## THE SYNTAX AND SEMANTICS OF STEM COMPOSITION IN OJICREE

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy Graduate Department of Linguistics University of Toronto

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## Abstract

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This thesis explores the structure of the verb stem in Ojicree, a dialect of Ojibwe. I argue that the surface complexity of the stem structure in this language can be explained if we distinguish between two types of roots: *strong* roots and *weak* roots. Strong roots combine with a verbal head to build a full stem. I call these *simple* stems. *Weak* roots build a more complex structure. Their combination with a verbal head is not enough to build a complete verb stem and some additional material needs to appear to the left of the root to form a full stem. I refer to these stems as *complex* stems and to the requirement posed by the weak roots correspond to an element called 'pre-final' or the lexical portion of the concrete final. *Strong* roots fall into the traditional slot 'initial'.

In the first part of the thesis I argue that weak and strong roots build two fundamentally different structures. Complex stems (build from weak roots) are dynamic syntactic constructs, while simple stems (build from strong roots) need to be stored. I bring both syntactic and phonological evidence for this distinction.

In the second part of the thesis I explore the nature of the left-edge requirement in complex stems, arguing that it is a semantic constraint that has to do with event composition. Weak roots are semantically deficient elements, and the left-edge element fills a gap in their semantics and completes event composition. The syntactic composition of the stem reflects event composition. Finally, I extend the idea of the left-edge requirement to a certain type of noun-incorporation construction.

The proposed analysis advances our understanding of the Ojicree morphosyntax by moving away from the traditional templatic view of the stem, situating it within the current syntactic framework of Minimalism and proposing answers to some long-standing questions from a new perspective. More broadly, it furthers our understanding of how words are formed in the Algonquian languages and in polysynthetic languages in general.

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# Abbreviations

| AGR   | agreement                      |
|-------|--------------------------------|
| AI    | animate intransitive verb      |
| COMP  | complementizer                 |
| CONJ  | conjunct order                 |
| DIM   | diminutive                     |
| EMPH  | emphatic                       |
| FUT   | future                         |
| II    | inanimate intransitive         |
| IMPER | imperative                     |
| INCH  | inchoative                     |
| INTR  | intransitive                   |
| LOC   | locative                       |
| NMZ   | nominalizer                    |
| OBV   | obviative                      |
| NEG   | negation                       |
| PASS  | passive                        |
| PEJOR | pejorative                     |
| PL    | plural                         |
| POSS  | possessive                     |
| Q     | question marker                |
| REDUP | reduplication                  |
| ТА    | transitive animate             |
| TI    | transitive inanimate           |
| TR    | transitive                     |
| VOL   | volitional future              |
| 1     | first person                   |
| 2     | second person                  |
| 3     | third person                   |
| 3'    | obviative person               |
| X>Y   | person X is acting on person Y |

# Chapter 1 Overview

#### 1.1 The problem

This thesis is about the structure of the verbal stem in Ojicree [ojs] (a dialect of Ojibwe, Algonquian) a polysynthetic language. While some verb stems in Ojicree are monomorphemic (1)a, the majority are built with several bound morphemes (1)b - (1)e. In some cases, one of the morphemes is clearly the root, and the other one is some kind of functional head (e.g. (1)b). In many cases, both (or all) morphemes involved carry some lexical meaning, as in (1)c, (1)d and (1)e.

(1) niimi a. niimi dance.INTR 'S/he is dancing.' b. paahpih paahp-ih laugh-TR 'laugh at s.o.' ompiki c. ompi-ki up-grow.INTR 'S/he grew up.' d. pimiwin pimi-win along-carry.TR 'carry s.o. along.' tahkisite e. tahki-sit-e cold-foot-have.INTR 'S/he has cold feet.'

The question that comes up naturally is what is the relation between morphemes comprising the stem, particularly in cases such as (1)c, (1)d and (1)e. Are these root-root compounds? Are they built with verbal heads that have some underspecified lexical meaning? If so, how open or how closed is the class of these verbal heads?

My goal here is to explore in depth the morphosyntactic structure of Ojicree, focusing on the relation between morphemes that build up the stem. Wolfart (1971, p. 511) effectively summarizes the problem I will address:

Since the verb stem of Algonquian languages usually consist of more than one morpheme, two questions have long been of interest to Algonquianists: (1) How should these morphemes be classified, and (2) What are the relations among the resulting classes. The situation was pointedly characterized by Alfred Louis Kroeber in 1916 (96) when he wrote that "the undetermined and … fundamental problem of Arapaho, Fox, and Algonkin in general is whether these languages say 'he enter-looks' or 'he enters lookingly', or 'enteringly he looks'." While the problem has been under consideration at least since the times of DuPonceau, it is not much closer to a satisfactory solution today than it was in Kroeber's day.

Bloomfield (1946, 1958, 1962) has originally described the Algonquian verb stem as consisting of a template of three elements, identified by their position relative to each other: *initial, medial* and *final*. The template has been uniformly adopted by Algonquian scholars. However, in recent years more and more authors have noticed, explicitly or implicitly, that the templatic view does not adequately account for the relation between morphemes that comprise the stem (e.g. Goddard 1988, 1990, Rhodes 1976, O'Meara 1990, Branigan et al. 2005, Piggott and Newell 2006), and that the template should not be perceived as more than a descriptive device. This thesis can be seen as one more step towards moving away from the template.

The issues explored here are not unique to Ojicree or Algonquian, but are at the heart of the research on word formation in polysynthetic languages that has taken place in recent years. For instance, Rice (2000), investigating the relation between morphemes in the Athapaskan verbal complex, argues against the idea of template as a word formation device. Many authors defend the idea that the verbal complex in polysynthetic languages is a syntactic construct (e.g. Rice 2000 for Athapaskan, Johns and Cook 2009 and Compton and Pittman 2010 for Inuktitut). The idea that the verbal complex is formed in syntax has been expressed for Algonquian languages as well (e.g. Branigan and MacKenzie 2001, Brittain 2001, 2003, Hirose 2003, Branigan et al. 2005, Piggott and Newell 2006, McGinnis 1995, Mellow 1989 among others). I adopt this idea and argue further that the verb stem itself is a dynamic entity that is built in the syntax. I aim to advance our understanding of structure of the Algonquian stem and situate it within the current syntactic framework of Minimalism. I pursue this goal by looking at the interaction of morphosyntactic structure with phonology and semantics.

#### 1.2 Proposal

I propose that the surface complexity of the Ojicree stem structure can be captured by positing a distinction between two types of roots, what I call *strong roots* and *weak roots*. Strong roots act as expected: namely, they combine with a verbal head to form a verb stem. Stems built from strong roots will be referred to as *simple stems*. The root  $\sqrt{miskw}$  'red' in (2)a is a strong root that combines with the intransitive verbal head *-si* to build the simple stem *miskosi* 'be red'. The root  $\sqrt{ont}$  'from' in (2)b is a strong root that combines with the transitive verbal head *-n* to form a transitive simple stem *-ontin-* 'get s.o. from somewhere.'

| (2) | a. | miskosi<br>[√ <b>miskw</b> -si <sub>stem</sub> ]<br>red-be.AI<br>'It [anim] is red.'             | simple stem, strong root |
|-----|----|--|--------------------------|
|     | b. | ontin <sup>1</sup><br>[√ <b>ont-</b> n <sub>stem</sub> ]<br>from-TA<br>'get s.o. from somewhere' | simple stem, strong root |

<sup>&</sup>lt;sup>1</sup> The vowel *i* here and in some other cases is an epenthetic vowel (as I argue in  $\S2.3$ ) that I omit form the morpheme breakdown and glosses.

Weak roots build a more complex structure that I refer to as a *complex stem*. In (3)a, a weak root  $\sqrt{pah}$  combines with the verbal head *-too*. The constituent that results from this combination, *-pahtoo* has the meaning 'run' and is specified as intransitive, but is not a free-standing verb stem. An overt element must be present to the left of a weak root to form a complete stem. I refer to this requirement as the left-edge requirement. In (3)a, this requirement is satisfied by the adverbial element *maacii*- 'away'. In (3)b, a weak root  $\sqrt{wi}$  combines with a transitive verbal head *-n* to form the constituent *-win* that means 'carry s.o.' and is specified as transitive. As with *-pahtoo* in (3)a, *-win* is an incomplete element that is subject to the left-edge requirement to form a full stem. This requirement here is satisfied by the adverbial element *pimi*- 'along'.

- (3) a. maaciipahtoo complex stem, weak root [maacii-[√**pah**-too] stem] away-run.AI 'S/he is running away.'
  - b. -pimiwin-[pimi-[√wi-n] stem] away-carry-TA 'carry s.o. along'

I will argue that weak roots are semantically deficient elements, and the left-edge element fills a gap in their semantics. Strong roots, on the other hand, are semantically complete. That is why the structure that is built from a weak root is always more complex than the structure built from a strong root. I argue that this basic distinction between the two stem/root types accounts for the surface complexity of the Ojicree stem structure and eliminates the need to refer to a template as more than a useful descriptive device.

The contribution of this thesis is twofold. Empirically, it will provide an in-depth look into the derivational morphology of Ojicree, situating it within the current syntactic framework of Minimalism. The main implication of the present proposal is that a large portion of word formation in Ojicree takes place in syntax, which corroborates the recent insights in the generative Algonquian literature (Brittain 2001, 2003, Hirose 2003, Piggott and Newell 2006, Mathieu 2008, to appear). Theoretically, it advances our understanding of how words are built up in polysynthetic languages by exploring interface between different levels of grammar: syntax, phonology and semantics.

#### 1.3 Ojicree: preliminaries

#### **1.3.1** The Ojicree language and speakers

Ojicree (also called Severn Ojibwe) is a dialect of Ojibwe, a central Algonquian language spoken across Canada and parts of the northern United States. Ojicree is spoken in Northern Ontario and Manitoba, Canada (Valentine 1994, Rhodes and Todd 1981). Due to the geographic isolation of most Ojicree communities, it is one of the better-preserved Ojibwe dialects, with some 8000 speakers (Lewis 2009) but also one of the least studied. I use the name 'Ojicree' rather than 'Severn Ojibwe' because this is the name used in the community that I worked with. I use the term 'Ojibwe' to refer to the language as a whole. Ojicree stands out from other Ojibwe dialects in two respects. First, it has incorporated many features of Cree, a language closely related to Ojibwe, due to its geographic proximity to Cree communities. Second, according to some sources (Valentine 1994, p.c.) and in my own experience, Ojicree is a the only remaining dialect of Ojibwe that retains some of the robust derivational morphology that is no longer present in most other dialects. Although I have not done a systematic study of the changes in progress, I have worked with speakers of different ages, and have also heard from members of the community that productivity in derivational morphology does not appear to be dying out. In fact, new productive patterns are emerging with new generations. On the one hand, this underlines the value of a study of the derivational morphology of this particular dialect. On the other hand, it makes it difficult to know the extent to which the findings of this thesis are directly applicable to other dialects of Ojibwe.

All the data presented here is from my own fieldwork, conducted from 2005 to 2011 with native speakers in Toronto and in the community of Kingfisher Lake, in Northern Ontario. In part because of its geographic isolation (most Ojicree-speaking communities can be reached only by plane or by winter road), the language in the community is relatively well maintained, with most of its members effectively bilingual in English and Ojicree.

For the data collection I worked with two primary consultants, Ruby Winter and Agnes Saakakeesec, both in their late 20-ies to late 30-ies, and six additional consultants in Toronto and Kingfisher Lake: Ethel Keesekwayahsh, Alex McKay, Frances Mekenak, Mary Ann Winter, Sharon Mosquito and Sheba McKay. As expected, there are individual differences in the speech of these people that do not cancel the overall uniformity. The large bulk of data is from Ruby and Agnes, both from Kingfisher Lake. Their speech differs minimally in what I would speculate is a generational difference, even though they are only ten years apart (Agnes is older). The only piece of evidence I have for this suggestion is that Agnes frequently commented on something that sounded apparently ungrammatical to her, but was grammatical for Ruby: 'This is something only my kids would say!' This also corroborates the observation made earlier in this section that many new productive derivational patterns are emerging with younger generations. Of the other six consultants, who I worked with mainly to confirm some key data points, all but two are from Kingfisher Lake. The two exceptions are Alex McKay who comes from Big Trout Lake, another Ojicree reserve in the Northwestern Ontario, and Ethel Keesekwayahsh, from the community of Red Sucker Lake in Manitoba. Interestingly, Ethel refers to her language as Cree, rather than Ojicree, even though it is undeniably the same dialect that is spoken by people in Kingfisher Lake. Valentine (1994) confirms that some Severn Ojibwe communities refer to their language as Cree rather than Ojibwe or Ojicree.

#### **1.3.2** Previous work on Ojicree and Ojibwe

As noted earlier, Ojicree is one of the least studied dialects of Ojibwe. The three linguistic descriptions that are specific to this dialect are Rogers 1964, Todd 1970, and Shrofel 1981. Rogers 1964 is a survey of the Severn Ojibwe morphology and phonology as spoken in the community of Round Lake in Ontario. The variety of Ojibwe spoken in this community is argued to be on the periphery of the Severn Ojibwe region by Valentine (1994). Todd 1970 is a grammatical description in the framework of the early generative grammar, focusing on the varieties spoken at Big Trout Lake and Deer Lake, two Severn communities in the Northwestern Ontario. Shrofel 1981 is a study of morphophonemics based on the variety Severn Ojibwe spoken at Island Lake, Manitoba. In addition, Valentine's (1994) study of Ojibwe dialect relationship has information about Severn Ojibwe grammar and its relationship to other Ojibwe dialects.

Unlike Ojicree, other Ojibwe dialects are reasonably well studied and documented. Although the dialects differ significantly at times (see Valentine 1994 for specific ways in which Severn Ojibwe stands out from other Ojibwe dialects), many findings of this literature are still applicable to Ojicree as well, and these works are cited extensively in this thesis. Without getting into the particular dialectal differences, I mention some of these works here. Bloomfield 1958 is a classical language description focusing on the Eastern Ojibwe that also includes texts and a glossary. Later language descriptions include Kaye et al. 1971, Kaye and Piggott 1973b, Nichols 1980, and Valentine 2001. Valentine 2001 is the most comprehensive reference grammar of Ojibwe to date, and is based on a several southern Ojibwe dialects. Although the dialect that this thesis is based on is not the same as the one in Valentine 2001, the basic grammatical features are the same, and this resource is cited extensively in this thesis.

In addition, there are several published Ojibwe dictionaries, all focusing on dialects other than Ojicree: Baraga 1992 [1878, 1880], Rhodes 1985, Nichols and Nyholm 1995, Piggott and Grafstein 1983. Piggott and Grafstein 1983 has been particularly useful for this work because it includes a reverse lexicon (grouping the words by their endings). Another resource that has proven extremely helpful in the preparation of this thesis is Valentine 2011, an unpublished electronic lexicon that is based on a wide range of Ojibwe dialects, including Ojicree. It is developed by Rand Valentine and compiles materials from several authors: Frederic Baraga, Richard Rhodes, Ernest McGregor, Glyne Piggott, Ann Grafstein, Kees van Kolmeschate, John Horden, Rand Valentine, John O'Meara, Patricia Ningewance and John D. Nichols. In terms of published lexicons specifically for Ojicree there are only several glossaries in text collections and textbooks, such as Sugarhead and O'Meara 1996 and Beardy 1996.

More formal linguistic works have focus on various aspects of Ojibwe phonology, morphology and syntax. I name only a few central works here. General works on morphosyntax include Rhodes 1976, 1991, 1994, Piggott 1989. Semantic roles of various derivational morphemes are discussed in Denny 1978a, b, 1984, Rhodes 1980, 1981, 1986. Other grammatical features considered include relative preverbs (Rogers 1978, Rhodes 1990, 2005, Slavin 2007), agreement (Bejar 2003, McGinnis 1995), noun incorporation and denominal verbs (Rhodes 2003, Lochbihler and Mathieu 2007, Mathieu and Barrie 2010, Mathieu to appear),

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relative clause and question formation (Johns 1983), and the interaction between phonology and syntax (Piggott and Newell 2006). Discussions of phonetics and phonology include Kaye 1973, Kaye and Piggott 1973a, Piggott 1974, Truitner and Dunnigan 1975, Shrofel 1981.

#### **1.3.3** A note on orthography and glosses

I follow the orthographic tradition commonly used for Ojicree. Short vowels are represented as a, i, o, and for their long counterparts double symbols (*aa, ii, oo*) are used. As in other dialects of Ojibwe, *e* is a long vowel that does not have a short counterpart. Historically, the short *e* that is said to have existed in Proto-Algonquian, has merged with *i* in all dialects of Ojibwe (e.g. Valentine 2001).

Obstruents exhibit a fortis-lenis contrast realized as pre-aspiration. Voiceless symbols are used for both fortis and lenis members of the pair, with h preceding the fortis variants (e.g. hk vs. k). The symbol c stands for a voiceless alveolar affricate.

All data in this thesis are given in a four-line format, as illustrated in the following example. Following convention, in the standard Roman orthography (the first line) hyphens are used only to separate preverbs (stem-external modifiers) from the stem (here *pimitaapaan-*) and the preceding tense markers.

(4) Nika-kakwe-pimitaapanin.
 ni-ka-kakwe-pimi-taapaan- in
 1-FUT-try- along-drive.TR-1>2
 'I will try driving you along.'

*Ojicree data in standard Roman orthography Morpheme breakdown Morpheme-by-morpheme gloss English translation* 

#### 1.4 The Ojicree verbal morphology

In this section I provide the essential background on the Ojicree verbal morphology. The general description here is somewhat simplified, and I focus only on the few specific aspects of the verbal morphology that are necessary to understand the discussion in this thesis. For a more complete description see Todd 1970 for Ojicree, and Valentine 2001 for Ojibwe in general.

#### **1.4.1** The verbal complex

The verbal complex in Ojibwe is described as having two orders, termed independent and conjunct.<sup>2</sup> The independent order is used for declarative sentences; the conjunct order is used in subordinate clauses, questions, as well as certain declarative sentences with certain discourse functions (Valentine 2001). Within each order, the morphemes are generally treated as linearized according to a certain template. The templates for each of the two orders are given in (5) and (6).

- (5) Ojibwe verbal template in the independent order:
   personal prefix tense preverbal modifier(s) stem agreement
- (6) Ojibwe verbal template in the conjunct order:
   (complementizer) tense preverbal modifier(s) stem agreement

As these templates show, the order of morphemes is slightly different in the two orders, and so is their form. However, the portion of the verbal complex that is the focus of this thesis (in bold) is the same. In glosses, I use the label CONJ for verbal complexes in conjunct order, while the independent order is unmarked. Below, I briefly illustrate and discuss each of the orders, mostly to facilitate the understanding of the glosses in the data.

<sup>&</sup>lt;sup>2</sup> There is also a third order, *imperative*, but it is irrelevant to the discussion. See Valentine 2001 for details.

Examples in (7) illustrate verbal complexes in the independent order (the portion relevant to the thesis is again bolded). The leftmost slot is occupied by a person prefix, if any (ni- 1<sup>st</sup> person in (7)a, ki- 2<sup>nd</sup> person in (7)b, and ø 3<sup>rd</sup> person in (7)c). Following the personal prefix is a tense marker (kii- PAST in (7)a, ø for present in (7)b, and wii- for volitional future in (7)c). The tense marker is optionally followed by one or more preverbal modifiers of adverbial nature, called *preverbs*. There are two preverbs in (7)a (kiimooci- 'secretly', kihci- 'a lot'), one preverb in (7)b (kakwe- 'try'), and no preverbs in (7)c. After the preverbs comes the stem, the only obligatory portion of the verbal complex. If the stem is transitive, as in (7)a, it is followed by agreement morphology, in this case the suffix -*aa* indicating first person subject and third person object.<sup>3</sup>

- (7) a. nikii-kiimooci-kihci-kinakicinaa ni-kii-**kiimooci-kihci-kinakicin**-aa 1-PAST-secretly-a.lot- tickle.TR-1>3 'I secretly tickled him/her a lot.'
  - b. kikakwe-kakit
    ki-kakwe-kakit
    2- try-talk.INTR
    'You want to try to talk.'
  - c. Wii-anohkii. wii-**anohkii** VOL-work.INTR 'S/he is going to work.'

In (8) are examples of verbal complexes in conjunct order. The major difference with the independent order is that there is no personal prefix on the left, but all the agreement is on the right edge of the verbal complex. The leftmost slot instead is occupied by one of the three complementizers/wh-words illustrated below.

<sup>&</sup>lt;sup>3</sup> Algonquian agreement is much more complicated than this, but the discussion is beyond the scope of this work. For a detailed description see Rhodes 1976, Valentine 2001.

- (8) a. ...e-kii-kiimooci-kihci-kinakicinaak
   e-kii-kiimooci-kihci-kinakicin-aak
   COMP-PAST-secretly-a.lot-tickle.TR-1>3.CONJ
   '...that I secretly tickled him/her a lot.'
  - b. ...ci-kakwe-kakito-yan ci-kakwe-kakito-c COMP-try-talk.INTR-3.CONJ '...so that s/he tries to talk.'
  - c. ...kaa-wii-anohkiic kaa-wii-**anohkii**-c COMP-VOL-work.INTR-3CONJ '...who wanted to work.'

The verbal complex may comprise more than one phonological word. In particular, the stem constitutes a separate stress domain from the preverbs (Piggott 1974).

Since in this thesis I will be mostly concerned with the structure of the stem, the most relevant part of the verbal complex is its so-called derivational portion, the stem and the preceding adverbial modifiers (preverbs). I now turn my attention to this portion of the verbal complex. The following sections discuss the verbal categories in Ojicree (§1.4.2) the structure of the stem as it is described in the traditional Algonquianist literature (§1.4.3), the traditional distinction between abstract and concrete finals (§1.4.4), and preverbs (§1.4.5).

#### 1.4.2 Four verbal categories

There are four morphological verb categories distinguished by transitivity and the gender of the absolutive argument they select. Intransitive verbs can be Animate Intransitive (AI) and Inanimate Intransitive (II), distinguished by the gender of the subject. There are also two kinds of transitive verbs, distinguished by the gender of their object: Transitive Animate (TA) and Transitive Inanimate (TI). Importantly, these are morphological categories, which means that

mismatches with syntax do arise. For instance, there is a small class of verbs that have intransitive (AI) morphology but select an object.

