/
young-pig 'young pig'
- matooškooš
/mat-ooškooš/
bad-pig 'bad pig'
- waapooškooš
/waap-ooškooš/
white-pig 'white pig'
- xwatooškooš
/məxat-ooškooš/
big-pig 'big pig'
- xəwooškooš
/məxəw-ooškooš/
old-pig 'old pig'
- (42) /-ooteenay/
/ooteenay/
kihtooteenay
/kiht-ooteenay/
very-town 'big town, city'
- laawooteenay
/laaw-ooteenay/
middle-town 'middle of town, main street'

- (43a) /-oxkweew/ 'woman'
 /oxkweew/
matahoxkweew 'bad, good for nothing
 /matah-oxkweew/ woman; woman of
 bad-woman poor character'
yowaapoxkweew 'woman's name'
 /yowaap-oxkweew/¹⁰
 ?-woman
- (43b) /-xkweew/
 /-xkweew/
kihkaapeexkweew 'adult unmarried woman'
 /kihkaapee-xkweew/
 mature male-woman
lənəapeexkweew 'Delaware woman'
 /ələnəapee-xkweew/
 Delaware, Indian-woman
wəšiipəweexkweew 'Ojibwa woman'
 /wəšiipəwee-xkweew/
 Ojibwa-woman
meenkwēexkweew 'Oneida woman'
 /meenkwēe-xkweew/
 Oneida-woman
- (44) /-oxkwees/ 'girl'
 /oxkweesəs/
kihtoxkwees 'o'd woman'
 /kiht-oxkwees/
 very-woman
- (II) Other Bound Variants
/-aloons/ 'arrow'
tankaloons 'bullet'
 /tank-aloons/
 small-arrow

¹⁰ The first element in this stem was not recorded in any other form; its meaning is unknown.

- (46) /-ampiisoon/ 'tied'
 /-ampiisoon/
tiikampiisoon¹¹ 'cradleboard'
 /tiik-ampiisoon/
- (47) /-anətoow/ 'God; spirit'
 /manətoow/
matantoow 'devil'
 /mat-anətoow/
 bad-God
- (48) /-aniikwəs/ 'squirrel'
wiisaawaniikwəs 'red squirrel'
 /wiisaaw-aniikwəs/
 yellow-squirrel
- (49) /-iixkanaw/ 'road'
awasiixkanawe 'the other side of the road'
 /awas-iixkanaw-ee/
 other side-road-locative

¹¹ The first member was not recorded in any other form; its meaning is unknown.

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