#### **1.4.3** The structure of the stem from the traditional perspective

The stem is the portion of the verbal complex located between preverbs (preverbal modifiers) on the left and the agreement on the right as shown in the template below:

# (9) Ojibwe verbal template in the independent order: personal prefix – tense – preverbal modifier(s) – [initial-medial-final stem] – agreement

The stem itself is not an atomic entity. Following the original description by Bloomfield (Bloomfield 1946, 1958, 1962), which was adopted by later Algonquianists (e.g. Wolfart 1973, Rhodes 1976, Goddard 1988, 1990, Valentine 2001), the Algonquian stem is usually described as consisting of three elements identified by their position relative to each other: *initial, medial* and *final*. The *initial* is the element at the left edge of the stem; the final is a category-defining element at the right edge of the stem that sometimes also has a lexical component; the medial is a typically nominal element that optionally appears between the initial and the final. This structure is exemplified in the Ojicree stems in (10). The verb in (10)a has all three elements, initial *tahk(i)-* 'cold', the body-part medial *-sit-* 'foot' and the final *-e* that forms Animate Intransitive (AI) verbs. The next two stems are bi-morphemic: the stem in (10)b consists of the initial *misko-* 'red' and the AI final *-si*, and the stem in (10)c consists of the initial *pimi-* 'along' and the final *-pahtoo* that also forms AI verbs and has the lexical meaning 'run'. The verb stem in (10)d is mono-morphemic and, according to Goddard (1990), its single element is the initial.

- (10) a. tahkisite tahki-sit-e cold-foot-AI 'S/he has cold feet.'
  - b. miskosi misko-si red-AI 'It [animate] is red.'
  - c. pimipahtoo pimi-pahtoo along-run.AI 'S/he is running (along).'
  - d. niimi niimi dance.AI 'S/he dances.'

All the stems in (10) exemplify the so-called *primary derivation*. In the traditional Algonquianist terminology, 'primary derivation' is distinguished from 'secondary derivation', which refers to further word formation from already existing stems by adding further finals (category-defining morphemes). For a detailed discussion of both primary and secondary derivation see Goddard 1990. Since the focus of this thesis is primary derivation, I leave secondary derivation out of the present discussion.

Although the traditional Bloomfieldian template discussed above is uniformly used by Algonquianists, it is also recognized by most that the structure of the verb stem is more complex (e.g. Rhodes 1976, Goddard 1988, 1990, O'Meara 1990). Thus, Goddard (1990) argues that each of the three components of the stem can itself be complex, so that what looks like a simple templatic concatenation of elements, might actually involve a complex layered structure.

It is also clear that the set of elements in each category is not homogeneous. Consider, for instance, the category *initial*. Initial is taken to be the root in the primary derivation (e.g. Goddard 1990, Valentine 2001); however, as is evident from the examples above, this slot can be

occupied by a variety of elements. In (10)b the adjectival element *-misko-* indeed provides the core lexical meaning of the verb (since the final in that stem does not have a lexical component); however in (10)c the initial is a type of adverbial modifying the final, while in (10)d it is a verbal element. This heterogeneity is specifically discussed by Rhodes (1976), who makes an explicit distinction between what he calls verbal and non-verbal initials.

The set of finals is not uniform either. In (10)a and (10)b the finals simply specify the category of the verb, while the final element in (10)c also has lexical meaning. The relevant distinction in the Algonquian literature is that between 'abstract' and 'concrete' finals. Since this distinction is central to this thesis, it is the topic of the next section.

#### 1.4.4 Abstract vs. Concrete finals

Within the category 'final' (the element at the right edge of the stem), most authors distinguish between 'abstract' and 'concrete' finals. Abstract finals are purely category-defining elements, while concrete finals introduce some lexical meaning in addition to defining the category of the verb (e.g. Valentine 2001). For instance, the two finals in (11) are abstract finals, with *-si* forming AI verbs and *-ih* forming TA verbs. The two final morphemes in (12) are considered concrete: *-pahtoo* forms AI verbs and means 'run', while *-taapaan* forms transitive verbs and means 'drive'.

- (11) a. miskosi misko-si red-AI
   'It [animate] is red.'
  - b. saakicih saakic-ih out- TA 'take s.o. out'

- (12) a. pimipahtoo pimi-pahtoo along-run.AI 'S/he is running.'
  - b. oncitaapaanonci-taapaanfrom-drive.TA 'drive s.o. from a certain place.'

Although every traditional analysis distinguishes concrete from abstract finals, there is much controversy about the form of finals, the difference between 'abstract' and 'concrete' and even about the use of the terminology.

First of all, it appears that most authors do not treat abstract and concrete finals as two discrete categories but talk about 'more concrete' and 'more abstract' finals (e.g. Wolfart 1973)

Second, there is a lot of disagreement about the phonological form of many finals. This is particularly due to the process of truncation that obligatorily deletes the second vowel in a hiatus within a stem (e.g. Piggott and Newell 2006), and also to the fact that the vowel *i* that is arguably part of many finals is also a very common epenthetic vowel in Ojibwe (e.g. Valentine 2001).

The process of truncation for hiatus resolution applies across the board, and is best exemplified with the plural suffix that has the form -ak, as evidenced in (13)a. When this suffix attaches to a vowel-final stem, as in (13)b, the first vowel of the suffix is truncated.

(13) a. naapewak naapew-ak man-PL 'men'

> b. namek name-ak sturgeon-PL 'sturgeons'

The rule of truncation and the epenthesis facts make it difficult to determine the phonological form of many finals. For instance, the status of the vowel *i* that intervenes between the root and the causative morpheme in (14)a is not clear: it could be said to be epenthetic or morphemic belonging to the final. In (14)b the same causative final attaches to an intransitive (AI) stem, rather than a root, transitivizing it. This example also does not give any hints as to the form of the suffix: because the intransitive stem ends in a vowel, the initial *i* of the suffix would necessarily be truncated according to the rule described above. Thus, there is no way to determine whether this *i* was ever part of the final.<sup>4</sup> The literature lists different forms for this morpheme, e.g. Rhodes (1976) has the form *-h*, while Valentine (2001) lists it as vowel-initial *-ih*.

- (14) a. -sekihsek-ih/h afraid-TA 'frighten s.o.'
  - b. -anohkiihanohkii-ih/h work.AI-TA 'make s.o. work.'

Another example of a disagreement over the phonological form of the final is the final *-ke/-ike* that forms intransitive verbs.

(15) Wanihcike wan-iht-ike/ke lose-TI-AI 'S/he loses things.'

<sup>&</sup>lt;sup>4</sup> In 1.5 in the discussion of a phonological process of palatalization I bring evidence that the form of this particular suffix is *-ih*.

Valentine (2001) lists this final as the consonant-initial *-ke* (*-ge* in the orthography that he uses), while Denny (1984) decomposes it into two morphemes, *-ik-*'things/indefinite object' and *-e* that according to him indicates that the subject is an agent.

Finally, to make the situation with finals even more confusing, the term 'concrete final' is not used consistently in the literature. Notice that while 'abstract finals' are usually monomorphemic, as in (11), concrete finals can be mono-mophemic or bi-morphemic (O'Meara 1990, Valentine 2001). A monomorphemic concrete final (*-ki* 'grow') is shown in (16)a. Examples of bi-morphemic concrete finals are *-maakosi* and *-maakwan* 'smell like' in (16)b and (16)c, which share the lexical portion *-maakw-* (termed 'pre-final' by some) and differ in their respective category-defining components.

- (16) a. ompiki ompi-ki up-grow.AI 'S/he grew up.'
  - b. minomaakosi mino-[maako-si] good-smell.like-AI 'it [animate] smells nice.'
  - c. minomaakwan mino-[maakw-an] good-smell.like-II 'it [inan] smells nice.'

For some authors (Valentine 2001), the term 'concrete final' refers to the whole combination (whether mono- or bi-morphemic), while others (Denny 1984) use it to refer only to the lexical part of a concrete finals (e.g. *-maakw-* in (16)b and (16)c). Still others (O'Meara 1990) use this term specifically to refer to mono-morphemic concrete finals (e.g. the final *-ki* in (16)a), while the bi-morphemic ones (e.g. those in in (16)b and (16)c) consist of a pre-final and an abstract

final. In this thesis, whenever I use the term 'concrete final' I follow Valentine's (2001) usage and refer to the whole combination, whether mono- or bi-morphemic.

Most importantly, as with initials, the range of elements that can occupy the slot 'final' is quite wide. Some finals have verb-like meanings (e.g. (12), (16)) while others appear to be purely category-defining elements (e.g. (11), (14)). And even though the terms 'abstract' and 'concrete' distinguish between them, according to the traditional Algonquianist view, all these still occupy the same slot in the template. This distinction, however, is fundamental to the proposal in this thesis. I will argue that while abstract finals are verbal heads, concrete finals are a combination of a root and a category-defining head.

The importance of the distinction between 'abstract' and 'concrete' finals and the difference in their patterning has been noted before. Thus, O'Meara (1990) notices that abstract and concrete finals interact differently with the initials. In particular, concrete finals can combine with virtually any initial, while abstract finals are limited to combining with only certain ones, and the combinations must be lexically listed. This point will be discussed at length in §2.2.

More recently, working in the Minimalism framework, Piggott (2006) propose to distinguish concrete and abstract finals by treating concrete finals as roots (purely lexical morphemes) and abstract finals as verbal heads (category-defining morphemes). According to this view, concrete finals build root-root compound with initials, and the verbal head attaches to the compound.

Goddard (1988) notices the syntactic salience of finals, arguing that the combinations of initial + final that build the stem are often similar to combinations preverb + stem (the same item can sometimes appear in the preverb position and other times in the initial position). In other words, finals are really like stems except that they are morphologically bound. This is illustrated

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in the following two examples where the element *wani*- occupies the position of a preveb when it attaches to the stem *nikamo* (a), or the position of the initial inside the stem, when it combines with the bound final *-piso* 'drive' in (b).

- (17) a. Wani-nikamo preverb + stem Wani-[nikamo stem] wrong-sing.INTR 'S/he is singing a wrong song.'
  - b. Wanipiso initial + final [Wani-piso stem] wrong-drive.INTR
    'S/he is driving in the wrong direction.'

In the same vein, Rhodes (1976:254) notes that "there are no small number of verbal concepts that are expressed in Ojibwa by morphemes that have only a final form. This means that such morphemes may appear only in complex constructions, either being adverbially modified, or with some sort of complement." This point will be discussed in Chapter Four, and an explanation proposed of why this is so.

While for many authors the terms 'initial', 'medial' and 'final' are simply convenient names for positional classes, the use of this template obscures important differences among elements occupying the same slot, and similarities among elements occupying different slots, thus impeding analysis of the stem structure and the relation between its components. Building on the insights expressed by previous authors, this thesis can be seen as taking a step away from the template, advancing a specific proposal about the structure of the Algonquian stem and situating it within current syntactic theory. In a nutshell, I will argue that the category 'final' lumps together two completely different morphosyntactic entities that are not even comparable. While 'abstract' finals are verbal heads (following Piggott and Newell 2006 and other recent views to be discussed shortly), what is traditionally called 'concrete final' is more like a full stem than an abstract final. Thus, the real question that needs to be answered is what distinguishes a stem from a concrete final (e.g. the stem *nikamo* 'sing' in (17)a vs. the concrete final *-piso* 'drive' in (17)b). Why is the latter less than a full stem; and is it semantically or syntactically incomplete? Chapter 2 of this thesis will provide arguments that this is the fundamental question, and Chapter 4 will propose an answer to it. In the rest of the thesis I depart from the traditional terminology 'initial', 'medial' and 'final', and only use it to make connections with the literature whenever necessary.

#### 1.4.5 Preverbs

Preverbs are derivational morphemes of adverbial nature that appear between the tense marker and the stem (e.g. Valentine 2001) as shown in the template for the independent order, repeated below.

(18) personal prefix - tense - preverb(s) - [stem initial - medial - final] - agreement

For instance, the preverb *wani-* 'wrong' can appear between the past tense marker *kii-* and the stem *nikamo* 'sing':

(19) Ni-kii-wani-nikamo.
 ni-kii-wani-[nikamo stem]
 1-PAST-wrong-sing.AI
 'I sang the wrong song.'

Although this thesis is about the internal structure of the stem, these elements figure prominently in the discussion, as they closely interact with the stem structurally and semantically. Preverbs are part of the same grammatical word as the stem, but form a separate phonological word, conforming to the minimal (bisyllabic) size constraint (Piggott 1974).<sup>5</sup> There can be more than one preverb in a verbal complex. In fact, there is no limit to the logical number of preverbs (cf. Valentine 2001). For instance, the following verbal complex has five preverbs:

(20) Niwii-kakwe-manaa-noonte-kihci-kiimooci-kiiwashkweyaatis ni-wii-kakwe-manaa-noonte-kihci-kiimooci-kiiwashkweyaatis 1-VOL-try-avoid-prematurely-very-secretly-go.crazy.AI 'I will try to avoid prematurely secretly losing my mind.'

The most important property of preverbs for the purposes of this thesis is that they can appear inside the stem, occupying the position of initial – a phenomenon that has been referred to as 'preverb bumping' (Goddard 1988, 1990) or 'preverb lowering' (Branigan et al. 2005). For instance, compare the example in (21) to the one in (19) above. In (19) the preverb *wani-* 'wrong' attaches to an independent stem *nikamo* 'sing', while in (21) it combines with the concrete final *-piso* 'drive' and so is said to occupy the position of initial inside the stem. In general, whenever a preverb combines with morphologically bound material, it automatically falls into the 'initial' slot.

(21) Wanipiso
 [wani-piso stem]
 wrong-drive.AI
 'S/he is driving in the wrong direction.'

The similarity of the constructions in (19) and (21) has been widely discussed in the Algonquian literature (Branigan et al. 2005, Dahlstrom 2000, Goddard 1988) and it has been proposed that they should be treated identically, the difference being only the morphological status of the material the preverb combines with (bound vs. free). In Chapter 4 of this thesis I argue that this is not quite correct and that there is a semantic difference between these. For the moment, however, I would just like to stress this ability of preverbs to 'lower' into the stem without any obvious

<sup>&</sup>lt;sup>5</sup> There is only one preverb that violates the minimal size constraint: the monosyllabic preverb *pi*- 'hither'.

affect on the meaning. Because of this, throughout the thesis, I sometimes use the term 'preverb' to refer to *wani*- both in the pre-stem position (19) and inside the stem as in (21). To differentiate the two positions I use the terms 'stem-external' modifier for when a preverb is outside the stem, as in (19), and 'stem-internal modifier' or 'left-edge modifier' (for reasons to be clarified shortly) for cases when it appears inside the stem, as in (21).

Notice also that the problem of preverb 'lowering', as outlined here is essentially the problem of the prominence of concrete finals and the similarity between concrete finals and stems, as discussed in §1.4.4 and example (17), in particular. This are two sides of the same issue, and the question *What is the difference between concrete finals and stems that make the former less than a full stem*? is the same question as *Why can some preverbs 'lower' into the stem and what does it do for the meaning*? These are two sides of the same issue, and they form the core of this thesis, particularly, of the chapters 2 and 4.

#### **1.4.6** The traditional view and the present proposal

The correspondence between the analysis proposed here and the traditional templatic view of the stem is schematized in (22). (The weak root is written with the subscript 'w' and the strong root has the subscript 's'). In traditional Algonquianist terms, what I call strong roots are said to occupy the position of the initial, while my weak roots are 'pre-finals' or the lexical portion of the concrete final. As clear from this diagram, what the traditional terminology calls 'final' encompasses two completely different entities, in my view. In simple stems, the rightmost element (final) is a verbal head. In complex stems, what is called a 'final' (usually a concrete final) is a complex element formed by a merging a root and a verbal head. The whole concrete final (the constituent formed by merging a weak root and a verbal head) will be argued to be comparable to the stem phonologically and syntactically.

(22) Correspondence between my proposal and the traditional template:

| traditional template: | [initial           | final stem]                       |
|-----------------------|--------------------|-----------------------------------|
| simple stem:          | [ROOT <sub>S</sub> | v stem]                           |
| complex stem          | [ [XP]             | $[\text{ROOT}_W v]_{\text{stem}}$ |

#### 1.5 Theoretical preliminaries

The theoretical framework adopted in this thesis is the Minimalist Program (Chomsky 1995, 2000, and later works) and a version of Distributed Morphology.

In Distributed Morphology (hereafter, DM) (Halle and Marantz 1993, Marantz 1997) words are formed in syntax by merging a pre-categorial root and a functional head. The functional head that forms the category verb is a 'little' v (following Chomsky 1995, Marantz 1997 and subsequent works); the head that forms nouns is n, and the head that forms adjectives and adverbs is a. These heads are realized by derivational morphemes that determine the category of a word, or zero derivational morphemes. According to this view, the English noun 'cat' has the structure in (23):

(23) 
$$nP$$
  
 $n \sqrt{\varphi}$  cat

Let us focus now on the v, the head that forms verbs. I assume that the primary role of this head is a verbalizer. I follow the approach of Algonquian generativists by assuming that abstract finals correspond to the v while the stem is a vP (e.g. Brittain 2003 and Hirose 2003 for Plains Cree, Piggott and Newell 2006, Mathieu 2008 for Ojibwe Ritter and Rosen 2010 for Blackfoot). Some of these authors consider some or all concrete finals to be v's as well. As will

become evident in the course of the thesis, I depart from them by treating concrete finals completely differently. In line with the principles of DM, I assume that all verbs have a v (that is, even when there is no overt final). The v also has the ability to introduce an internal argument in its specifier position. Thus, the unaccusative verb *onso* 'boil' in Ojicree has the structure in (24)<sup>6</sup>:

(24) on-so boil-AI 'boil'



The argument in specifier of v is designated as *pro*, following the Pronominal Argument Hypothesis, according to which in pronominal argument languages the actual arguments of the verb are null *pro*'s, while lexical nominals are syntactic adjuncts (Hale 1983, Baker 1996, Jelinek 1984).

I adopt the position of DM and other constructionalist theories that only functional heads can introduce arguments (Borer 2005, Hale and Keyser 1993, 2002, Pylkkänen 2008 among others). As stated above, the internal argument is introduced by v. The external argument is introduced by a higher head, which I label Voice, following Kratzer 1996. A more detailed discussion on argument structure and the heads that introduce arguments is in Chapter 3, with my assumptions in outlined in §3.1.1

Although it is not central to this thesis, I also make use of the concept 'phase'. Under Phase Theory (Chomsky 2001, 2005, Marantz 2007), syntax creates chunks of structure that are

<sup>&</sup>lt;sup>6</sup> I assume that Ojibwe is head-final based on the surface ordering of morphemes, but nothing hinges on this assumption.

sent to the interfaces (i.e. to Spell-Out) for phonological and semantic processing. These chunks of structure are called phases. Once a phase is completed and interpreted phonologically and semantically, the material inside that phase is no longer accessible to further operations. Which syntactic categories correspond to phases is a matter of debate. According to Chomsky's original proposal (Chomsky 2001), only the transitive *v*P and a CP correspond to phases. However, I assume with later authors that phases exist at the word level (e.g. Compton and Pittman 2010, Marantz 2001, 2007, Marvin 2002, Arad 2003, 2005, Di Sciullo 2005, Piggott and Newell 2006). In Ojicree, the verb stem (*v*P) has been argued to correspond to a phase (Piggott and Newell 2006). The notion of phase will become relevant in Chapter 3, where I further outline my view on what I consider to be a phase in Ojicree.

I assume, following DM, that all word formation takes place in the syntax, in the sense that every word is formed by the syntactic process of merging a root and a category-defining head. However, I depart from the classical DM by assuming different domains of word formation within syntax, a distinction akin to the l-syntax/s-syntax distinction (Travis 2000a, 2010, Hale and Keyser 1993) or the first phase syntax (Marantz 2007, Ramchand 2008).

The divison into l-syntax and s-syntax was first proposed by Hale and Keyser 1993 and developed by Travis 2000a, 2010. Briefly, l-syntax is the initial domain of word formation that is characterized by more semantic and phonological idiosyncrasies, and a relative lack of productivity, compared to s-syntax. S-syntax is the syntax proper, where everything is expected to be as compositional and productive as with any syntactic operations. In other words, l-syntax displays properties of lexical word formation, while s-syntax has all the properties of syntactic operations. Where exactly the boundary between the two components lies varies from one author to another.

Another theory that expresses the same idea is the theory of first phase syntax (Marantz 2007, Ramchand 2008). The proponents of this theory assume that the all the properties of lexical word formation, such as idiosyncrasy of meaning and limited productivity (in other words, properties of l-syntax) are limited to the first phase above the root.

Whatever the exact way to represent it, the distinction between different components of word formation is also crucial to the proposal in this thesis. Unlike the classical DM, I assume that not only individual morphemes but also combinations of morphemes, or words, need to be stored. This will be further elaborated in Chapter 2, but in short, I assume that anything that is formed directly from a root is expected to display properties of lexical word formation (1-syntax/first phase syntax), while any higher word formation will be syntactic (s-syntax). I use the term 'lexical word formation' to refer to word formation from the roots, and 'syntactic word formation' to refer to any higher word formation processes.

#### 1.6 Layout of the thesis

In Chapter Two I introduce the distinction between complex and simple stems and provide syntactic and phonological evidence for this distinction. Without committing to particular structures, I argue that complex stems are built from two syntactic categories, while simple stems are built by simply merging the root and a verbal head. In addition, I focus on some further properties of complex stems that suggest that these stems are syntactic constructs.

Chapter Three provides an overview of some commonly used verbal heads in Ojicree. I argue that the verbal heads are primarily argument introducers, and propose preliminary structures for each verb type, which will further serve as the basis for final structures developed in Chapter Four.

In Chapter Four I tackle the question of the left-edge requirement in complex stems. I argue that this requirement comes from the root: weak roots are semantically deficient elements, and the role of left-edge element is to fill the gap in their semantics. I propose a correlation between syntactic structure and semantics by arguing that the stem is an E(vent)P(hrase) and that the left-edge element contributes to the composition of the event.

Chapter Five extends the analysis to stems that involve Noun Incorporation. Moving away from simple and complex stems, this chapter shows how the idea of the left-edge requirement can be extended to other derivational phenomena in the language.

Chapter Six concludes the thesis, summarizing the main findings and discussing further challenges and directions for future research.
# Chapter 2 Two types of stems<sup>7</sup>

# 2.1 Introduction

I propose that there are two types of stems in Ojicree, *simple stems* and *complex stems*. Simple stems are built by combining a root<sup>8</sup> and a verbal suffix, as in the following example.

(25) maatihse
 [√maat-hse stem]<sup>9</sup>
 start-II/AI
 'It [an event] has started.'

In a complex stem, the combination of a root and a verbal suffix gives an intermediate constituent that is relevant at the phonological and syntactic level, but requires an overt element on its left edge to form a full stem. Thus, in (26) the root *-pah-* combines with the verbal suffix *-too* and forms the constituent *-pahtoo*, which is traditionally called a 'concrete final'. This constituent is less than a full stem requiring some overt material on its left edge. I refer to this requirement as the left-edge requirement. In (26) it is satisfied by the adverbial *maacii-* 'away'.<sup>10</sup>

<sup>&</sup>lt;sup>7</sup> Previous versions of the analysis in this chapter (including some material from chapter four) have been published in Slavin 2009 and Slavin to appear.

<sup>&</sup>lt;sup>8</sup> From now one, I use the term 'root' in a completely different sense than in the traditional Algonquianist literature. The difference will become clear in the course of the discussion as the proposal is developed.

<sup>&</sup>lt;sup>9</sup> The vowel i that surfaces in many simple stems is an epenthetic vowel that will be discussed in section 2.3.

<sup>&</sup>lt;sup>10</sup> The adverbial *maacii*- 'away' in (26) is formed from the root *maat*- 'start', which is also present in the verb in (25). I gloss the two elements differently because, as will become clear later on, *maacii*- is an XP whose meaning is more specific than the meaning of the root that it is formed from. Notice also that when the root *maat*- appears in this XP in (26) (as opposed to joining with the verbal head directly), the XP ends in a long vowel *-ii*. This is an exceptional case, since all other elements have a short vowel *-i* in this context. I have no explanation for this idiosyncratic behavior and simply ignore it for the purpose of the discussion.

 (26) maaciipahtoo [maacii-[√pah-too]<sub>stem</sub>]<sup>11</sup> away-run-AI 'S/he is running away.'

Thus, the main difference between the two stem types is that in simple stems (25) the combination of the root and a verbal suffix is enough to form a complete stem but in complex stems (26) it is not.

The difference between simple and complex stems comes from the characteristics of the root. I will refer to roots that combine with a verbal head to form simple stems as *strong* roots – they do not require any additional material to form a full stem. Roots that form complex stems will be referred to as *weak* roots – their combination with a verbal head is not enough to form a full stem, and some additional material is needed on the left edge. The root *maat*- in (25) is a strong root and it forms a simple stem, while the root *-pah*- in (26) is a weak root that forms a complex stem.

In traditional Algonquianist terms, what I call strong roots are said to occupy the position of the initial, while my weak roots are 'pre-finals' or the lexical portion of the concrete final. Thus, the essence of the present analysis is that in stems that contain concrete finals, the concrete portion of the final (or the whole final, if it is mono-morphemic) is the root. The whole concrete final is a salient constituent that is comparable to the stem phonologically and syntactically, the only difference being that it cannot stand on its own.

There is some support in the traditional literature for this idea. Thus, Goddard (1990) notices the relative salience of pre-finals, suggesting that "it is likely that pre-finals are the historical residue of elements that were originally more independent" (p. 470). More recently, in

<sup>&</sup>lt;sup>11</sup> I analyze the element *-pahtoo* as bimorphemic because, even though *-too* is not a very common suffix, *-pah-* is commonly used in other verbs of motion, for instance, in *naasipiipahitiwak* 'run to the shore in a group' (Valentine, p.c.), *papaamaahkwepahike* 'play hockey', *pimipahiwe* 'carry people along'.

the generative framework, Piggott and Newell (2006) also advance the idea that concrete finals are roots. Their analysis crucially differs from mine in that they argue that a concrete final forms a root-root compound with the initial element, and the category defining head is then added to this compound. Valentine (2001), on the other hand, expresses the intuition that bi-morphemic concrete finals (in my terms, a weak root plus a suffix) should be treated as units because speakers perceive them as such. The present analysis reflects this intuition.

As a first approximation, the structures for the two stem types are given in (27) and (28). For now I follow the view that a stem corresponds to the vP (e.g. Brittain 2001, 2003, Hirose 2003, Piggott and Newell 2006). A simple stem is a vP formed by a merger of a strong root and a category-defining v, as shown in (27).<sup>12</sup>

(27) Simple stem (strong root)

maatihse maat-hse start-II 'It [an event] has started.'



In a complex stem, the combination of a weak root and a v results in an intermediate domain that needs additional material to its left to form a full stem. Without committing to a particular structural relation at the moment, I assume that the left-edge element is some kind of obligatory specifier that must be present to bring the stem to a vP level, as in the following

<sup>&</sup>lt;sup>12</sup> In structures I differentiate weak and strong roots with the subscript "W" (ROOT<sub>w</sub>) and "S" (ROOT<sub>s</sub>) accordingly.

structure. This structure will be updated in Chapter 4 where I explore the relationship between the weak root and the left-edge element.

#### (28) *Complex stem (weak root)*

maaciipahtoo maacii-pah-too away-run-AI 'S/he is running away.'



I claim that the constituent occupying the obligatory modifier position in complex stems (and thus satisfying the left-edge requirement) is an aP (that is, an adverbial-type modifier) with the vowel *i* being a category-defining *a*, following Piggott and Newell (2006), who advance the same proposal for preverbs.<sup>13</sup> The roots forming these aP's are strong roots – that is, they are drawn from the same pool as the roots forming simple stems.

For clarity, the correspondence between the present analysis and the traditional templatic view of the verb stem is schematically represented in (29). The present proposal suggests that the items that occupy the traditional slot 'final' fall into two different categories: some of them are verbal heads while others are a root plus a verbal head. The material to the left of the 'final', consequently, also has different status. The material to the left of the 'final' in a simple stem is

<sup>&</sup>lt;sup>13</sup> As the reader will notice further on, the *a* head does not always surface as *i* but can be realized as a different vowel. For instance, it is realized as *o* in (43)f and (45)c, and as *e* (44)c. Although it is worthy of discussion what determines the surface realization of this vowel, the topic is outside the scope of this work. For simplicity, and without making any claims as to the eventual analysis, I represent this morpheme is *-i*.

the root. In a complex stem, the material on the left edge is the obligatory aP that I have put in the modifier position in the structures.

(29) Correspondence between the present analysis and the traditional template:

| traditional template: | [initial                       | final   | stem |
|-----------------------|--------------------------------|---|------|
| simple stem:          | [ROOT <sub>S</sub>             | v   | stem |
| complex stem          | [[ROOT <sub>S</sub> $a_{aP}$ ] | $\begin{bmatrix} \text{ROOT}_W & V \end{bmatrix}$ | stem |

As noticed above, the structures (27) and (28) are only the first approximation. These structures will be updated in Chapter Four where I explore the relationship between the left-edge element and the weak root in complex stems. The main goal of the present chapter is simply to bring arguments for the distinction between the two stem types. In particular, I will bring evidence that simple stems are formed directly from a root, while complex stems are built from two syntactic constituents: the intermediate constituent formed by a merger of the root and v (labeled v' in the structures) and the aP on the left edge.

In §2.2 I argue that complex stems conform with the basic diagnostics of syntactic word formation: they are extremely productive and semantically transparent, suggesting that they are built from syntactic phrases. At the same time, simple stems exhibit much more idiosyncrasy and productivity gaps, suggesting that these stems need to be stored in the lexicon. In §2.3 I further support these findings with evidence from phonology. In particular, I argue that the well-known Ojibwe process of *t*-palatalization (see (28)) can be explained if the two stem types are distinguished. Having argued for this distinction, in §2.4 I focus on some properties of complex stems that further confirm their syntactic nature.

### 2.2 Simple stems vs. complex stems: structural arguments

In this section I bring evidence for the distinction between simple and complex stems outlined above. In particular, I argue that complex stems are syntactic constructs that are built from two syntactic categories<sup>14</sup>, while simple stems are built directly from a root and need to be stored. First, in §2.2.1 I outline my assumptions for what constitutes syntactic word formation. Further, using the established criteria, I compare the relative productivity and compositionality of complex and simple stems arguing that based on these criteria, complex but not simple stems display properties of syntactic word formation.

# 2.2.1 Domains of word formation

The classical DM assumes that all word formation takes place in syntax, eliminating the need for a lexicon altogether (Halle and Marantz 1993, Marantz 1997). In this view, the only thing that the speakers need to memorize (non-linguistic knowledge aside) is a list of Vocabulary iterms, i.e. phonological realizations of syntactic terminal nodes, or in other words, morphemes. Unlike this classical view, I assume that not only individual morphemes but also combinations of morphemes, or words, can be stored. This view is in line with theories that assume some kind of boundary between different domains of word formation. Thus, Travis 2000a, 2010, building on Halle and Marantz 1993, proposes a distinction between s-syntax (syntax proper) and l-syntax (syntax that has some properties of the lexicon). The latter component is characterized by semantic and phonological idiosyncrasies, and lack of productivity. In the same vein, recent constructionalist theories advance the idea of the so-called first phase syntax (Marantz 2007,

<sup>&</sup>lt;sup>14</sup> Since I assume (following DM) that roots are a-categorial entities, I will use the term 'category' to refer to a constituent that has a functional head and therefore has been specified for a syntactic category.

Ramchand 2008), whereby the first phase above the root is argued to exhibit some properties of the lexical word formation (Travis's l-syntax), such as idiosyncrasy of meaning and limited productivity.

Following these authors, I assume that there are different domains of word formation. Namely, I assume that root-based word formation (l-syntax) is expected to exhibit more idiosyncrasy and limited productivity than further word formation processes. By contrast, processes that combine two syntactic phrases/categories (recall that I assume, following DM, that any time a root merges with a functional head it becomes a syntactic category) are expected to behave like any other syntactic processes: they should be semantically transparent (compositional) and productive. In this higher component (s-syntax) idiosyncrasies are also allowed to occur but only to the extent that they can occur anywhere in syntax (e.g. idioms). Throughout this section, although I do not make specific reference to the l-syntax/s-syntax distinction or to the first phase syntax, I use the term 'syntactic word formation' to refer to the productive word formation in the s-syntax, and 'lexical word formation' to refer to the initial word formation by combining a root with a functional head (l-syntax).

The discussion above gives us two main criteria for distinguishing syntactic from lexical word formation which I use to distinguish simple from complex stems: (i) predictability of meaning, and (ii) productivity. In §2.2.2 I compare the contribution of the leftmost constituent to the meaning of the stem in the two types of stems, suggesting that in simple stems it is the root, while in complex stems it is an XP formed from a root and a category-determining functional head. In §2.2.3, I argue that the relative productivity of simple and complex stems also suggests that the elements combined in complex stems are categories and not roots.

### 2.2.2 Idiosyncrasy vs. predictability

Recall that I have proposed that simple stems are built by merging a root with a verbal head, while complex stems are built by combining two syntactic categories. Given the assumption that root-based word formation should exhibit more idiosyncrasy of meaning than category-based word formation (see \$2.2.1 and the discussion in the following paragraph), we expect that the meanings of the two different stem types will be computed differently from the meaning of their components. In this section, I compare, in particular, the contribution of the elements on the left edge to the overall meaning of the stem, arguing that in a simple stem the element on the left-edge is the root, while in a complex stem it is a category formed from a root, the *a*P satisfying the left-edge requirement.

Following work by Arad (2003, 2005) and Marvin (2002), I assume that roots are generally highly underspecified semantically, and the meaning of the immediate category formed from a particular root can be anywhere within the range of meanings of this root. By contrast, further derivation cannot access the whole range of meanings of this root but only the meaning of the XP formed from it.

As an example, consider the difference between root-based and word-based word formation in Hebrew, as discussed in Arad 2003. In Hebrew, words are formed by combining a tri-consonantal root with one of several patterns (*binyanim*), which are analyzed as category-defining morphemes (n, v, a). In (30) the root  $\sqrt{sgr}$  combines with six different patterns to form nouns or verbs. The meanings of these words range from 'close' to 'extradite' to 'parentheses', and so on. While the range of meanings always stays within the range of meaning of the root  $\sqrt{sgr}$  (something to do with closing), the meaning of each particular combination cannot be predicted.

(30) √sgr

| a. | CaCaC (v)    | sagar    | v, 'close'          |
|----|--------------|----------|---------------------|
| b. | hiCCiC (v)   | hisgir   | v, 'extradite'      |
| c. | hitCaCeC (v) | histager | v, 'cocoon oneself' |
| d. | CeCeC (v)    | seger    | n, 'closure'        |
| e. | CoCCayim (n) | sograyim | n, 'parentheses'    |
| f. | miCCeCet (n) | misgeret | n, 'frame'          |

By contrast, further derivation is more limited semantically. The verb *misger* 'to frame' in (31)b is formed from the noun *misgeret* 'frame' in (31)a, which in turn is formed from the root  $\sqrt{sgr}$ . Because the verb is formed from the noun and not directly from the root, the meaning of this verb is tied to the meaning of the noun, and it cannot access the whole range of meanings of the root. Thus, it predictably means 'to frame'.

(31) √sgr

| a. | miCCeCet (n) | misgeret | 'a frame'  |
|----|--------------|----------|------------|
| b. | CiCCeC       | misger   | 'to frame' |

I predict that the same pattern will be observed with complex and simple stems in Ojicree. Simple stems are formed by directly combining a root and a verbal head, so the meaning of the stem will range anywhere within the range of meanings of this root. Complex stems, by contrast, are formed from two syntactic categories; so we expect the meaning of the stem to be bound to - and therefore be predictable from the meanings of these categories. That is, the components of the stem will contribute consistently and compositionally to the meaning of the whole stem.

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This is schematically represented in (32). I will make use of the fact that the roots that appear in simple stems and the roots that appear in the left-edge modifiers in complex stems can be drawn from the same pool – strong roots. The crucial difference is that in a simple stem the strong root contributes directly to the vP, while in a complex stem it contributes directly to the aP modifier, which in turn contributes to the vP. Thus, the prediction is that the meaning of the vP in (32)a will range anywhere within the meaning of the ROOT<sub>s</sub>. By contrast, the vP in (32)b will not be able to access the whole range of meanings of ROOT<sub>s</sub> but only the meaning of the aP that is formed from it. This aP is expected to contribute consistently and compositionally to the meaning of the stem.

(32) a. Simple stem



In what follows I test this prediction with four different strong roots.

In (33) is a set of simple stems all built with the root *-wan-*. In (33)a and (33)b *-wan-* combines with intransitive verbal heads *-ii* and *-hse*, giving stems meaning 'be wrong/make a mistake' and 'be lost'. While both of these are plausible meanings for the stem built with this root (both have to do with the general meaning 'wrong'), it is impossible to predict which meaning will result from which combination. The same is true when *-wan-* combines with transitive suffixes. When it appears with *-ih* it yields 'lose s.o.' (33)c, and with *-hke* it yields

'forget' (33)d. Again, it cannot be predicted what exact meaning will arise from a combination of *-wan-* with a particular suffix.

(33) *-Wan-* as a root:

- a. wanii wan-ii wan-AI 'be wrong/make a mistake'
- b. wanihse wan-hse wan-II 'be/get lost'
- c. wanih wan-ih wan-TA 'lose s.o.'
- d. wanihke wan-hke wan-AI 'forget'

The root *-wan-* can also join with the *a*-head *-i* to form an aP modifier with the meaning 'wrong, in error'. When this aP satisfies the left-edge requirement in complex stems, its contribution to the meaning of the stem is always consistent and predictable, as shown in the following examples:

(34) *Wani-* as a stem-internal modifier:

- a. wanipiso wani-piso wrong-drive.AI 'drive in the wrong direction'
- b. wanikwaahso wani-kwaahso wrong-sew.AI 'make a mistake while sewing'

- c. wanitaapaanwani-taapaanwrong-drive.TA 'drive s.o. in the wrong direction.'
- wanishimo wani-shimo wrong-dance.AI 'make a mistake/go in the wrong direction while dancing'

In all these cases, *wani-* can be consistently translated as 'wrong'.

The same pattern is evident with the root *-poon-*. In (35)a *-poon-* combines with the transitive suffix *-ih*, giving a stem meaning 'leave s.o. alone'. In (35)b, where it joins with the intransitive suffix *-ii*, the result stem means 'alight'. As with *-wan-*, the meanings of these stems are within the semantic range of the root, but cannot be predicted from their components.

(35) *-poon-* as a root:

- a. poonih poon-ih poon-TA 'leave s.o. alone'
- b. poonii poon-ii poon-AI 'alight (from a flight)'

The root *-poon-* can also combine with the morpheme -i to form an aP that means 'stop'. When this aP appears as the left-edge modifier in a complex stem, its meaning is always 'stop', consistently and predictably.

(36) *Pooni-* as a stem-internal modifier:

a. poonishimo pooni-shimo stop-dance.AI 's/he stopped dancing.'

- b. pooniki pooni-ki stop-grow.AI 'It [animate] stopped growing.'
- c. poonikitaaso pooni-kitaaso stop-be.angry.AI 'S/he stopped being angry.'

A third root that patterns in this way is *-caak*-. In (37) this root combines with various *v*-heads to form simple stems, and the resulting meanings are again not completely predictable. The combination with the intransitive (AI) *-ii* yields 'be tired', and the combination with the intransitive *-hse* yields 'be used up', 'be all gone.'

(37) *-Caak-* as a root:

- a. caakii caak-ii caak- AI 'S/he is tired.'
- b. caakihse caak-i-hse caak-II
  'be used up, be all gone'

On the other hand, when *-caak-* appears as the root of a stem-internal *a*P modifier headed by *-i*, the modifier *caaki-* as a whole always makes a consistent semantic contribution, acting as a sort of a universal quantifier quantifying over the internal argument, translated here as 'all'.

- (38) a. Nicaakikwaataanan mahkisinan Ni-caaki-kwaat-aan-an mahkisin-an 1- all- sew- TI-PL shoe- PL
  'I finished sewing all the moccasins.'
  - b. Aasha nicaakitaapaanaak awaashihshak ishkoonoowikamikonk Aasha ni-caaki-taapaan- aak awaashihsh-ak ishkoonoowikamik-onk already 1-all- drive.TA-1>3PL child- PL school- LOC 'I already drove all the kids to school.'

In these examples, *caaki*- uniformly means 'all' and quantifies over the internal argument. This predictability of meaning again suggests that it is the *aP caaki*- that contributes to the meaning of the stem, not the semantically underspecified root *-caak*-.

Finally, consider the root  $-ont^{-15}$ . In the stems in (39) it combines with various *v* heads to form simple stems. As these examples illustrate, the meaning of the whole stem is not directly predictable from the meaning of the root *-ont-*. The meanings of the stems that are formed from it range from 'get s.t. from' to 'warn s.o.'

- (39) a. nitontinaa nit-ont-n- aa<sup>16</sup> 1-ont- TA.by.hand-1>3 'I got it [animate] from a certain place.'
  - b. Thunder Bay oncii Thunder Bay onc-ii thunder bay ont-AI 'She is from Thunder Bay.'
  - c. nitoncihaa nit-onc-ih- aa 1-ont-TA-1>3 'I am warning him/her.'

On the other hand, when this root appears in the left-edge modifier *onci*- in complex stems, it always has the meaning 'from a certain place', and contributes predictably to the meaning of the vP as a whole:

<sup>&</sup>lt;sup>15</sup> The palatalization that shows up on the root *-ont-* in (39)b, (39)c, and (40) is discussed in section 2.3.

<sup>&</sup>lt;sup>16</sup> The transitive suffix -n is an instrumental final that is traditionally glossed 'by hand'. However, I follow Rhodes 1980 who argues that this suffix has a more abstract meaning that does not necessarily involve the use of the hand but is more appropriately glossed as 'exerting fine control'. Thus, the meaning of -n is abstract enough for it to be considered a light verb. An alternative view is that there is more than one final that has the form -n (Valentine, p.c.)

- (40) a. Weti oncipiso Weti onci-piso<sup>17</sup> there from-drive.AI 'S/he is driving from that direction.'
  - b. Weti nikii-oncitaapaanaa Weti ni-kii- onci-taapaan- aa there 1-PAST-from-drive.TA-1>3 'I drove him/her from over there.'

The idiosyncrasy in (39) and the predictability in (40) suggest that in (39) it is the root *-ont-* that contributes to the meaning of the stem, while in (40), it is the *aP onci-* that composes with the verb.

I have shown that the contribution of the left-edge constituents is very different in the two types of stems. In simple stems, the contribution of the left-edge constituent to the overall meaning of the stem can be idiosyncratic, while in complex stems the left-edge constituent contributes consistently and largely compositionally to the meaning of the whole stem. Given the assumption that predictability of meaning is a property of syntactic (category-based) word formation, while idiosyncrasy is a property of lexical (root-based) word formation, we can conclude that in simple stems, the left-edge constituent is the root, while in complex stems it is an XP formed from a root. Thus, the distinction between the two types of stems is indeed valid, and assigning the term 'initial' to both elements as done in the traditional literature, obscures these important distinctions.

More needs to be said about idiosyncrasy and predictability as evidence for syntactic vs. lexical word formation. Although under the theoretical framework assumed here idiosyncrasy is a property of the lexicon (root-based word formation) while predictability is considered a property of syntax (e.g. Travis 2000a, Arad 2003, 2005, Marvin 2002), it is also true that to some

<sup>&</sup>lt;sup>17</sup> For many concrete finals, it is not clear whether they are mono- or bi-morphemic. The final *-piso* 'drive' is one such final. When there is no clear evidence for the morpheme boundary, I assume that the whole final is the root, and the v in such cases is phonologically null.

extent semantic idiosyncrasy can occur anywhere in the process of derivation. And the constituent that I call 'complex stem' here is no exception to this. For instance, the elements *-aatisi* 'act, live' and *-enim* 'think about someone' are formed from a weak root and a functional head, which then combines with various left-edge elements to form complex stems. Unusually for complex stems, the meanings of these combinations are not predictable from the meanings of their subparts, as illustrated below. Thus, in (41)a the combination with *pim-* 'along' and *-aatisi* yields 'live, exist', while the verb formed from *papaam-* 'around, distributed location' plus *-aatisi* means 'travel around' (41)b. In (42) the combination of *-enim* 'think about' and *pooni-* 'stop' does not yield 'stop thinking about someone' as expected, but 'forgive s.o.'<sup>18</sup>:

- (41) a. pimaatisi pim-aat-si along-live/act-AI 'survive, live, exist.'
  - b. papaamaatisi papaam-aat-si around-live/act-AI 'travel around'
- (42) poonenim poon-enim stop-think.about.TA 'forgive s.o.'

To the best of my knowledge, there are very few examples of idiosyncrasy in complex stem formation, while as has been demonstrated, idiosyncrasy is the norm in simple stems. It is important to remember that semantic compositionality is not perfectly correlated with syntactic transparency; every language has phrasal idioms, which have accessible syntactic structure.

<sup>&</sup>lt;sup>18</sup> I thank Rand Valentine for reminding me of these exceptions.

# 2.2.3 Productivity

There is a sharp asymmetry in the productivity of simple and complex stems. This is not a new observation: it has been noted for Delaware (O'Meara 1990) and Montagnais Cree (Drapeau 1980), related Algonquian languages, that concrete finals (or, in O'Meara's terms, combinations of pre-final and final) combine more freely with various initials than abstract finals do:

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 lexically list most of these combinations, [...]. 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. (O'Meara 1990, p.124-125)

In Ojicree, there is also a sharp asymmetry in the productivity of these two constructions, which I attribute to the different internal structure of the stems: in a simple stem the elements combined are a root and a verbal head, while a complex stem consists of two categories.

Each of the examples in (43)-(45) illustrates a group of complex stems based on the combination of a particular concrete final (v') with various stem-internal modifiers (in traditional Algonquianist terms, the combinations of concrete finals with various initials). While for each of these concrete finals the available dictionaries (e.g. Nichols and Nyholm 1995, Rhodes 1985) list only a handful of possible combinations, it is clear from these examples that the structure is productive and the number of possible combinations potentially very large.

In (43)a to (43)c the element *-piso* 'drive' combines with various manner adverbials, and in (d) to (g) it combines with directional elements. As with other stems discussed later, the list is far from exhaustive.

(43) *-piso* 'drive, AI'

| a. | Minopiso<br>mino-piso<br>well-drive.AI<br>'S/he drives well.'                        | manner             |
|----|--|--------------------|
| b. | Macipiso<br>maci-piso<br>badly-drive.AI<br>'S/he drives badly.'                      | manner             |
| C. | Nihtaawipiso<br>nihtaawi-piso<br>good.at-drive.AI<br>'S/he knows how to drive.'      | manner             |
| d. | Piicipiso<br>piici-piso<br>here-drive.AI<br>'S/he is driving this way.'              | directional        |
| e. | Maaciipiso<br>maacii-piso<br>away-drive.AI<br>'S/he is driving off.'                 | directional        |
| f. | Takopiso<br>tako-piso<br>arrive-drive.AI<br>'S/he arrived [by driving].'             | manner/direction   |
| g. | Wanipiso<br>wani-piso<br>wrong-drive.AI<br>'S/he is driving in the wrong direction.' | manner/directional |

The AI concrete final *-hpokosi* 'taste like' and its corresponding II variant *-hpikwan* combine freely with adjectival elements, as in (44)a-(44)d, or nominal elements (44)e-(44)h. Notice that the nominal can be compound, as in (44)g, and can even bear inflectional information, as in (44)h, where the nominal *-omihsitaw-* 'foot' is an inalienably-possessed nominal, and as is the case with all inalienably-possessed nouns in Ojibwe, it obligatorily bears

inflection, here the prefix  $-o-3^{rd}$  person singular. The fact that a compound, or even an inflected, nominal can occupy the left-edge slot further illustrates the complexity of the whole structure.

# (44) *-hpokosi/hpikwan* 'taste like, AI/II'

| a. | Shiiwihpikwan.<br>shiiwi-hpikwan<br>sweet- taste.like.II<br>'It tastes sweet.'  | adjectival         |
|----|---|--------------------|
| b. | Sheshaawihpikwan<br>sheshawi-hpikwan<br>fresh- taste.like.II<br>'It tastes fresh.'                                      | adjectival         |
| C. | Kehtehpikwan.<br>kehte-hpikwan<br>old- taste.like.II<br>'It tastes old.'  | adjectival         |
| d. | Nihshiwanaacihpokosi.<br>nihshiwanaaci-hpokosi<br>spoiled- taste.like.AI<br>'It tastes spoiled.'                        | adjectival         |
| e. | Waapoosihpokosi.<br>waapoosi-hpokosi<br>rabbit- taste.like.AI<br>'It tastes like a rabbit.'                             | nominal            |
| f. | Koohkoohshihpokosi.<br>koohkoohshi-hpokosi<br>pig taste.like.AI<br>'It tastes like pork.'                               | nominal            |
| g. | Nikoohkoohshiwiiyaahsihpikos.<br>ni-koohkoohshi-wiiyaahsi-hpikos<br>1- pig- meat- taste.like.AI<br>'I taste like pork.' | (compound) nominal |

| h. | Kaawin amohshin,<br>kaawin amo-hshin                             |                      |
|----|--|----------------------|
|    | no eat.TA-2>3.IMPER  |                      |
|    | nitomiisitaawihpikos.<br>nit-omiisitaawi-hpikos                  | (inflected?) nominal |
|    | 1- foot- i-taste.like.AI<br>'Don't eat me, I taste like a foot'. |                      |

Perhaps one of the clearest examples of the productivity of the complex stem structure is represented by the pair of concrete finals -ki/-kin 'grow, AI/II'. Examples in (45) show a long but far from exhaustive list of verb stems that can be formed from this final. The left-edge slot here can be occupied by a directional adverbial, as in (45)a and (45)b, a manner adverbial, as in (45)c-(45)h and (45)n, a type of aspectual element (45)i, a relative preverb<sup>19</sup> in (45)j and (45)k, an adjectival or numeral element, as in (45)l and (45)m, and a measure adverbial, as in (45)o.

(45) -ki/kin 'grow, AI/II'

| a. | Maaciiki niniicaanihs.<br>maacii- ki ni-niicaanihs<br>away/off-grow.AI 1-child<br>'My child is growing.'                             | directional/manner |
|----|--|--------------------|
| b. | Ompiki naapenhs.<br>ompi-ki naapenhs<br>up- grow.AI boy<br>'The boy grew up.'  | directional/manner |
| с. | Minokin mashkosh.<br>mino-kin mashkosh<br>well-grow.II grass<br>'The grass is growing well.'   | manner             |
| d. | Kishaahtapikiwak awaashihshak.<br>kishaahtapi-ki- wak awaashihsh-ak<br>fast- grow.AI-3PL child-PL<br>'The children grew up quickly.' | manner             |

<sup>&</sup>lt;sup>19</sup> A relative preverb links the event described by the verb to various circumstances associated with it. For a more extensive discussion see §2.4.1.

| e. | Osaamiki naapenhs.<br>osaami- ki naapenhs<br>too.much-grow.AI boy<br>'The boy grew too much.'  | manner/degree                               |
|----|--|---|
| f. | Waniki shikop.<br>wani-ki shikop<br>wrong-grow.AI tree<br>'The tree didn't grow the right way.'  | manner/directional                          |
| g. | Papeciki shikop.<br>papeci- ki shikop<br>slowly- grow.AI tree<br>'The tree is growing slowly.'   | manner                                      |
| h. | Takokinmashkosh shikopiihkaanktako-kinmashkosh shikop-iihkaankjoin-grow.IIgrasstree-'The grassgrew onto a tree.'   | directional                                 |
| i. | Pooniki shikop.<br>pooni-ki shikop<br>stop-grow.AI tree<br>'The tree stopped growing.'   | aspectual                                   |
| j. | Peshikwan ishiki shikop.<br>peshikwan ishi- ki shikop<br>same thus-grow.AI tree<br>'The tree is growing the same way/same height [e.g  | relative preverb<br>g. as that other tree.] |
| k. | Kekaat hsha peshikwan ahpiihciki John<br>kekaat hsha peshikwan ahpiihci-ki John<br>almost EMPH same so-grow.AI john<br>'John is almost the same height [as that other person | relative preverb<br>n].'                    |
| 1. | Ani-oshaawashkoki shikop.<br>ani-oshaawashko-ki shikop<br>start- green- grow.AI tree<br>'As the tree is growing it's becoming green.'  | adjectival                                  |
| m. | Nishookiwak shikopiik.<br>nishoo- ki- wak shikop-iik<br>two-grow.AI-3PL tree-PL<br>'Two trees are growing.'  | numeral                                     |

| n. | Maamawikiwak shikopiik.<br>maamawi-ki-wak shikop-iik  | manner  |
|----|---|---------|
|    | together-grow-3PL tree-PL   |         |
|    | 'The trees grew/are growing together.'  |         |
| 0. | Aasha aapihtawiki shikop.<br>aasha aapihtawi-ki shikop<br>already half- grow.AI tree<br>'The tree grew half way already.' | measure |

These examples show that the structure of the complex stem is dynamic and extremely productive, which is expected under the assumptions discussed in §2.2.1, if the elements combined are syntactic categories as opposed to roots.

By contrast, there is evidence that the formation of the simple stem is much less productive than the formation of the complex stem. Consider, for instance, a AI suffix *-ii*, which has been argued to form verbs that denote a 'behavioural' process (Denny 1984) or a state (Shrofel 1981). Whatever the exact meaning of this suffix is, it is clear that it is able to combine with locative roots to form verbs of location, as in (46)a and (46)b, or verbs that denote properties (46)c:

- (46) a. oncii onc-ii from-AI 'be from a certain place'
  - b. piincii piinc-ii inside-AI 'be inside'
  - c. mashkawii mashkaw-ii hard/strong-AI 'be strong'

If the formation of simple stems were as productive as the formation of complex stems, we would expect this suffix to be compatible with any locative root. However, (47) illustrates that

this is not the case. Notice that the roots in (46)a and (47)a are in the same semantic category ('to' vs. 'from'), and so are the roots in and (46)b and and (47)b ('inside' vs. 'outside'), however, in both cases only one member of the pair is compatible with the suffix.

- (47) a. \*ishii ish-ii in/to-AI intended: 'be in/to a certain place'
  - b. \*saakicii saakic-ii out-AI intended: 'be outside'
  - c. \*waakicii waakic-ii above/on top-AI intended: 'be on top/be above'

Consider now the suffix -ih that forms transitive verbs. From the following examples it

appears that it attaches to a wide range of roots, including directional, manner, and psych-roots.

- (48) a. saakicih saakic-ih out-TA 'take someone out.'
  - b. kashkih kashk-ih able-TA control s.o.
  - c. wanih wan-ih wrong-TA 'lose s.o.'
  - d. nishkih nishk-ih angry-TA 'make someone angry'

- e. kiimoocih kiimooc-ih secretly-TA 'sneak up on s.o.'
- f. saakih saak-ih love-TA 'love s.o.'

However, as with the suffix *-ii* discussed earlier, there are unexplained gaps in productivity with this suffix.<sup>20</sup> For instance, while it can attach to the directional root *-saakit-* 'out' (see (48)a) (recall that it triggers palatalization on the *t*; see §2.3 for discussion), it is not compatible with the root *-piint-* 'inside' in the same semantic category (49)a. It can form verbs with the meaning 'control s.o.' and 'lose s.o.' ((48)b and (48)c) but not 'release s.o.' and 'find s.o.' (49)b and (49)c.

- (49) a. \*piincih piinc-ih inside-TA 'bring someone inside'
  - b. \*pakicih pakic-ih release-TA 'put s.o. down/release s.o.'
  - c. \*mihkah mihka-ih find-TA 'find someone'
  - d. \*minwih minw-ih good-TA 'make someone good/happy'

<sup>&</sup>lt;sup>20</sup> This only applies to the behaviour of this suffix in primary derivation, that is, attaching to roots. In secondary derivation where it attaches to stems and acts as a causative, it is completely productive, as expected.

e. \*shiipaah shiipaa-ih beneath-TA 'put s.o. beneath

Thus, there clearly is a difference in productivity between complex and simple stems. I have demonstrated that in complex stems elements that are semantically compatible with the meaning of the root can freely satisfy the left-edge requirement. By contrast, in simple stems there are unexplained gaps in combination of the root and the verbal head. Given the assumptions that productivity and compositionality are indicators of syntactic word formation, this once again suggests that in a complex stem the elements combined are syntactic categories while in a simple stem the formation is at the root level.

# 2.3 Phonology: Palatalization

We have seen two syntactic arguments for the distinction between the two stem types: the derivation of complex stems is much more productive, and more semantically transparent than the derivation of simple stems. There is also phonological evidence for this distinction, which comes from the process of *t*-palatalization. T-palatalization changes [t] to [tf] (spelled c) on the morpheme boundary before  $/i/.^{21}$  This process has long been considered archaic by most Algonquianists (e.g. Wolfart 1973, Rhodes 2008a) because it seems to apply inconsistently, as illustrated below.

Consider the (a) examples below from the perspective of the traditional template (shown in \$1.4.3). In each of these, the vowel *i* intervenes between the initial and the final. The status of this vowel is not clear at the moment but will be discussed shortly. I simply gloss it as 'i' here.

<sup>&</sup>lt;sup>21</sup> Palatalization takes place both in primary and in secondary derivation, and on inflectional boundaries as well as derivational boundaries. We restrict our attention here to palatalization on the derivational boundary, in primary derivation. For accounts of palatalization on the inflectional boundary see Kaye and Piggott 1973a, Russell 1992, Truitner and Dunnigan 1975.

This vowel consistently triggers palatalization on the preceding t (the (b) examples show that the morphemes in question are t-final elsewhere).

- (50) a. saakcipahtoo saaki**c**-i-pahtoo out-i-run.AI 'S/he is running inside.'
  - b. saakitaahshi saakit-aahshi out-fly.AI 'S/he is flying out.'
- (51) a. oncikito on**c**-i-kito from-i-speak.AI 'S/he is calling from a certain place.'
  - b. ontenti ont-enti from-AI 'S/he is away.'
- (52) a. nipiiciwinaa ni-piic-i-win-aa 1-hither-i-carry.TA-1>3 'I am bringing him/her here.'
  - b. piitaahshi
    piit-aahshi
    hither-fly.AI
    'It (i.e. the bird) is flying here.'

The examples in (53) appear to have the same structure, initial and final. In these cases,

the *i* that intervenes between the two stem components fails to trigger palatalization.

(53) a. maatihse maat-i-hse start-i-INCH.II 'It [an event] began.'

- b. nitontinaa nit-ont-i-n-aa 1-from-i-TA-1>3 'I get him/her from somewhere.'
- c. kiimootisi kiimoot-i-si secretly-i-AI 'S/he is sneaking around.'

From the traditional perspective, the application of palatalization is thus completely arbitrary. In this view, the two groups of stems above have the same structure, consisting of an initial and a final. Nevertheless, palatalization takes place in the first group but not in the second. In what follows I argue that the pattern of palatalization can be predicted if we distinguish simple from complex stems.

I deal here exclusively with the process of *t*-palatalization in primary derivation, and the analysis developed here does not apply to other types of palatalization in Algonquian. In particular, the process of the so-called *n*-palatalization (the change from *n* to *sh*) that has been argued to be part of the same larger palatalization process as *t*-palatalization (Rhodes 2008a) does not follow the pattern described here, and is most likely an archaic process.

Before presenting my analysis of palatalization, I give some necessary background on the Ojicree phonological system (§2.3.1), the theoretical assumptions that underlie the discussion to follow (§2.3.2), and review some earlier views on palatalization in the literature (§2.3.3).

# 2.3.1 Background on the Ojicree phonological system

First, some background on the Ojicree phonological sytem is in order. The Ojicree phonemic inventories for consonants and vowels are given below.

(54) Phoneme inventory of Ojicree:

Vowels: a. i, i: e: 0, 01 a, a: b. Consonants: р t m n tf (c) S ∫(sh) W у

Traditionally Ojicree, as well as other closely related Algonquian languages, is considered to have a four-vowel system, with a further length distinction for each vowel, except for the vowel [e:] which does not have a short counterpart in modern Ojicree and other Ojibwe dialects.

h

k

Within the consonants, the Ojicree system is also common to many Algonquian languages. All the obstruents, [p], [t], [k], [s], [ʃ] and [tʃ] have fortis and lenis variants; in Ojicree this contrast is expressed through preaspiration, with fortis being preaspirated. The system also includes two nasals, [m] and [n], two glides [w] and [y], and a glottal fricative [h].

Syllables are of the form C(w)V(V)(C). Ojicree allows very few consonant clusters. Licit heterosyllabic clusters include any consonant followed by a /w/, a sequence of fricative /s/ or /ʃ/ followed by a stop, and a nasal followed by a homorganic stop or fricative (Rogers 1964). The

only licit onset cluster is Cw. Coda clusters are allowed only word-finally (see also Russell 1992 for Plains Cree) and are limited to a sequence of a nasal and a stop or fricative. Onsetless syllables are allowed only word-initially (Piggott and Newell 2006 for Ojibwe, Russell 1992 for Plains Cree).

A default way to break an illegal cluster is to insert an epenthetic *i* (Valentine 2001, Wolfart 1973). Word-internal vowel hiatus is resolved either by truncation or by consonant epenthesis (either a *w*- or a *y*-epenthesis) (Valentine 2001, Piggott and Newell 2006).

### 2.3.2 Theoretical assumptions

I assume a derivational model of phonology according to which surface representations of morphemes in a word are derived from their underlying representations by applying a series of rules in a particular order (e.g. Chomsky and Halle 1968, Kenstowicz 1994). After the syntactic structure is built, underlying representations of morphemes are inserted into the syntactic terminal nodes (Halle and Marantz 1993) and serve as input to phonological processes. I assume that phonological rules such as palatalization apply first, while rules repairing syllable structure, such as epenthesis, apply at the latest stage.

### 2.3.3 Earlier views of palatalization

While there have been attempts in the Algonquian literature to provide an account of palatalization on the inflectional boundary (Kaye and Piggott 1973a, Russell 1992, Truitner and Dunnigan 1975), palatalization on the derivational boundary is almost unanimously considered to be an archaic and unproductive process (e.g. Wolfart 1973, Rhodes 2008b). Those studies in the Algonquian literature that do attempt to account for palatalization synchronically rely heavily

on data from historical processes or on various *ad hoc* assumptions. All of them are based on one or both of the following two claims: (i) the vowel [i] is a surface representation of two different underlying vowels, /i/ and /e/; (ii) the palatalizing *i* is always part of the following morpheme.

For instance, Shrofel (1981) and Wolfart (1973), among others, argue that only [i] that is represented underlyingly as /i/ triggers palatalization, but the [i] that is represented underlyingly as /e/ does not. However, the vowel /e/, which was argued by many to be part of the vowel inventory in Proto-Algonquian, and is still present in some Algonquian languages, never surfaces as such in modern Ojibwe – a fact that renders these accounts synchronically implausible.

Piggott (1974), on the other hand, claims that both /i/ and /e/ trigger palatalization, but only if they belong to the following morpheme, and not when they are epenthetic. However, this strong claim requires him to posit alternate *i*-initial forms for morphemes that are otherwise unambiguously consonant-initial.

In the following section, I propose a different account of palatalization that does not rely on historical data but crucially depends on the distinction between simple and complex stems proposed in this thesis.

# 2.3.4 Palatalization and two types of stems

Before outlining my analysis of palatalization, a note regarding the status of (non)-palatalizing i is in order. Since the vowel i is a very common epenthetic vowel in Ojibwe (e.g. Valentine 2001) and because of hiatus intolerance stem-internally (e.g. Piggott and Newell 2006), it is often very difficult to determine whether a stem-internal i belongs to the morpheme to its right (see §1.4.4 for discussion). In the discussion of palatalization, I assume (contrary to Piggott 1974), that this

vowel does NOT belong to the morpheme on the right of the boundary unless there is clear evidence that it does. In this section I deal with with cases where there is no such evidence, and present my account of palatalization based on the distinction between the two stem types. Cases where *i* is unambiguously part of the 'final' will be dealt with in the next section.

Consider once again cases that appear to be exceptions to palatalization, repeated in (55), paying special attention to the morphemes on the right of the boundary, in bold:

- (55) a. maatihse maat-i-hse start-i-INCH.II 'It [an event] started.'
  - b. nitontinaa nit-ont-i-n-aa 1-from-i-TA-1>3
    'I get him/her from somewhere.'
  - c. kiimootisi kiimoot-i-**si** secretly-i-**AI** 'S/he is sneaking around.'

Notice that in all these examples, the morphemes to the right of the boundary are purely category-defining (abstract finals, in traditional terms). Thus, the suffix *-hse* in (55)a forms intransitive verbs with inchoative meaning, and the suffix *-n* in (55)b forms transitive verbs, while the suffix *-si* in (55)c is also a marker of intransitive verbs. Under the proposal advanced in this thesis, these are all simple stems, and the suffixes to the right of the boundary are category-defining v's.

Consider now the verbs in (56) where palatalization does take place, paying attention again to the morphemes on the right of the boundary:

- (56) a. maaciihse maac-ii- hse start- i- fly.AI 3 'It [a bird] is flying away.'
  - b. saakicipahtoo saakic-i-pahtoo out-i-run.AI 'S/he is running inside.'
  - c. oncikito onc-i-kito from-i-speak.AI 'S/he is calling from a certain place.'
  - d. nipiiciwinaa ni-piic-i-win-aa
    1-hither-i-carry.TA-1>3
    'I am bringing him/her here.'

In these examples the morpheme on the right of the boundary carries lexical meaning. In traditional terms, these are concrete finals. In my terms, the elements on the right of the boundary are constituents formed by the merger of a weak root and a v, and all the stems in (56) are complex stems.

Recall the structures associated with the two stem types, repeated below. The stem in (57)a is a simple stem. The morpheme *-hse* here is a verbal head with an inchoative meaning. The merger of the strong root *-maat-* with this verbal head produces a full *v*P. The status of the vowel *i* that intervenes between the root and the verbal head is not clear at the moment, but I have assumed that it does not belong to the verbal suffix. The verb stem in (57)a, has the meaning

'fly'.<sup>22</sup> This element is itself a morphosyntactic domain formed by the merger of a root *-hse-* and a null v. The adverbial *-maacii-* 'away' obligatorily appears to the left of this constituent to make a complete vP. The stem-internal modifier is formed from the root *-maat-* and the category-defining morpheme *-i-*.

(57) a. maatihse maat-i-hse start/away-AI/II 'it [an event] has started.'



b. maaciihse [maat-i]-[hse] start/away fly.AI 'S/he [a bird] is flying away.'



Thus, the palatalizing vowel i in complex stems is a morpheme, the category-defining head a that forms the left-edge modifier aP. What remains to be determined is the origin of the vowel i in simple stems and the reason it does not trigger palatalization. Since the structure of the

 $<sup>^{22}</sup>$  I treat the two instances of *-hse* in (57)a and (57)b as two distinct homophonous morphemes *-hse*, but this treatment is not uncontroversial. In Ojicree, evidence from palatalization supports my treatment. Palatalization consistently takes place before *-hse* meaning 'fly' but not before inchoative *-hse*, suggesting that the former is actually a weak root forming a complex stem, while the latter is a verbal head that builds a simple stem. This pattern is consistent across a wide range of stems.

simple stem has been argued to be radically different from that of a complex stem, the non-palatalizing i in the simple stem must be of a completely different origin. What is clear at this point is that the two vowels in the different stem types come from two different sources, which begins to explain their varying behavior with respect to palatalization.

There is independent evidence confirming the morphemic status of i in complex stems, and suggesting that the vowel i in simple stems is an epenthetic vowel. The two vowels appear to serve different purposes. Notice that in simple stems i does not always appear. For instance, it appears between the root and the suffix in (58), but not in (59).

- (58) a. maatihse maat-i-hse start-i-INCH.II 'It [an event] started.'
  - b. nitontinaa nit-ont-i-n-aa 1-from-i-TA-1>3 'I get him/her from somewhere.'
- (59) a. onso / \*oniso on-so boil-AI 'It [animate] is boiling.'
  - b. onte /\*onite
    on-te
    boil-II
    'It [inanimate] is boiling.'

The difference between these examples is that in (58) the clusters *ths* and *tn* that are formed when merging the root and the suffix are illegal, while and in (59) the merger gives rise to clusters *nt* and *ns* that are legal (cf.  $\S$ 2.3.1). Thus, it appears that the vowel *i* in simple stems surfaces to break up illegal clusters.

The vowel *i* in complex stems behaves differently. In (60)a it breaks the illicit *tp* cluster that would form otherwise. In (60)b and (60)c, however, it breaks the cluster *nt*, which is permitted, as is evident from (59)b above.<sup>23</sup>

- (60) a. oncipahtoo onci-pahtoo from-run.AI 'S/he is running from a certain place.'
  - b. poonitemo (\*poontemo) pooni-temo stop- -cry.AI 'S/he stopped crying.'
  - c. nikii-wanitaapaanaa (\*-wantaapaan-) ni-kii- wani- taapan- aa 1-past-in.error-drive.TA-1>3
    'I drove him/her in the wrong direction/in a wrong way.'

Thus, it appears that the vowel i in simple stems is an epenthetic vowel whose role is to break illegal clusters. The vowel i in complex stems is not prosodically motivated, supporting the hypothesis that it is a morpheme on its own. The difference in the application of palatalization between simple and complex stems can now be explained in terms of ordering. Assuming that palatalization applies prior to epenthesis, the i in complex stems triggers palatalization because it is morphemic and is, thus, present when palatalization applies. The i in a simple stem is an epenthetic vowel that is inserted after palatalization has applied in order to syllabify; it is not able to trigger palatalization because it is not present yet when this rule applies. This is summarized in the following table:

<sup>&</sup>lt;sup>23</sup> From now on I do not separate this *i* in the morpheme break down, but write it as part of the left-edge modifier, as as was done before (e.g. *onci*- and not *ont-i* in (60)a).

# (61) Palatalization, epenthesis and syllabification

|                | simple stem           | complex stem                     |
|----------------|-----------------------|----------------------------------|
| morphosyntax   | [ont hse $_{\nu P}$ ] | $[[ont-i_{aP}] [hse_{v'}]_{vP}]$ |
| palatalization | [ont hse]             | [[onc-i] [hse]]                  |
| epenthesis     | ontihse               | oncihse                          |

The pattern described here has been tested accross a wide range of stems, and the application of palatalization consistently correlates with the distinction between simple vs. complex stems. Some more examples are shown in (62) and (63). The stems in (62) are simple stems, and the epenthetic i here does not trigger palatalization. From now on, as in the earlier sections, I will omit the epenthetic i from the glosses. The stems in (63) are complex stem, and palatalization does take place.

(62) Simple stems: epenthetic i does not trigger palatalization:

- a. piintihse [piint-hse] inside-II 'It fell inside.'
- b. kiimootisi [kiimoot-si] secretly-AI 'S/he is sneaking around.'

(63) *Complex stems: the morpheme* i *triggers palatalization:* 

a. piincipahtoo [piint-i]-[pah-too] inside-*a* run.AI 'He is running inside.'
- b. piicipiso
  [piit-i]-[piso]
  hither-a-drive.AI
  'S/he is driving in this direction.'
- c. saakiciwin [saakit-i]-[win] out-*a*- carry.TA 'carry s.o. out'

The evidence discussed in this section supports the idea that the vowels i in the two types of stems come from different sources, and that in simple stems i is inserted for purely prosodic reasons. In complex stems, i is not prosodically motivated but rather is a morpheme on its own. This contrast in the behaviour of the two vowels supports the analysis of the stem structure defended in this thesis.

## 2.3.5 Palatalization triggered by morphemic *i*'s in simple stems

In the previous section I have argued that palatalization is triggered in complex stems by a morpheme *i* that is the functional head *a* forming the left-edge modifier. This analysis predicts that when the *v*-head in a simple stem is *i*-initial, palatalization will apply because the vowel *i* is present when phonological rules apply. This prediction is borne out, as shown in (64)a where the root *-aapat-* 'use' merges with the transitive suffix *-ih*. (64)b confirms that this root is *t*-final elsewhere.

- (64) a. aapacih aapat-ih use- TA 'use s.t. (animate)'
  - b. aapatisi aapat-si use -AI 'be useful'

That the suffix in (64)a is *i*-initial is not uncontroversial (as, for that matter, it is with almost any suffix, as discussed in \$1.4.4). In this particular case, however, there is synchronic evidence that *i* is part of the suffix, and I discuss this next.

The transitive suffix in question, identified as -ih in (64)a, like some other categorydefining suffixes, can attach to both roots and stems. For example, in (64)a above it attaches directly to the root -aapat-. When this suffix attaches to stems, it acts as a causative, creating verbs that mean 'make one do X', as in the following examples (the (b) examples show the intransitive verb that the causative is formed from):

- (65) a. nikiwehaa ni-kiwe- ih- aa 1-go.home-TA-1>3 'I made him go home.'
  - b. kiiwe kiiwe go.home.AI 'S/he is going home.'
- (66) a. niwanishkaahaa
  ni-wanishkaa-ih- aa
  1-get.up- TA-1>3
  'I made him/her get up.'
  - b. wanishkaa wanishkaa get.up.AI 'S/he got up.'

As shown in these examples, when the suffix *-ih* attaches to a vowel-final stem, vowel hiatus is resolved by truncating the vowel of the suffix. As the majority of stems in Ojibwe are vowel-final, the *i* of the suffix never actually surfaces in this context, raising doubts about whether this suffix is truly vowel-initial.

There is, however, one exception to this generalization of deletion under hiatus, and it is this exception that provides evidence for the form of the suffix being *-ih* rather than *-h*. When this suffix combines with *o*-final stems, the hiatus is resolved by devocalizing *o* to *w*, instead of by truncation: the final *o* of the stem becomes *w* when syllabifying with the suffix, and the vowel of the suffix is preserved. This is illustrated in (67) to (69) (the (b) examples show the intransitive *o*-final stem that the causative is formed from):

- (67) a. nikiishitepwihaa (\*nikiishitepohaa) ni-kiishitepo-ih- aa 1-cook.AI- TA -1>3
  'I make him/her cook.'
  - b. kiishitep**o** kiishitep-o cook-AI 'S/he is cooking.'
- (68) a. nitaniihshinaapemwihaa (\*anihshinaapemohaa) ni-t- aniihshinaapemo- ih- aa
  1-speak.Ojicree.AI-TA-1>3
  'I make him/her speak Ojicree.'
  - b. anihshinaapemo aniihshinaape-mo Ojicree- speak.AI 'S/he speaks Ojicree.'
- (69) a. Ni-kii-maaciiyaamwihaa (\*-maaciiyaamohaa) ni-kii-maaciiyaamo-ih-aa 1-PAST-run.away.AI-TA-1>3 'I made him run away.'
  - b. maaciiyaamo maacii-yaamo off-run.away.AI 'run away'

Thus, a causative verb formed from the combination of this suffix (-*ih*) with the verb *kiishitepo* 's/he is cooking' has the form -*kiishitepwih*- 'make s.o. cook'; and the combination of

this suffix with the verb *aniihshinaapemo* 'speak Ojicree' renders the stem *-aniihshinaapemwih-*'make s.o. speak Ojicree', and causativizing *maaciiyaamo* renders *-maaciiyaamwih-*.

Notice that *o*-final stems do not exhibit this behavior when combining with verbal suffixes that are consonant-initial. One example of a consonant-initial suffix is the inchoative *-hse*. Altough I do not have examples of the stems discussed above combining with this suffix (such examples are difficult to elicit for semantic reasons), below is another *o*-final stem, *nipo* 'die', in combination with the inchoative *-hse*. As evident from in (70)a, the *o*-devocalization does not take place in this case.

- (70) a. nipohse nipo-hse die.AI-INCH 'It [animate] died quickly.'
  - b. nipo die.AI 'It [animate] died.'

This suggests that the forms in (67)a, (68)a and (69)a are to be expected only if the suffix is *i*-initial. If the suffix consisted only of the consonant *-h-*, the expected forms of these verbs would be *-kiishitepoh-*, *-aniihshinaapemoh-*, and *-maaciiyaamoh-*, but these are ungrammatical.<sup>24</sup>

These examples show that the transitive suffix in question is unambiguously *i*-initial. Not surprisingly, given its morphological status, it predictably triggers palatalization on the *t* of the root in (64)a because it is present when phonological rules apply. Indeed, it consistently triggers palatalization with every *t*-final root it attaches to (the (b) examples again show that the roots are *t*-final elsewhere):

<sup>&</sup>lt;sup>24</sup> The question why these verbs do not obey the general truncation pattern is also important but is outside the scope of this thesis.

- (71) a. kocihkot-ih try-AI 'try s.o.'
  - b. kotamkot-am try-by.mouth.AI 'try s. t. [animate] with mouth/teeth'
- (72) a. oncihonc-ih from-AI 'warn s.o.'
  - b. ontinont-n from-by.hand.TA 'take s.o. out.'

At this point, the suffix exemplified above is the only unambiguously *i*-initial suffix in the data, however, the prediction is that the same pattern will be observed with all *i*-initial verbal heads. Thus, I have shown that in simple stems palatalization depends entirely on the status of the vowel *i*: only morphemic but not epenthetic *i* can trigger palatalization.

Having argued that the transitive suffix in (64)a is indeed *i*-initial, it is clear now that this example fits the general pattern of palatalization predicted from the previous section. Since the vowel is morphemic, it is present when palatalization applies and therefore is able to trigger palatalization. The structural difference between morphemic and epenthetic *i*'s in simple stems is shown in (73):

(73) a. niwiicihaa ni-wiit- ih- aa 1- with- TA-1>3 'I help him/her.'



b. maatihse maat-hse start- II.INCH 'It [an event] started.'



The vowel i in (73)b is epenthetic, inserted late to break an illicit cluster, and cannot trigger palatalization. The vowel i in (73)a, on the other hand, is part of the transitive suffix. Being part of the suffix, it is present from the beginning of the derivation and is able to trigger palatalization when phonological rules apply.

## 2.3.6 Summary

I have shown that the application of palatalization supports the proposed distinction between simple and complex stems. In cases where the vowel *i* is not part of the following morpheme, it consistently triggers palatalization in complex stems but fails to trigger it in simple stems. I have argued that this contrast comes from the structural difference between the two stem types: in complex stems this vowel is a morpheme on its own marking the category of the left-edge constituent, while in simple stems it is an epenthetic vowel, and palatalization is regular and predictable.<sup>25</sup> When the suffix is *i*-initial in simple stems, palatalization occurs.

## 2.4 Complex stems are formed in syntax

We have now seen both syntactic and phonological evidence for distinguishing simple from complex stems, and in particular that complex stems are syntactic constructs, under the assumptions outlined in §2.2.1. In this section, I focus on some additional properties of simple stems that further support the view that these stems are formed in syntax.

Consider once again the structure for complex stems proposed earlier, repeated in (74). In this structure, these stems contain two syntactic domains: the constituent formed by a merger of a weak root and a verbal head (v') and the obligatory *a*P in the left-edge position.

<sup>&</sup>lt;sup>25</sup> Rhodes (2008a) brings several counterexamples to this analysis arguing that palatalization is "well on its way to becoming a completely arbitrary morphological property" (Rhodes 2008, p. 13). Most of Rhodes' counterexamples are based on the assumption, also prevalent in the earlier literature, that the vowel *i* is always part of the following morpheme, but there is not synchronic evidence for this claim. Some of his examples are irrelevant to the present discussion of palatalization because they refer to a different type of boundary than from one I am focusing on here. For example, in (1) (Rhodes' (4a)) an *i*-initial AI (animate) final triggers palatalization (i)b while the corresponding *i*-initial II (inanimate) final does not (i)a.

<sup>(</sup>i) a. mishkawadin b. mishkawaji mishkaw-ad-in-w firm-cold.acts-INAN-3 'It freezes cold.' It [animate] freezes cold.'

Note that the element -*ad*- in both cases is a prefinal (a weak root, in my terms) so the boundary in question (the boundary between a weak root and a verbal head) is more deeply embedded than the boundary that I am focusing on (the boundary between a weak root and the left-edge modifier). I assume that the boundary illustrated here would work the same as the boundary between a root and a verbal head in simple stems: only morphemic but not epenthetic *i* would trigger palatalization. So here, again, there is an implicit assumption that both *i*'s are morphemic, while no evidence is given for that assumption, specifically in the case of (1a).

(74) pimipahtoo [pimi- [pah- too  $_{\nu'}$ ]  $_{\nu P}$ ] along- run- AI 'S/he is running (along).'



In this section I argue that both aP and v' are syntactically transparent, thus reinforcing my claim that the whole structure is syntactic. First, I show that the internal structure of these stems is visible to syntactic operations, suggesting that the complex stem itself is a syntactic construct (Postal 1969, Di Sciullo and Williams 1987). Second, I focus on the properties of the left-edge constituent arguing that it displays all the properties of a phrase.

#### **2.4.1** Visibility in syntax

Generally, if some portion of a constituent is accessible to syntactic processes, that constituent itself cannot be a frozen lexical item, but must be an entity formed in syntax (following Postal 1969, Di Sciullo and Williams 1987). I show that the internal structure of complex stems is visible to syntactic operations: in particular, the domain formed by a merger of a weak root and a verbal head (v') is accessible to elements that operate in syntax.

The elements of interest to us is a class of stem-external modifiers (preverbs) called 'relative preverbs', that attach to the stem and link the event described by the verb to various associated circumstances, such as time, place and the manner in which the event takes place (e.g. Bloomfield 1958, Rhodes 1990, 2005, Wolfart 1996, Valentine 2001). Examples of relative

preverbs are *ishi*- 'in a certain time/location' (75)a, *onci*- 'from a certain place/reason' (75)b, *ahpiihci*- 'to a certain degree' (75)c:

- (75) a. Noohpimink ishi-metawewak aacitamok. noohpimink ishi-[metawe- wak  $_{\nu P}$ ] aacitamo-k bush-LOC ishi- play.AI-3.PL squirrel- PL 'Squirrels are playing in the bush.'
  - b. Waahsa onci-piishaawak. waahsa onci-[piishaa- wak  $_{\nu P}$ ] far from- come.AI- 3PL 'They came from far away.'
  - Niishitana ta-ahpiihci-tahkaayaa.
     niishitana ta- ahpiihci- [tahkaayaa vP]
     twenty FUT- such- cold.II
     'It will be twenty degrees below zero."

Relative preverbs link two syntactically related items. For instance, in (75)a the root *ishi*-'in a certain time/place' links the event 'play' to the location 'in the bush'. The locative adverbial *noohpimink* 'in the bush' and the verb *metawe* 'play' appear as two separate syntactic constituents in the same sentence. Thus, they are related syntactically, but not morphologically. The same is true of (75)b and (75)c. In (75)b the root *onci*- links the event 'come' expressed by the verb *piishaa* to the source adverbial *waahsa* 'far', and in (75)c the root *ahpiihci*- links the verb *tahkaayaa* 'cold' to the degree of coldness 'twenty degrees'. In both cases the adverbial and the verb are separate syntactic phrases. Thus, they are related only syntactically.

Relative preverbs, therefore, are elements that operate in syntax. In all the examples above they combine with simple stems. Examples in (76) show that relative preverbs can also attach to complex stems:

(76) a. Awiya kii-ishi-pikito nantohtamowikamikonk. awiya kii- ishi-[pi- [kito  $_{v'}$ ]  $_{vP}$ ] nantohtamowikamik-onk somebody PAST-ishi-hither-call.AI radio.station- LOC 'Somebody called the radio station.'

- b. Weti nikii-onci-pimitaapaanaak ishkonoowikamikonk. weti ni-kii- onci- [pimi- [taapaan  $_{\nu'}$ ]  $_{\nu P}$ ] -aak ishkonoowikamik-onk there 1-PAST- from- along- drive.TA- 1>3PL school- LOC 'I picked them up from school.'
- c. Mii kaa-kii-ahpiihei-minohpokwan ohowe kaa-tahkaanik. mii kaa- kii- ahpiihei-[mino-[hpokwan  $_{\nu P}$ ]  $_{\nu P}$ ] ohowe kaa- tahkaani.k so COMP-PAST- such- good- taste.II this COMP-cold.CONJ 'This is how tasty that ice-cream was.'

Since relative preverbs operate at the syntactic level, they are expected to appear only in positions that are visible in syntax. The following examples show that relative preverbs can combine with the constituent that corresponds to the concrete final in complex stems, and thus occupy the left-edge position:<sup>26</sup>

- (77) a. Mekwaac masinahikewikamikonk ishikito. mekwaac masinahikewikamik-onk [ishi-[kito v']  $v_P$ ] now office-S/he is calling to the office right now.'
  - b. Ni-kii-ishiwinaa mashkihkiiwikamikonk. ni-kii-[ishi-[win<sub> $\nu'$ </sub>]<sub> $\nu$ P</sub>]-aa mashkihkiiwikamik-onk 1-PAST-ishi-carry.TA-1>3 nursing.station-LOC 'I took him/her to the nursing station.'
  - c. Shaawanonk inaapahtehse kaa-pootaweyaan. shaawanonk [in-[aapahte  $_{\nu'}]_{\nu P}$ ]-hse kaa-pootaweyaan south.LOC ishi-be.smoke-INCH COMP-build.fire.AI-1CONJ 'The wind/smoke from the fire is going south.'
  - d. Weti nitishiwane nipashkwewash. weti nit-[ishi-[wane  $_{\nu}$ ]  $_{\nu P}$ ] ni-pashkwewash there 1-ishi-carry.on.back.AI 1-bag 'S/he is carrying his backpack in that direction.'
  - e. Weti nikii-oncitaapaanaak ishkonoowikamikonk. weti ni-kii- [onci- [taapaan-  $aak_{\nu'}]_{\nu P}$ ] ishkonoowikamik-onk there 1-PAST- from- along-drive.TA-1>3PL school- LOC 'I picked them up from school.'

<sup>&</sup>lt;sup>26</sup> Hirose (2003, p. 89) also uses the ability of relative preverbs to appear inside stems as a diagnostic for syntactic word formation in Plains Cree.

f. Johnink kekaat ahpiihcikini Bill.
 john-ink kekaat [ahpiihci- [ki- v'] vP]- ni Bill
 John-LOC almost ahpiihci-grow.AI-OBV Bill
 'Bill is almost as tall as John.'

Examples in (77)a-(77)d show the preverb *ishi*- 'in/to a certain place' in the left-edge position (with the allomorph *in*- in (77)c); in (77)e the preverb *onci*- 'from a certain place' appears in this slot, and in (77)f the preverb *ahpiihci*- is stem-internal. Compare, in particular, examples (76)a and (76)b above with (77)a and (77)e, respectively. The only difference between these pairs of examples is the position of the relative preverb inside vs. outside the stem. In (76)a the relative preverb *ishi*- 'in/to a certain time/place' appears stem-externally, while in (77)a it appears inside a complex stem, with the two sentences having very similar meanings. The same is true when one compares (76)b and (77)e. In the former, the preverb *onci*- appears as a stem-external modifier, while in the latter it appears stem-internally. The meanings of these two sentences are also the same.

It appears, therefore, that relative preverbs can combine freely not only with full stems but also with the stem-internal v' (concrete final) inside complex stems. The fact that this steminternal domain is accessible to elements that operate in syntax suggests that it itself must be a syntactic entity (cf. Postal 1969, Di Sciullo and Williams 1987). This in turn means that the larger structure that this domain is part of – that is, the complex stem – is itself formed in syntax.

### 2.4.2 The left-edge constituent is a phrase

I now turn to the properties of the left-edge element. I have proposed that it is an XP, and the vowel *i* that appears in many cases is a category-defining head *a*, following the same proposal by Piggott (2006) for preverbal modifiers. In this section I show that there are also other types of elements that can occupy this position, particularly noun and verb stems. Importantly, in all

cases, the left-edge element can be complex. In particular, it can bear functional material, can be modified and can be referential. According to the framework assumed here (cf.§1.5 and §2.2.1) these are all properties of syntactic word formation. Since the left-edge constituent displays properties of a syntactic phrase, we can conclude that the larger structure it is contained by, a complex stem, is itself a syntactic construct.

In all the examples discussed so far, the material on the left edge has been a type of adverbial. What has not been mentioned so far is that this adverbial can be complex, including its own modifiers, in the same way that a preverb (stem-external modifier) can be modified by another preverb. As an example, consider first a very common preverb *kihci*- 'a lot, often, hard, very'. As illustrated in (78), it can modify a whole stem (78)a or another preverb following it, as a degree modifier (78)b.

- (78) a. Mate-kihci-anohkii. mate-kihci-anohkii there-a.lot-work.AI 'S/he works hard/a lot (over there).'
  - b. Kihci-kishaahtapi-kihkentaan. kihci-kishahtapi-kihkentaan very- fast- know/learn.AI 'S/he learns very fast.'

The following illustrate that *kihci*- can also modify the left-edge constituent (initial) in complex stems.<sup>27</sup> In (79)a the complex stem *nishkaapaam* 'look angrily at someone' is used without *kihci*-, and in (79)b this stem is preceded by *kihci*- which in this case modifies the left-edge element *nishk*- 'angrily', forming a complex left-edge element *kihci-nishk* 'very

<sup>&</sup>lt;sup>27</sup> The ability of a preverb (stem-external modifier) to modify a portion of the stem (initial) rather than the whole stem was first noticed by Goddard (1990). Goddard does not distinguish between different stem types, but I predict that this property will only hold for complex stems, since in simple stems the leftmost element (initial) is a root, not a phrase. It is, of course, important to test this prediction with simple stems as well, but this must be left for further research. Here I focus only on the properties of the left-edge element in complex stems.

angrily'. The ungrammaticality of (79)c shows that in this case *kihci*- cannot modify the whole stem.

- (79) a. Nikii-nishkaapamaa nitootem. ni-kii-nishk-aapam-aa ni-tootem
  1-PAST-angrily-look.at.TA-1>3 1-friend
  'I looked at my friend angrily.'
  - b. Nikii-kihci-nishkaapamaa nitootem.
     i-kii-kihci-nishk-aapam-aa ni-tootem
     1-PAST-very-angrily-look.at.AI-1>3 1-friend
     'I looked at my friend very angrily.'
  - c. \*Nikii-kihci-waapamaa nitootem. ni-kii-kihci-waapam-aa ni-tootem
    1-PAST-very-look.at.TA-1>3 1-friend
    intended: 'I have really looked at my friend / intensely / for a long time.'

(80) illustrates the same point with a different verb. In (80)a, the complex transitive stem

*wiinaacim-* 'talk dirty of someone' is used without any additional modifiers. In (80)b the same stem is preceded by *kihci-* where it modifies the left-edge element *wiin-* 'dirty' as a degree modifier. The fact that *kihci-* here is indeed modifying the left-edge element and not the whole stem, is confirmed by the fact that another preverb, *onci-* can appear here, acting as an inchoativizer (cf. §4.3.9.1 in Chapter 4), and excluding such meanings for *kihci-* as 'a lot', 'for a long time' etc.

- (80) a. Nikii-wiinaacimaa nitootem.
   ni-kii-wiin-aacim-aa ni-tootem
   1-PAST-dirty-speak.about.TA-1>3 1-friend
   'I spoke dirty/unpleasantly about my friend.'
  - b. Nikii-onci-kihci-wiinaacimaa nitootem.
     ni-kii-onci-kihci-wiin-aacim-aa ni-tootem
     1-PAST-INCH-very-dirty-talk.about.TA-1>3 1-friend
     'I suddenly said something very dirty/unpleasant about my friend.'

The left-edge slot can be occupied by elements other than aP's. For instance, a full nP can occupy this position. This is illustrated in (81) below. In (81)a the incorporated nominal 'foot' is a dependent (inalienably possessed) nominal. As such, it must obligatorily bear possessive inflection, which in this case is the default third person agreement, since the body part in question is not someone's body part in this context. In (81)b, the left-edge constituent is a compound nominal which consists of two nouns, *kohkoosh* 'pig' and *wiyaahs* 'meat' connected by an epenthetic vowel. Both the presence of the inflection in (81)a and the complexity of the nominal in (81)b points to a syntactic status of these constituents.

- (81) a. Nitomohsitaawihpokosi.
   ni-[o-mihsitaawi]-hpoko-si<sup>28</sup>
   1-[3poss-foot]-taste.like-AI
   'I taste like a foot.'
  - b. Nikohkooshiwiyaahsihpokosi.
     ni-[kohkooshi-wiyaahs]-ihpokosi
     1-pig-meat-taste.like-AI
     'I taste like pork.'

While talking about nominal in the left-edge slot, another important factor is that these nominals can be referential. For instance, in a context where John has been eaten and has a distinct flavor the following utterance is possible:

(82) Johnihpikwan.
johni-hpikw-an
john-taste.like-II
'It [inanimate] tastes like John.'

The fact that this constituent can be referential once again confirms that the structure is dynamic and syntactically active (anaphoric island constraint, Postal 1969).

<sup>&</sup>lt;sup>28</sup> The presence of the personal prefix here is needed to make sure that the noun 'foot' is indeed occupying the left-edge slot inside the stem. The consultant was provided with a specific context to accommodate the weird example.

Finally, a full verb stem can appear in the left-edge position, as illustrated in (83). In (83)a and (83)b, the left-edge slot is occupied by an intransitive stem, forming a kind of resultative construction. In these cases we know that these are indeed verb stems because of the presence of the suffix *-ii* which is one of the verbal heads responsible for forming intransitive verbs (cf. chapter 3). Similarly, in (83)c, the left-edge slot is occupied by a verb stem formed with the suffix *-e*, also forming a resultative construction. Since in the framework of DM assumed in this paper, suffixes that define the category of the verb are considered to be v's, the left-edge element is a vP, a syntactic phrase.

- (83) a. Kii-pahkopiihshimo kii-[[pahkopii vP]-[hshimo v'] vP] PAST-into.water.AI- dance.AI 'S/he danced into the water (e.g. danced on the shore and got into the water).'
  - b. Nikii-naasipiinihshahwaa. ni- kii- [[naasipii $_{\nu P}$ ]- nihshahw $_{\nu'}$ ] $_{\nu P}$ ]- aa 1- PAST-go.to.the.river.AI - send.TA- 1>3 'I sent him down to the river.'
  - c. Kii-tewisitehshimo. kii-[[tewisite  $_{\nu P}$ ]-[hshimo  $_{\nu'}$ ]  $_{\nu P}$ ] PAST-have.sore.feet.AI- dance.AI 'S/he danced until his feet were sore.'

When a verb stem occupies the left-edge edge slot, it can also have additional layers of complexity. For instance, the verb stem that appears on the left edge of the weak root *-hkaaso* 'pretend' in (84)a has its own modifiers, *pihci-* 'by accident' and *wani-* 'wrong'. Even more surprisingly, the verb stem that occupies the left edge in (84)b has its own agreement morphology, in this case the suffix *-aa* that indicates first person subject and third person object.<sup>29</sup>

 $<sup>^{29}</sup>$  It is not clear how productive the pattern exemplified in (84)b is. This is the only example I know of where the verb stem occupying the left-edge position bears its own agreement.

- (84) a. Pihci-wani-tootamkaaso.
   [[pihci-wani-tootam]-kaaso] accidentally-wrong-do.AI-pretend.AI
   'He pretends that he made a mistake by accident.'
  - b. Nikwenawenimaahkaas.
    ni-kwenawenim-aa- hkaas
    1- miss.TA- 1>3-pretend.AI
    'I pretend that I miss him/her.'

Both the availability of modifiers and the presence of functional layers such as agreement also confirm that the left-edge element in complex stems is a phrase.

To sum up, I have argued that complex stems display all properties of syntactic constructs: the components of the stems are visible to syntactic operations (relative preverbs) confirming that the stem itself is a syntactic construct (cf. Postal 1969, Di Sciullo and Williams 1987), and the left-edge element can have functional layers, be referential and can include modifiers, suggesting, according to the syntactic framework assumed here, that it is a syntactic phrase.

# 2.5 Conclusion

In this chapter, I have argued for a distinction between two types of stems: simple stems and complex stems. The distinction comes from the root. Weak roots are subject to the left-edge requirement, and therefore build a more complex structure. Strong roots are not subject to this requirement, therefore the combination of a strong root and a verbal head is enough to build a full stem, without the need for additional material.

Evidence for the distinction came from both phonology and syntax. On the syntactic side I have shown that complex stems are more productive and compositional than simple stems, suggesting that complex stems are built in syntax. On the phonological side, the distinction between the two stem types helps account for the process of palatalization, hitherto considered archaic. The distinction between the two stem types also suggests that complex stems are built in syntax. This is further confirmed by the fact that the internal structure of complex stems is accessible to syntactic operations, and the left-edge constituent in complex stems exhibits other properties of a syntactic phrase. The evidence brought in this chapter also suggests, in line with recent views for other Algonquian languages (e.g. Hirose 2003, Brittain 2003, Mathieu to appear, Branigan et al. 2005, Piggott and Newell 2006), that a large portion of word formation in Ojicree is best viewed as a syntactic process.

One big question that remains unanswered is the nature and motivation of the left-edge requirement. If the concrete final contains both the lexical material (weak root) and the verbal head, what is the role of the material on the left edge, and what is the relation between the weak root and the left-edge constituent? I will postpone the discussion of this requirement till Chapter Four. The next chapter presents an overview of the inventory of category-determining verbal heads in Ojicree.

# Chapter 3 Verbal heads

# 3.1 Introduction

Recall that the traditional Bloomfieldian template divides the stem into three elements: initial, medial and final. The template is repeated here.

(85) Traditional Bloomfieldian template:



In the previous chapter, focusing on the relation between the 'initial' and the 'final', I distinguished between two types of stems according to the complexity of their structure. The correspondence between my analysis and the traditional template is repeated below:

(86) Correspondence between the present analysis and the traditional template:

| traditional template: | [initial                       | final                                      | stem |
|-----------------------|--------------------------------|--|------|
| simple stem:          | [ROOT <sub>S</sub>             | v  | stem |
| complex stem          | [[ROOT <sub>s</sub> $a_{aP}$ ] | $\begin{bmatrix} ROOT_W & V \end{bmatrix}$ | stem |

The structures for the two stem types are brought again in (87). Simple stems are formed by merging a strong root and a verbal head (87)a; in complex stems, a weak root merges with a verbal head forming a constituent that is incomplete and requires additional material on its left edge to become a full stem (87)b.



Recall that the traditional literature also distinguishes 'concrete finals' (finals that define the category and add lexical meaning) from 'abstract finals' (purely category-defining finals). I have argued that 'concrete finals' are a combination of a weak root and a verbal head, as in (87)b. This chapter focuses on the verbal heads, that is elements that roughly correspond to 'abstract' finals in the literature, keeping in mind that I assume, in accordance with DM that every verb has a verbal head, even if it is phonologically null. In accordance with recent views, I assume that the category-defining finals are v's (e.g. Brittain 2003 and Hirose 2003 for Plains Cree, Piggott and Newell 2006 and Mathieu 2007 for Ojibwe, Ritter and Rosen 2010 for Blackfoot). I will therefore not use the term 'final' but instead call them v, to emphasize that I am only talking about the category-defining elements. The category-defining elements mark the verb as one of the four traditional types, according to the transitivity of the verb and the animacy of the subject or object:

AI (intransitive verbs with animate subjects)

II (intransitive verbs with inanimate subjects)

TA (transitive verbs with animate objects)

TI (transitive verbs with inanimate objects)

For each verb category there is a handful of suffixes, some of which are listed in (88)-(90) below. The list is far from exhaustive; there is no agreement in the literature as to the number of suffixes in each group, nor to their form. Denny (1984), in a very comprehensive study of abstract finals for Ojibwe, lists about two dozen abstract finals for all four verb types. O'Meara lists six abstract AI finals for Delaware. The task of estimating the number of verbal heads is made more difficult because the categories 'concrete' and 'abstract' final are generally treated as non-discrete (see discussion in §1.4.4). In the following data, an example is given on the left and the suffixes are listed on the right.

#### (88) AI finals

| a. | miskosi<br>misko-si<br>red-AI<br>'It is red'            | -si |
|----|---|-----|
| b. | oncii<br>onc-ii<br>from-AI<br>'be from a certain place' | -ii |

| C.      | tahkisite <sup>30</sup><br>tahki-sit-e<br>cold-foot-AI<br>'have cold feet'      | -е   |
|---------|---|------|
| d.      | owaakaahkwati<br>o-waakaahkwat-i<br>POSS-axe-AI<br>'have an axe'                | -i   |
| e.      | nipaa<br>nipaa<br>sleep.AI<br>'he's sleeping.'                                  | Ø    |
| f.      | caakihse<br>caak-hse<br>all-AI / II<br>'It ended.'                              | -hse |
| g.      | aanahkonaahke<br>aanahkonaa-hke<br>bannock-AI<br>'make bannock.'                | -hke |
| h.      | waapoosiwi<br>waapoos-wi<br>rabbit-AI<br>'be a rabbit.'                         | -wi  |
| II suff | ixes  |      |
| a.      | kimiwan<br>kimiw-an<br>rain-II<br>'it is raining.'                              | -an  |
| b.      | sakimehkaa<br>sakime-hk-aa<br>mosquito-lots-II<br>'there is lots of mosquitos.' | -aa  |

(89)

 $<sup>3^{30}</sup>$  The suffix *-e* always involves noun incorporation (the incoroporated nominal here is *-sit-* 'foot'), and will be discussed in detail in Chapter Five.

(90) TA/TI suffixes

| a. | paahpih                    | -ih   |
|----|----------------------------|-------|
|    | paahp-ih                   |       |
|    | laugh-TA                   |       |
|    | 'laugh at s.o.'            |       |
| b. | ontin                      | -n    |
|    | ont-n                      |       |
|    | from-i-TA                  |       |
|    | 'get s.o. from somewhere.' |       |
| c. | kiimootamaw                | -amaw |
|    | kiimoot-amaw               |       |
|    | steal-TA                   |       |

'steal s.t. form someone.'

AI and TA suffixes have inanimate counterparts whenever applicable. For instance, the inanimate (II) counterpart of the AI suffix *-si* in (88)a is *-aa*, so the AI verb *miskosi* 'be red' has the II counterpart *miskwaa* 'it [inanim] is red'. However, the suffix *-hke* (88)g that forms denominal verbs does not have an II counterpart, probably because it requires the presence of an agent. The TA verbs in (90)a and (90)b have TI counterparts, *paahpihtoon* 'laugh at s.t.' and *ontinaan* 'get s.t. from somewhere.', but the TA verb *kiimootamaw* in (90)c does not, probably because it requires an animate applicative argument. I do not list all the inanimate pair. The group of II suffixes in (89) are those that denote states of affairs and thus do not have AI counterparts. These are given here for a complete picture. I do not talk about II verbs in this chapter, simply because most of the data in this thesis involve the other two groups of verbs.

Two big questions are (i) what the precise meaning of each suffix is and what the differences are among suffixes in the same group; and (ii) whether it is predictable which suffixes combine with which roots. Both these questions are outside the scope of this thesis. My

goal here is to focus on the suffixes that are used in the data in the other chapters, and to determine their structural properties.

There are two prominent views on the meaning of verbal suffixes in Algonquian. Denny, in a series of papers (Denny and Mailhot 1976, Denny 1977, 1978b, 1984) argues that 'abstract finals' in Ojibwe and Cree mark the aspectual class of the verb. A different view is that verbal suffixes do not encode aspectual information but have to do with argument structure (see O'Meara 1990 for Delaware, Ritter and Rosen 2010 for Blackfoot). I adopt the latter view and assume that verbal suffixes are primarily argument introducers. Although I do not bring specific arguments against Denny's position, the assumption that verbal suffixes are not event introducers is consistent with the general observation that verbs in Ojibwe are consistently ambiguous between stative and inchoative interpretations (e.g. Valentine 2001), something that is probably unexpected if suffixes identify aspectual classes.

For each suffix, I discuss whether it can form both complex and simple stems or just one type. However, when building the structures, I only talk about simple stems. The structures for complex stems will be discussed in the next chapter when an additional layer of structure is introduced.

I divide the discussion to follow according to the type of verb formed by the suffixes: unergative ( $\S3.2$ ), unaccusative (\$3.3), and transitive (\$3.4). In \$3.5, a particular suffix is discussed that does seem to encode aspectual information, lending support to the claim that this is not their primary function. However, before turning to the suffixes, I introduce some additional theoretical assumptions (\$3.1.1) and review the argument structure diagnostics to be used in the following sections (\$3.1.2).

#### 3.1.1 Theoretical assumptions

As discussed in Chapter One, I assume, in accordance with the principles of DM, that all verbs are formed by merging an a-categorial root and a verbalizer, *v* (Halle and Marantz 1993, Marantz 1997). I also assume that only functional heads can introduce arguments, and that the role of an argument is determined by its position in the structure (e.g. Borer 2005, Hale and Keyser 1993, 2002, Pylkkänen 2008).

In accordance with the Unaccusative Hypothesis (Perlmutter 1978), the single argument of an unergative verb is the external argument, whereas the single argument of an unaccusative is the internal argument. With unaccusative verbs, the head v is not only a verbalizer, but also introduces an internal argument in its specifier position. I assume that the external argument is introduced by a separate head outside the vP, which I label Voice, following Kratzer (1996).

### 3.1.2 A diagnostic for argument position

Assuming that the role of an argument comes from its syntactic position, and assuming that each head can introduce one argument, internal and the external argument will be introduced at different levels of structure. This means that the position of an argument can be tested using modifiers that can appear at specific levels of structure, assuming that a modifier must c-command an argument within its semantic scope.

One such element in Ojicree is the preverbal modifier *caaki*- 'all, exhaustive'. Although it is not a quantifier *per se* (Valentine, p.c.) but rather means something like 'completely, exhaustively', it appears that it can function as a quantifier in the dialect at issue here. Most importantly, it can quantify over the internal or the external argument, as in the following example with a transitive verb:

(91) Nikii-caaki-kashkwaataamin mahkisinan ni-kii-caaki-[kash-kwaataa stem]-min mahkisin-an 1-PAST-all- able-sew.TI- 1PL shoe-PL
'We have all sewed moccasins.' / 'We have sewed all the moccasins.'

In (91) *caaki-* appears as a stem-external modifier. It can also appear inside a complex stem as a stem-internal modifier, as in (92) (see also discussion in §2.2.2). Importantly, when it is stem-internal, it can only quantify over the internal argument.

stem-external

(92) Nikii-caakikwaataamin mahkisinan stem-internal ni-kii-[caaki-kwaaataa stem]-min mahkisin-an 1-PAST-all-sew.TI-1PL shoe-PL
 'We sewed all the moccasins.'
 \*'We all sewed moccasins'

These examples show that *caaki*- can appear in different structural positions with different semantic scope. I will therefore use *caaki*- as a diagnostic for whether the only argument of an intransitive verb is external or internal.

An important caveat needs to be mentioned regarding *caaki*-, in order to assure that tests with this element are always valid. In particular, it is not used exactly like the universal quantifier 'all' in English. Because it really means 'exhaustively', its use always implies that the speaker focuses on the exhaustive aspect. For instance, the English sentence *All the children are singing* can be uttered to express admiration at the event, at the involvement of all the children, and so on. The Ojicree equivalent with *caaki*- would not be used in the same way, but would necessarily have the flavor 'exhaustively'. Thus it would be used in a situation where the speaker wants to emphasize that, for instance, no children are left to clean up the toys because they are all singing. Compare the use of *caaki*- with the verb *anohkii* 'work' to the use of a regular (free-standing) universal quantifier *kahkina* 'all':

- (93) a. Kahkina anohkiiwak naapewak kahkina anohkii-wak naape-wak all work-PL man-PL 'All the men are working.'
  - b. Caaki-anohkiiwak naapewak caaki-anohkii-wak naape-wak all-work-3PL man-3PL 'All the men are working (e.g. there is nobody left to play hockey).'

That means that in eliciting sentences with *caaki*-, an appropriate context often had to be constructed to make the sentence felicitious. In all the examples with *caaki*- in the following sections, I provide the context wherever applicable.

Besides this caveat regarding the special semantics of *caaki*-, it is worth noting that there seems to be a lot more to this preverb than I can address here. To my knowledge, the scopal properties of *caaki*- have not been looked at before, and they definitely deserve a more careful examination than is possible here. There are sometimes inconsistencies that I have no explanation for but will notice along the way. Overall, I take a simplified vew of this preverb, and simply use it here as a diagnostic for argument position, ignoring all other possible complications.

## 3.2 Unergatives

Many AI stems that end in a vowel are not easily decomposable into morphemes (cf. Valentine 2001). I assume that these verbs are formed with a null v, and the vP is then selected by a null Voice head that introduces an external argument (following Kratzer 1996). The null v appears to be compatible with both strong roots (94) and weak roots (95).

(94) Simple stems:

- a. nipaa sleep.AI 's/he is sleeping'
- b. niimi dance.AI 'dance'
- c. nikamo sing.AI 'S/he is singing.'
- d. wiihsini eat.AI 'S/he is eating.'
- e. mawiso pick.berries.AI 'pick berries'
- (95) Complex stems:
  - a. minonkwaami. mino-nkwaami good-sleep.AI 'S/he enjoys sleeping.'
  - b. pimishimo pimi-shimo along-dance.AI 'S/he is dancing.'
  - c. minohamaaso mino-hamaaso good-sing.AI 'S/he is singing.'
  - d. pimihkawe pimi-hkawe along-leave.tracks.AI 'S/he is leaving tracks.'
  - e. pimipiso pimi-piso along-drive.AI 'S/he is driving.'

The fact that these are indeed unergatives is confirmed by the *caaki*- test. Recall that when the preverb *caaki*- 'all' is a stem-external modifier, it can refer to either internal or external argument as a stem-external modifier, but when it appears inside the stem it can only refer to the internal argument. The examples in (96) and (97) show the interaction of *caaki*- with complex stems meaning 'run', 'cry' and 'sleep'. When *caaki*- appears inside the stem (the (b) examples) the sentence is ungrammatical, suggesting that the only argument in these clauses is external.

| (96) | a. | Aasha ahpan caaki-maaciipahtoowak awaashihshak<br>aasha ahpan caaki-[maacii-pahtoo <sub>stem</sub> ]-wak awaashihsh-ak<br>already then all-away-run-3.AI child-PL<br>'All the kids ran away already.'       | stem-external |
|------|----|---|---------------|
|      | b. | *Aasha caakipahtoowak awaashihshak<br>aasha [caaki-pahtoo stem]-wak awaashihsh-ak<br>already all-run-3.AI child-PL<br>intended: 'All the kids ran away already.'  | stem-internal |
| (97) | a. | Mekwaac caaki-minonkwaamiwak awaashihshak<br>mekwaac caaki-[mino-nkwaami <sub>stem</sub> ]-wak awaashihsh-ak<br>right.now all-well-sleep.AI-3PL child-PL<br>'The children are all sleeping well right now.' | stem-external |
|      | b. | *Nicaakinkwaamimin<br>ni-[caaki-nkwaami <sub>stem</sub> ]-min<br>1-all-sleep.AI-1PL<br>intended: 'We're all sleeping.'  | stem-internal |

The fact that the *caaki*- cannot appear inside the stem here suggests that the only argument of these verbs is introduced above the level of the stem, as would be expected of unergatives.

Based on these observations, I propose (98) as the structure for an unergative verb. The v in these verbs is simply a verbalizer and does not introduce an argument. The only argument of these verbs is introduced by Voice (following Kratzer 1996), which takes the vP as its

complement.<sup>31</sup> The argument is introduced above the stem level, and is therefore unaccessible to stem-internal elements such as *caaki*-.

(98) nikamo sing.AI 'sing'



To illustrate where *caaki*- fits in this structure the structures for (96)a and (96)b above are given in (99)a and (99)b. (99)a illustrate a grammatical example where *caaki*- attaches to a full stem. Since the external argument has already been introduced at that level by the null Voice head, *caaki*- here adjoins to VoiceP and is able to refer to that argument.

<sup>&</sup>lt;sup>31</sup> For a different analysis of unergatives in Cree, a closely related language, see Hirose (2003), who treats the final vowel of these verbs as a verbal head, and proposes a double-layered vP structure.

(99) a. caaki-maaciipahtoo-wak caaki-[maacii-pahtoo stem]-wak all-away-run.AI-PL 'They all ran away.'



In the ungrammatical (99)b, *caaki*- appears inside the stem, satisfying the left edge requirement for *-pahtoo* 'run'. Since the external argument is introduced above the stem-level by the Voice head, *caaki*-, appearing inside the stem, cannot quantify over that argument.

b. \*caakipahtoo-wak [caaki-pahtoo stem]-wak all-run-PL intended: 'They all ran.'



# 3.3 Unaccusatives

This section deals with several suffixes that form unaccusative verbs. As with other set of suffixes, the set is not meant to be exhaustive, but includes those that appear most often in the other chapters in this thesis. The first two suffixes come in animate/inanimate pairs, while the suffix *-ii* has only the animate (AI) variant. I will only discuss the AI variants of the suffixes, but the same observations hold for their II counterparts.

- (100) a. miskosi misko-si red-AI 'It (animate) is red.'
  - b. miskwaa miskw-**aa** red-II 'It (inanimate) is red.'
- (101) a. inaanso in-aan-so thus-colored-AI 'It is colored in a certain way.'
  - b. inaante
    in-aan-te
    thus-colored-AI
    'It is colored in a certain way.'
- (102) takwii takw-**ii** arrive-AI 'S/he arrived.'

§3.3.1, §3.3.2, §3.3.3 discuss suffixes *-si*, *-ii*, and *-so*, respectively. For each I apply diagnostics to show that these indeed form unaccusative verbs, and discuss other structural peculiarities. In §3.3.4 structures for these verbs are proposed.

The suffix *-si* participates only in primary derivation (combines only with roots, not stems) and most often forms intransitive verbs that denote attributes (Valentine 2001). It is compatible with both strong and weak roots. Examples in (103) and (104) illustrate simple stems built with this suffix. The examples in (103) are all verbs with adjectival meaning, denoting attributes. The stems in (104) seem to be built with the same suffix, but their semantic class is harder to pinpoint.

- (103) a. kinoosi kinoo-si long-AI 'It is long.'
  - b. miskosi misko-si red-AI 'It is red.'
  - c. noohkisi noohk-si soft-AI 'It is soft.'
  - d. napakisi napak-si flat-AI 'It is flat.'
  - e. Ishpisi nimisko. ishp-si ni-misko high-AI 1-blood 'My blood pressure is high.'
  - f. shiiwisi shiiw-si sweet-AI 'It [anim] is sweet.'

|       | g. | wiinisi<br>wiin-si<br>dirty-AI<br>'S/he is dirty'                      |
|-------|----|--|
|       | h. | pakonesi<br>pakone-si<br>hole-AI<br>'It [animate] has a hole in it.'   |
|       | i. | wiimpisi<br>wiimp-si<br>hole-AI<br>'It [animate] has a hole in it.'    |
| (104) | a. | koshkosi<br>koshko-si<br>wake-AI<br>'S/he is awake.'                   |
|       | b. | naakosi<br>naako-si<br>visible-AI<br>'S/he is visible.'                |
|       | c. | aanimisi<br>aanim-si<br>difficult-i-AI<br>'S/he is (being) difficult.' |
|       | d. | nanepewisi<br>nanepew-si<br>shy-AI<br>'S/he is shy.'                   |
|       | e. | kakiitisi<br>kaakiit-si<br>sore-AI<br>'S/he is sore.'                  |
|       | f. | kinakisi<br>kinak-si<br>itchy-AI<br>'S/he is itchy.'                   |

- g. waawiihsakisi wawiihsak-si in.pain-AI 'S/he is in pain.'
- h. sekisi sek-si afraid-AI 'S/he is scared.'
- kiimootisi kiimoot-si secretly-AI 'S/he is sneaking around.'

All the examples above are simple stems. The suffix *-si* can also merge with weak roots to form complex stems. These, in turn, productively combine with various left-edge elements. Several combinations are particularly common: *-nawesi* 'be angry', *-aatisi* 'live, act, be', *-maakosi* 'smell as', *-hpokosi* 'taste like' and *-htaakosi* 'be heard/sound like':

(105) -nawesi 'be angry'

- a. maaciinawesi maacii-nawe-si away-angry-AI 'S/he's leaving angry'
- b. onsaaminawesi onsaami-nawe-si too-angry-AI 'S/he's too angry.'

(106) -aatisi 'live, act, be'<sup>32</sup>

a. pimaatisi pim-aat-si along-act-AI 'It [anim] is alive.'

<sup>&</sup>lt;sup>32</sup> The element *-aatisi* is often glossed 'act, live' (Valentine 2001), but its meaning is very underspecified, and the meaning of stems it forms are usually very idiosyncratic. It is one the few cases where the meaning of a complex stems is not predictable from the meanings of its parts.

- b. kiimootaatisi kiimoot-aat-si secretly-act-AI 'S/he is sneaky.'
- c. nishkaatisi nishk-aat-si angry-act-AI 'S/he is angry.'
- d. oshkaatisi oshk-aat-si new-act-AI 'S/he is young.'
- e. kakiipaatisi kakiip-aat-si stupid-act-AI 'S/he is stupid.'
- f. kiiwaatisi kiiw-aat-si ??- act-AI 'S/he is an orphan.'
- g. kehteyaatisi kehte-aat-si old-act-AI 'S/he is old.'
- (107) *-maakosi / -maakwan* 'smell as'
  - a. minomaakosi aanahkonaa mino-maakw-si aanahkonaa good-smell-AI bannock 'The bannock smells nice.'
  - b. macimaakosi maci-maakw-si bad-smell-AI 'It smells bad.'

- c. shiishiipiwakosi shiishiipi-waakw-si<sup>33</sup> duck-smell-AI 'It [anim] smells like a duck.'
- (108) -hpoko-si / -hpokw-an 'taste as'<sup>34</sup>
  - a. minohpokosi mino-hpokw-si good-taste-AI 'It tastes good.'
  - b. waapoosihpokosi waapoosi-hpokw-si rabbit-taste-AI 'It tastes like a rabbit.'
  - c. kehtehpokosi kehte-hpokw-si old-taste-AI 'It tastes old.'
- (109) -htaakosi / -htaakwan 'sound like, be heard'
  - a. Kihci-okimaawihtaakosi
    kihci-okimaawi-htaakw-si
    big- boss- be.heard-AI
    'S/he sounds like a big boss' (jokingly when s.o. has a deep voice)
  - b. Soonokihtaakosi eh-kakitoc soonoki-htaakw-si eh-kakito-c loud- be.heard-AI COMP-talk.AI-3.CONJ 'S/he talks loudly (lit. 'S/he is loud when s/he talks.')
  - Minohtaakosi kaa-nikamoc.
     mino-htaakw-si kaa-nikamo-c
     good-be.heard-AI COMP-sing.AI-3.CONJ
     'S/he sings well.' (lit. 'S/he sounds good when s/he sings.')

 $<sup>^{33}</sup>$  The weak root *-maakw-* 'smell' has the form *-waakw-* in this example. Its is often the case that in weak roots (traditionally, pre-finals) that begin with labial stops the initial stop is lost in some environments or is replaced with a *w*. This is also the case with medials (incorporated nominals). For more information see Rhodes 1976, and the discussion in §5.2.3.

<sup>&</sup>lt;sup>34</sup> For many more examples with *-hpokosi/-hpokwan* see (44) in Chapter Two, in the discussion on productivity.
- d. Nipehtehtaakos na? ni-pehte-htaakw-s na 1-??-be.heard-AI Q 'Can you hear me well?'
- e. Matwehtaakosi matwe-htaakw-si loud-be.heard-AI 'S/he is heard moaning.'
- f. Wanihtaakwan wani-htaakwan wrong-sound.II 'It sounds wrong (e.g. it's a wrong song).'
- g. Nikakwe-inaahpinawaa kaa-inihtaakosic
  ni-kakwe-inahpinaw-aa kaa-ini-htaakw-si-c
  1-try-imitate.TA-1>3 COMP-so-be.heard-AI-3.CONJ
  'I wanna try and imitate the way he sounds.'

The analysis of the stems in (107), (108) and (109) is not uncontroversial. I analyze *-hpokosi* 'taste', *-maakosi* 'smell' and *-htaakosi* 'be heard, emit sound' as combinations of a weak root and the head *-si*. However these might also be analyzed as tri-partite elements containing the common element *-kw-/-ko-* (*hpo-ko-si*, *maa-ko-si*, *-htaa-ko-si*). The meaning of *-kw-/-ko-* is not entirely clear but Valentine (2001) suggests that it might be a passive morpheme. The tripartite breakdown is in principle plausible because each of these three concrete finals has a corresponding transitive stem where the lexical element preceding *-kw-/-ko-* (that is, *-hpw-* 'taste', *-maa-*, 'smell', *-htaa-* 'hear') occurs independently, as illustrated below:

(110) a. Niminomaamaa aanahkonaa ni-mino-maa-m-aa aanahkonaa 1-good-smell-TR-1>3 bannock 'I like the smell of bannock.'

- b. Niminohpwaa aanahkonaa ni-mino-hpw-aa aanahkonaa 1-good-taste.TR-1>3 bannock 'I like the taste of bannock.'
- c. Niminohtaan ohowe nikamowin ni-mino-htaa-n ohowe nikamowin 1-good-listen-TR this song 'I like (the sound of) this song.'

However, it is also true that the complex elements *-maakosi* 'smell like', *-hpokosi* 'taste like' and *-htaakosi* 'sound like' function as units, which is why I choose not to decompose them into root plus *-kw*-. Valentine (2001) also treats them this way, pointing out that *-htaakosi*, in particular, means something more like 'emit a sound' as opposed to the passive 'be heard'.

There is evidence that *-si* introduces an internal argument. *Caaki-* inside a complex stem built with *-si* can refer to the subject, suggesting that it is an internal argument.

 (111) Caakinawesiwak otishkoonihiwek caaki-nawe-si-wak otishkoonihiwe-k all-angry-AI-3.PL teacher-PL
 'All the teachers are frustrated.'

In this case I have only one example, with *-nawesi* 'be angry'. *Caaki-* with some other elements discussed in this section (such as *-hpokosi* 'taste like', *-maakosi* 'smell like', etc.) is ungrammatical for reasons that are not clear to me. I would speculate that the reasons are independent of the position of the argument, but have to do with the specific semantics of some weak roots: that is, elements such as *-hpokosi* 'taste like' have a specific set of items that they can accept on their left edge (e.g. a nominal or an adjectival element that refers to the thing tasted or to a kind of taste) and *caaki-* does not fall into that set (see, in particular, discussion in §4.2.1). A more systematic study is needed to confirm or disprove this intuition.

Another AI suffix that forms unaccusative verbs is *-ii*, as exemplified below. It has been proposed for various other dialects that this suffix denotes a state (Shrofel 1981) or "process of overt behavior" (Denny 1984). Consistent with the assumptions in this chapter, I assume that it does not specify event structure but simply introduces an argument. Examples with *-ii* combining with strong roots (simple stems) are given below. I do not have any examples with *-ii* combining with weak roots.

- (112) a. kinikwanii kinikwan-ii turn.around-AI 'S/he is turning around.'
  - b. ciihciihkii ciihciik-ii scratch-AI 'S/he is scratching.'
  - c. ontamii ontam-ii busy-AI 'S/he is busy.'
  - d. oncii onc-ii from-AI 'S/he comes from X (a certain place).'
  - e. pincii pinc-ii inside- AI 'It [anim] is inside.'
  - f. mamisii mamis-ii have.diarrhea-AI 'S/he has diarrhea.'

- g. pwahtawii
  pwahtaw-ii
  slow-AI
  'S/he is slow doing something.'
- h. wanii wan-ii wrong-AI 'S/he made a mistake / is wrong.'
- kipihcii
   kipihc-ii
   stop- AI.STAT
   'S/he stopped temporarily.'
- j. pakicii pakicii release- AI.STAT 'S/he landed/is landing' 'S/he let go off/gave up s.t.'
- k. kakwecii kakwec-ii rehearse-AI 'S/he is rehearsing/gettng ready.'

It is interesting to compare this suffix with *-si*, discussed in the preceding section. It is not clear what the division of labour between the two suffixes is, but they are not interchangeable. For instance, the two stems built with *-ii* in (112)c and (112)d above cannot be built with *-si* instead. The same is true for all the forms in (112) above: the suffix *-ii* cannot be replaced by *-si*.

- (113) a. \*ontisi ont-si from-AI intended: 'S/he is from a certain place.'
  - b. \*ontamisi ontam-si busy-AI intended: 'S/he is busy.'

The opposite is also the case: -ii cannot generally replace -si:

- (114) miskosi / \*miskwii misko-si red-AI 'It [anim] is red.'
- (115) Wiinisi/\*Wiinii ahawe naape wiin-si ahawe naape dirty-AI that man 'That man is dirty.'

Because there are no examples in the data of *-ii* combining with weak roots (and it is not clear whether it can combine with them), the *caaki-* diagnostic cannot be used to determine the argument position of the verbs with this suffix. I consider it to be unaccusative simply based on meaning, without further argumentation.

#### 3.3.3 -so

The next unaccusative suffix to be discussed is *-so* (its II counterpart is *-te*), glossed 'be Xed' by Valentine (2001).<sup>35</sup> Some simple stems built with this suffix are in (116).

(116) Simple stems with -so:

- a. onso on-so boil-AI 'It is boiling.'
- b. patahkiso patahk-so erected-AI 'It [anim] stands up / is erected.'
- c. atawaaso ataawaa-so sell-AI 'It is being sold.'

<sup>&</sup>lt;sup>35</sup> There is also *-so* (*-iso*) which means 'by fire', and it's not always clear which one is which.

d. kaaso kaa-so hide-AI 'It [anim] is hidden.'

This suffix also appears to be able to form complex stems, but I am not familiar with many examples. One example is *-kitaaso* 'be angry' which can combine with *maacii-* 'away/off' and *pooni-* 'stop' on its left edge, as in (117). I have not checked systematically whether *-kitaaso* can combine with other elements.

(117) *-kitaaso* 

- a. maaciikitaaso maacii-kitaaso off-angry.AI 'S/he is storming off angry.'
- b. poonikitaaso pooni-kitaaso stop-be.angry 'S/he stopped being angry.'

Another combination of the suffix *-so* with a weak root is *-nihkaaso* 'be called', which forms the complex stem in (118), with *ishi-* 'thus' satisfying the left-edge requirement. As with *-kitaaso*, it is not clear whether there are other elements that can satisfy the left-edge requirement for *-nihkaaso*.

(118) -*inihkaaso* 

ishinihkaaso ishi-nihkaa-so thus-name-AI 'It [anim] is named...' / 'His/her name is...' As with the suffix -si, discussed in §3.3.1, some stems built with -so have corresponding transitive stems, making -so look like a passive morpheme. This is true of stems in (116)c, (116)d, and (118), repeated below with their transitive counterparts.

- (119) a. atawaaso atawaa-so sell-AI 'be sold' b. atawaataan atawaa-taan sell-TI 'sell s.t.' (120) a. kaaso kaa-so hide-AI 'be hidden' b. kaatoon kaa-toon hide-TI 'hide s.t.' (121) a. ishinihkaaso ishi-nihkaa-so thus-name-AI
  - b. ishinihkaataan ishi-nihkaa-taan thus-name-TI 'name s.t.'

'be named thus'

The diagnostic with *caaki*- confirms that this suffix forms unaccusative verbs. In the following example, *caaki*- can refer to the only argument of *-kitaaso* 'be angry', suggesting that it is an internal argument.

(122) Caakikitaasowak naapewak caaki-kitaaso-wak naape-wak all-angry.AI-3PL man-PL 'All the men are angry.'

### **3.3.4** Structures for unaccusatives

I propose that the suffixes -si, -ii and -so occupy the v position and introduce an internal argument in their specifier, as illustrated in the following structures. For the suffixes -si (123) and -so (125) I include structures for complex stems with *caaki*- in the left-edge position (the (b) examples), to illustrate that these stems are grammatical because *caaki*- has the argument in its scope.

(123) -si

a. miskosi misko-si red-AI 'be red'



b. caakinawesiwak naapewak caaki-nawe-si-wak naape-wak all-angry-AI-3PL man-PL 'All the men are angry.'



(124) -ii

ontamii ontam-ii busy-AI 'be busy'



(125) -so

a. onso on-so boil-AI 'boil'

> vP pro ROOT<sub>s</sub> v on -so

<sup>&</sup>lt;sup>36</sup> For now, to illustrate where the left-edge element in complex stems fits, I assume multiple specifier positions (i.e. one for the argument and one for the left-edge element). In Chapter 4 I will introduce an additional layer of structure that will eliminate the need for multiple specifiers.

b. caakikitaasowak naapewak caaki-kitaa-so-wak naape-wak all-angry-AI-3PL man-PL 'All the men are angry.'



## 3.4 Transitives

Transitive suffixes usually come in pairs: transitive animate (TA) and transitive inanimate (TI), distinguished by the gender of the object (e.g. Wolfart 1996, Rhodes 1976, Valentine 2001), as exemplified below:

- (126) a. Nikii-wanihaa nitootem ni-kii-wan-ih-aa ni-tootem 1-PAST-lose-TA-1>3 1-friend 'I lost my friend.'
  - b. Nikiih-wanihtoon nimasinahikan ni-kii-wan-iht-oon ni-masinahikan 1-PAST-lose.TI-AGR 1-book 'I lost my book.'
- (127) a. Nikii-kotinaa aanahkonaa ni-kii-kot-n-aa aanahkonaa 1-PAST-try-TA-1>3 bannock 'I checked the bannock.'
  - b. Nikii-kotinaan wiiyaahs ni-kii-kot-n-aan wiiyaahs 1-PAST-try-TI meat 'I checked the meat.'

As with other groups of verbs, there are several suffixes that can form transitive verbs. For example, Rhodes (1976) lists about seven most common 'simple' (as opposed to 'instrumental', see below) transitive finals. Here, again there is no agreement as to the number of suffixes that can form these verbs, because of the inconsistent use of the terms 'concrete' and 'abstract' final. To complicate matters, within transitive finals, two kinds are traditionally distinguished: simple and instrumental. Simple transitive suffixes simply transitivize the verb. Instrumental finals not only transitivize the verb but also specify what instrument/body part/means was used to perform the action described by the verb. In fact, the transitive suffix *-n* in (127) is normally considered to be instrumental 'by hand', but I treat it as a purely categorydefining morpheme, for the reasons given in §3.4.2.

In this section I will limit the discussion to the two suffixes exemplified above: *-ih*, and *-n*. I will only talk about their TA variants (the (a) examples), but all the arguments equally apply to their TI counterparts (the (b) examples).

#### 3.4.1 -ih

The TA suffix *-ih* and (its TI counterpart *-iht*) forms transitive verbs. This final participates in both primary and secondary derivation (i.e. it is able to attach to both roots and stems). When it attaches to a root, it is simply a transitivizer (128), but when it attaches to a stem, it acts as a productive causative (129).

(128) *-ih* attaching to roots (primary derivation):

- a. noocih nooc-ih flirt-TA 'flirt with s.o.'
- b. nishkih nishk-ih angry-TA 'make s.o. angry'

- c. paahpih paahp-ih laugh-TA 'laugh at s.o.'
- d. oncih onc-ih from-TA 'warn s.o.'
- e. saakicih saakic-ih out-TA 'take s.o. out'

(129) -*ih* attaching to stems (secondary derivation), productive causative:

- a. Nikii-anohkiihaa ni-kii-anohkii-ih-aa 1-PAST-work.AI-TR-1>3 'I made him/her work
- kapaah kaapaa-ih disembark-TR 'get someone out of the vehicle (help them out)'
- c. poonikih pooni-ki-ih stop-grow-TR 'make [e.g. the tree] stop growing.'

As expected, when it attaches to roots, idiosyncrasies are more likely to arise than in the case of productive causative. Thus, *paahpih*- in (128)c means 'laugh at s.o.' and not 'make s.o. laugh' as would be expected if it was a productive causative. On the other hand, when *-ih* attaches to a stem, the meaning of the resulting stem is completely transparent, as expected with a productive causative.

As discussed in  $\S2.3.5$  in the context of discussion of palatalization, evidence for the phonological form of this final as *-ih* comes from its behavior in secondary derivation. When

combining with o-final stems, it trigges -*wi* sandhi rather than truncation. The relevant examples are repeated below: the final triggers -*wi* sandhi with stems that end in *o*, confirming that this suffix is *i*-initial.

- (130) a. nikiishitepwihaa (\*nikiishitepohaa) ni-kiishitepo-ih- aa 1-cook.AI- TA -1>3 'I make him/her cook.'
  - b. kiishitepo kiishitep-o cook-AI 'S/he is cooking.'
- (131) a. nitaniihshinaapemwihaa (\*anihshinaapemohaa) ni-t- aniihshinaapemo- ih- aa 1--speak.Ojicree.AI-TA-1>3
  'I make him/her speak Ojicree.'
  - b. anihshinaapemo aniihshinaape-mo Ojicree- speak.AI 3 'S/he speaks Ojicree.'

# *3.4.1.1* -ih *with roots*

Let us first focus on *-ih* in combination with roots. The relevant examples are repeated below:

(132) *-ih* attaching to roots (primary derivation):

- a. noocih nooc-ih flirt-TA 'flirt with s.o.'
- b. nishkih nishk-ih angry-TA 'make s.o. angry'

- c. paahpih paahp-ih laugh-TA 'laugh at s.o.'
- d. oncih onc-ih from-TA 'warn s.o.'
- e. saakicih saakic-ih out-TA 'take s.o. out'

All the verbs in (132), being transitive, take two arguments. According to the assumptions in this thesis, each argument must be introduced by its own functional head. Thus, there must be two heads in these structures. Each of the verbs in (132) has only two overt morphemes (root + -ih), which means that one of the argument-introducing heads is null. The question is which head is null and which argument is introduced by *-ih*.

One way to test the position of argument introduced by *-ih* is the *caaki-* diagnostic used in the previous sections. If *caaki-* can appear on the left-edge of a complex stem formed with *-ih* and refer to the internal argument in that position, that would be indication that *-ih* introduces an internal argument. Unfortunately, this diagnostic cannot be used because there are no examples that I know of where *-ih* joins with a weak root to form a complex stem. This is a very uncommon restriction, since as was demonstrated earlier in this chapter, normally a suffix can attach to both types of roots. That *-ih* cannot join with weak roots is clear from the following examples. In the following example *-ih* attaches to the complex stem *wani-piso*. From the relative scopes of *wani-* and *-ih*, it is clear that the constituent *wani-piso* has to form first and then it is transitivized. That is, *wani-* 'wrong/in error' refers to the event of driving, not to the agent of the transitive verb 'make s.o. drive'. (133) nikii-wanipiswihaa ni-kii-[[wani-piso]-ih]-aa / \*ni-kii-[wani-[piso-ih]]-aa 1-PAST-wrong-drive.AI-TA-1>3
'I made him drive in the wrong direction.'
\* 'I made a mistake by making him drive a vehicle.'

It is not clear at this point what the significance of the sensitivity to root type displayed by this suffix is. The incompatibility of *-ih* with weak roots makes it impossible to use the *caaki-* diagnostic to determine the position of the argument introduced by this suffix.

With the absence of a definitive evidence for the position of -ih, I propose for now that it is a Voice head that introduces an external argument. The only piece of evidence in favor of putting it Voice as opposed to v is the fact that it can form causatives by introducing a causer (see examples in (129) above).

The structure that I propose for root-based *-ih*-verbs (such as the ones in in (132)) is the following. The internal argument here is introduced by a null v, while the the external argument (*pro*) is introduced in VoiceP headed by *-ih*:<sup>37</sup>

(134) nishkih nishk-ih angry-TR 'anger s. o.'



<sup>&</sup>lt;sup>37</sup> For a different treatment of transitive verbs see Hirose 2003, who puts the transitivity suffix in the lowest v (his  $v_1$ ) to introduce an internal argument, while  $v_2$  is occupied by theme signs (agreement morphemes).

#### 3.4.1.2 -ih with stems: a selection restriction

The suffix *-ih* can also attach to verb stems, acting as a causative morpheme. As expected from a category-based (as opposed to root-based) process, this process is extremely productive. Indeed, at first glance, it is able to attach to virtually any intransitive verb stem. Below is just a small sample of possible combinations:

- (135) a. Nikii-niimihaa ni-kii-niimi-ih-aa 1-PAST-dance.AI-TR-1>3 'I made him/her dance.'
  - a. Nikii-anohkiihaa ni-kii-anohkii-ih-aa 1-PAST-work-TR-1>3 'make s.o. work'
  - kaapaah kaapaa-ih disembark.AI-TR 'get someone out of the vehicle (help them out)'
  - c. poonikih pooni-ki-ih stop-grow-TR 'make [e.g. the tree] stop growing.'
  - d. Nikipihtohsehaa ni-kipihtohse-ih-aa 1-stop.walking.AI-TR-1>3 'I made him/her stop walking.'
  - e. Nikii-wanishkaahaa ni-kii-wanishkaa-h-aa 1-PAST-wake.up.AI-TR-1>3 'I made him/her get up.'

However, despite the general transparency of the process, there are unexpected gaps in its productivity. Thus, the following (a) examples (formed from the intransitive stems given in (b)) are not possible. Instead, the forms in (c) are used, which are formed from the same roots.

- (136) a. \*Nikii-napakisihaa aanahkonaa ni-kii-napakasi-ih-aa aanahkonaa 1-PAST-flat.AI-TA-1>3 bannock intended: 'I flattened the bannock.'
  - b. napakisi aanahkonaa napak-si aanahkonaa flat-AI bannock 'The bannock is flat.'
  - c. Nikii-napakihaa aanahkonaa ni-kii-napak-ih-aa aanahkonaa 1-PAST-flat-TA-1>3 bannock 'I flattened the bannock.'
- (137) a. \*Nikii-sekisihaa niciimic ni-kii-sekisi-ih-aa ni-ciimic 1-PAST-be.afraid.AI-TA-1>3 1-younger.sibling intended: 'I frightened my younger sibling.'
  - b. Sekisi niciimic. sek-si ni-ciimic
     be.afraid-AI 1-younger.sibling
     'My younger sibling is scared.'
  - c. Nikii-sekihaa niciimic.
    ni-kii-sek-ih-aa ni-ciimic
    1-PAST-be.afraid-TA-1>3 1-younger.sibling
    'I frightened my younger sibling.'

Notice that both intransitive verbs above (the (b) examples) are built with the suffix *-si* that forms unaccusative verbs, as argued in §3.3. It appears that this is the crucial factor that restricts the productivity of the suffix *-ih*: it cannot attach to unaccusative stems, but only to unergative ones. Some more examples confirming this are given below. The intransitive stem in (138)b is built with the same unaccusative suffix *-si* just discussed, and the causative (138)a built on that is ungrammatical; instead the root-based form in (138)c is used. The verb in (139)b is formed with another unaccusative suffix *-ii*, also discussed in §3.3, and the causative in (139)a is again ungrammatical. A verb built with a different head in (139)c is used instead. The last two examples involve verbs with unaccusative suffixes that were not discussed in this chapter. The

intransitive stem in (140)b is formed with the suffix -*i*, which forms verbs of possession, and thus is intuitively a non-agentive suffix. The stem in (141)b is a II verb (an intransitive verb with inanimate subject). These verbs normally describe weather conditions, time, and states of affairs, as in these particular case, and are by definition non-agentive. The causatives built on these stems are also ill-formed (the (a) examples).

- (138) a. \*Nikii-nishkaatisihaa ni-kii-nishkaatisi-ih-aa 1-PAST-be.angry.AI-TR-1>3 intended: 'I made him angry.'
  - b. Nishkaatisi nishk-aat-si angry-act-AI 'S/he is angry.'
  - c. Nikii-nishkihaa ni-kii-nishk-ih-aa 1-PAST-be.angry-TR-1>3 'I made him angry.'
- (139) a. \*Nikii-kiinikwaniihaa ni-kii-kiinikwanii-ih-aa 1-PAST-turn.around.AI-TR-1>3 intended: 'I turned him around (e.g. I am a tailor).'
  - b. Kiinikwanii kiinikwan-ii turn.around-AI 'S/he turned around.'
  - c. Ni-kiih-kiinikwaniwepin-aa ni-kiih-kinikwaniwe-pin-aa 1-PAST-turn.around-pull.TR-1>3 'I turned him around.'

- (140) a. \*Nitowaakaahkwatihaa nitootem weti ahpan e-ishaac nohpiimink<sup>38</sup> ni-owaakaahktwati-ih-aa ni-tootem weti ahpan e-ishaa-c noohpimink
  1-have.an.axe.AI-TR-1>3 1-friend there ?? COMP-go.AI-3CONJ bush.LOC 'I made him have an axe (gave him an axe) when he goes into the woods.'
  - b. owaaakaahkwati o-waakaahkwat-i POSS-axe-have.AI 'S/he has an axe.'

(141) a. \*Okii-mahiinkanihkaahtoonawaa aniihshininiwak e-waawepinikewaac.
 o-kii-mahiinkani-hkaa-ih-too-naawaa aniihshinini-wak e-waawepinike-waac
 3-PAST-wolve-lots.II-TR-AGR-PL man-PL COMP-throw.garbage.AI-3CONJ
 intended: 'People made wolves come (caused a state where there's lots of wolves)
 by throwing garbage around.'

 b. mahiinkanihkaa mahiinkani-hkaa wolve-lots.II 'There are lots of wolves.'

Based on these examples, it is reasonable to conclude that -ih is incompatible with unaccusatives.<sup>39</sup>

On the other hand, *-ih* is always compatible with unergative verbs:

(142) a. Nikii-anohkiihaa ni-kii-anohkii-ih-aa 1-PAST-work.AI-TR-1>3 'I made him/her work.'

<sup>&</sup>lt;sup>38</sup> There is some variation in judgements here: the causative form *-owaaakaahkwatih-* 'make s.o. have an axe' is grammatical for some speakers but ungrammatical for others. Presumably, the variation arises because of the different perception of agentivity of the verb *owaakaahkwati* 'have an axe'. Some speakers perceive it as as a non-agentive state, while for others it can be dynamic 'take an axe' and therefore agentive.

<sup>&</sup>lt;sup>39</sup> I know of one exception that challenges this generalization. The causative in (i) appears to be built on the intransitive inanimate verb *noontaakwan* 'be heard, sound' (the corresponding AI form is *noontaakosi*). I am not sure what to make of it at the moment, but this exception suggests that more research is needed to confirm or disprove the generalization about *-ih* not being compatible with unaccusatives.
(i) Ni-wii-noontaakwam-ih-toon kekoon cf. *noontaakwan* 'be heard' II

<sup>(</sup>i) Ni-wii-noontaakwam-ih-toon kekoon 1-VOL-be.heard.II-TR-AGR something 'I want to put music on.'

- b. Nikii-niimihaa ni-kii-niimi-ih-aa 1-PAST-dance.AI-TR-1>3 'I made him/her dance.'
- c. Nikii-pimishimwihaa ni-kii-pimishimo-ih-aa 1-PAST-dance.AI-TR-1>3 'I made him/her dance.'
- d. Nikii-kiishitepwihaa ni-kii-kiishitepo-ih-aa 1-PAST-cook.AI-TR-1>3 'I made him cook.'

A clarification is needed regarding the structures of these stems. It was argued in §3.2 that the Voice head in unergative verbs is always null. That is, on the surface the form of an unergative stem will look identical to the root form. So how do we know that these are stems and not roots? Evidence comes from adverbial scope ambiguities.<sup>40</sup> An agent-oriented adverb adjoins to a VoiceP and refers to an agent (the external argument introduced in Spec, Voice). Since transitive verbs with *-ih* are agentive, there would be a VoiceP for an agentive adverb to adjoin to. An unergative verb is also a VoiceP, as discussed in §3.2, thus providing another possible attachment site for an agent-oriented adverbial. Thus, if in the stems in (142) the causative *-ih* attaches to an unergative stem, we would expect a two possible attachment sites for an agent-oriented adverbial, and hence there would be a scope ambiguity. If, on the other hand, these are formed by transitivizing a bare root, there would be only one VoiceP (headed by *-ih*), and no ambiguity would arise.

(143) shows that ambiguity does arise in such cases. When combining with the transitive stem *niimih*- 'make s.o. dance', the agent-oriented preverb *kakwe*- 'try' can be interpreted as referring to the agent of dancing, or to the agent of the causing event.

<sup>&</sup>lt;sup>40</sup> See also Pylkkänen 2008.

(143) Nikii-kakwe-niimihaa ni-kii-kakwe-niimi-ih-aa
1-PAST-try-dance.AI-TR-1>3
'I made him try dancing.' / 'I tried to make him dance.'

Thus, it appears that the causative -ih is compatible with unergative, not with unaccusative, verbs. In terms of structure, this means that this suffix can take a VoiceP complement<sup>41</sup> but not a *v*P complement. The structure that I propose for a causative verb with -ih, such as (143), is given in (144). The suffix -ih here is a Cause head and forms a CauseP. Following Pylkkänen 2008, I assume that Cause may or may not be bundled with Voice, depending on the presence of an agent. Since causatives built with -ih are agentive, I propose that -ih is bundled with Voice.

(144) niimih niimi-ih dance.AI-TA 'make s.o. dance'



There is, in fact, some parallel to this selection restriction exhibited by *-ih* in causatives cross-linguistically, as unaccusative and unergative verbs often pattern differently with respect to

<sup>&</sup>lt;sup>41</sup> However, crucially *-ih* cannot attach to transitive stems even though they are also VoiceP as argued above (cf. Rhodes 1976 who notes that transitive stems cannot be causativized). I have no explanation for this restriction.

valency-changing operations such as passivization and causativization (e.g. (Folli and Harley 2007, Pylkkänen 2008). For instance, in Italian, one type of productive causative cannot embed *v*Ps with an unintentional causer, but only agentive *v*Ps, as in (143) (Folli and Harley 2007, their example (20)). (145)a shows that the subject of the verb 'break' in Italian can be either the agentive (intentional) 'Maria' or the unintentional (non-agentive) 'branch'. As clear from (145)b, the verb 'break' can be causativized only when it has an agentive subject.

- (145) a. Maria / Il ramo ha rotto la finestra. Maria / the branch has broken the window 'Maria / The branch broke the window.'
  - b. Gianni ha fatto rompere la finestra a Maria / \*al ramo. Gianni has made break the window to Maria / to.the branch 'Gianni made Maria / \*the branch break the window.'

To explain the contrast in grammaticality, Folli (2007) suggest that the subject of the productive causative is obliging the subject of the embedded verb to participate in the event (e.g. in (145)b Gianni is obliging Maria to participate in the event of breaking the window). Since inanimate subjects like 'branch' cannot be obliged to do something, causatives with 'branch' as in (145)b are expected to be ungrammatical.

It is possible that a similar explanation would apply to the restriction with the causative *-ih* in Ojicree: the subject of the embedded intransitive verb must be intentional and must therefore be introduced by Voice, because this embedded subject is expected to participate actively in the event. More research is needed to determine the extent of similarity between the Italian productive causative and the *-ih*-causative in Ojicree. <sup>42 43</sup>

<sup>&</sup>lt;sup>42</sup> In other respects, the Italian causative appears to be different from the Ojicree causative with *-ih*. In particular, it is able to embed *v*P's that do not involve any causer at all, such as *v*P's headed by *v*-BE and *v*-BECOME (Folli and Harley 2007), which appears to be impossible with *-ih* as discussed earlier in this section.

#### 3.4.2 -n

The suffix *-n* is often glossed 'by hand' and is considered to belong to the class of instrumental finals (finals that specify the instrument with which an event was caused. (e.g. Rhodes 1980, Valentine 2001).

- (146) a. Nikii-napakinaa aanahkonaa. ni-kii-napak-n-aa aanahkonaa 1-PAST-flat-TA-1>3 bannock 'I have flattened the bannock.'
  - b. Nikii-napakinaan ahkihkii.
     ni-kii-napak-n-aan ashkihkii
     1-PAST-flat-TI-AGR clay
     'I have flattened the clay.'

According to another view, the meaning of this suffix is more general, better glossed like 'exerting fine control' (Rhodes 1980), reflecting the fact that it does not always involve the use of the hand. I adopt this latter view and consider this suffix a pure verbalizer without any additional lexical meaning. The following examples illustrate that it does not have to involve the use of the hand.<sup>44</sup> In (147)a, (147)b and (147)d the use of the hand is implied only in a very abstract sense; (147)c clearly indicates that a different body part was used; and (147)e (that involves the same verb as (147)d used in a more abstract sense) is clearly just a transitive verb with no specification of body part instrument.

<sup>&</sup>lt;sup>43</sup> Pylkkänen (2008) reviews selectional restrictions on causative heads cross-linguistically proposing that Cause can be root-selecting, vP-selecting or phase-selecting. Based on this ontology, -ih can be root-selecting (see §3.4.1.1) or phase-selecting, but it cannot select a vP (unaccusative verb). The only caveat is that, as proposed in §3.4.1.1, when -ih attaches to a root, it actually attaches to a vP (since I have proposed that -ih is Voice, while the internal argument is introduced by the v head), so it *can* attach to a vP, only not to a vP that corresponds to an unaccusative verb. For now, we can say that -ih cannot take as its complement a verbal domain that has all its arguments satisfied none of which is an external argument.

<sup>&</sup>lt;sup>44</sup> Yet a different view is that there is more than one suffix that has the form -n (Rand Valentine, p.c.)

- (147) a. Aanti ontinaman aanti ont-n-aam-an where from-TR-AGR-2.CONJ 'Where did you get it from?'
  - b. Nikiih-kiisinaan waahkaahikan. ni-kiih-kiis-n-aan waahkaahikan 1-PAST-wash-TR-AGR house 'I have cleaned the house.'
  - Nikii-piikonaan pahpaapiwin nisit e-aapacihtooyaan.
     ni-kii-piiko-n-aan pahpaapiwin ni-sit e-aapacihtoo-yaan
     1-PAST-break-TR-AGR window 1-foot COMP-use.TR-1.CONJ
     'I broke the window using my foot.'
  - d. Nikii-pakitinaan masinahikan. ni-kii-pakit-n-aan masinahikan 1-PAST-let.go-TR-AGR book 'I put the book down.'
  - e. Nikii-pakitinaa ci-antawi-masinaaahtehsicikec nikosihs ni-kii-pakit-n-aa ci-antawi-masinaahtehsicike-c ni-kosihs 1-PAST-let.go-TR-1>3 COMP-go-watch.movie.AI-3.CONJ 1-son 'I have let my son to go to the movie.'

This suffix is different from from the transitive -*ih* discussed in §3.4.1 in that it is able to

attach to both strong and weak roots. In the examples above, it attaches to strong roots. The most

common combinations of -n with weak roots are -win (-wi-n) 'carry' and -pin (-pi-n) 'use force,

pull', exemplified below:<sup>45</sup>

(148) -win 'carry'

- a. saakiciwin saakici-wi-n out-carry.TA 'carry s.o. out'
- b. Nikii-ishiwinaa mashkihkiiwikamikonk.
  ni-kii-ishi-wi-n-aa mashkihkiiwikamik-onk
  1-PAST-there-carry.TR-1>3 nursing.station-LOC
  'I carried him/her to the nursing station.'

<sup>&</sup>lt;sup>45</sup> Valentine (2001) also notes that the elements *-pin* and *-win* contain the abstract final *-n* in them.

- c. Onihtaa-papaamiwinaan okitohcikan.
   o-nihtaa-papaami-wi-n-aan o-kitohcikan
   3-usually-around-carry.TR-AGR 3-instrument
   'He carries his instrument around.'
- (149) -pin 'use force, pull'
  - a. ashepin [ashe-pi-n<sub>stem</sub>] backwards-use.force.TA 'push someone backwards.'
  - b. kinkiciipin [kinakicii-pi-n<sub>stem</sub>] tickle-pull.TA 'tickle someone'
  - Nikii-kakwecipinaa oninciink.
     ni-kii-[kakweci-pi-n<sub>stem</sub>]-aa o-ninc-iink
     1-PAST try-pull.TA-1>3 3-hand-LOC
     'I wrestled with him.'
  - d. Nikii-niikatepinaa pankii kaa-ishi-apic.
    ni-kii-[niikate-pi-n<sub>stem</sub>]-aa pankii kaa-ishi-api-c
    1-PAST-aside-pull.TA-1>3 a.little COMP-there-sit.AI-3CONJ
    'I moved him aside a little in his chair.'
  - e. Nikii-amacipinaa ni-kii-[amaci-pi-n<sub>stem</sub>]-aa 1-PAST-awake-pull.TA-1>3 'I shook him awake.'

Since these structures are transitive and therefore have two verbal functional heads, we have to determine, as with *-ih* above, which of the arguments is introduced by *-n*. I suggested that *-ih* introduces the external argument mainly on the basis of evidence that it cannot combine with weak roots. As evidenced immediately above, the suffix *-n* is able to combine with both types of roots, suggesting that it might occupy a different structural position than *-ih*. Indeed, according to the *caaki-* test, *-n* does not introduce an external argument. When *caaki-* appears as a left-edge constituent with *-win* and *-pin*, it is able to refer to the internal argument but not to the

external one. In the following examples, *caaki-* appears stem-internally and is able to refer to the internal argument, with both *-pin* and *-win*.

- (150) a. Nikii-caakipinaak aanahkonaak.
   ni-kii-caaki-pin-aak aanahkonaa-k
   1-PAST-exhaust-w.force.TA-1>3PL bannock-PL
   'I took all the bannocks'
  - b. Nikii-caakiwinaak awaashihshak.
     ni-kii- caaki-win- aak awaashihshak
     1-PAST-caaki-carry.TA-1>3PL childeren
     'I carried all the kids.'

In (151) and (152) the (b) examples show that the external argument is inaccessible to *caaki*- when it is stem-internal with *-pin* and *-win*. The (a) examples show that *caaki*- is able to refer to the external argument when it is outside the stem.

- (151) Scenario: I am giving away bannocks and want to make sure that everybody had some, so I ask if there is somebody who didn't have a bannock yet, and get the response:
  - a. Aasha nikii-caaki-otaahpinaamin pankii aanahkonaa. stem-external aasha ni-kii-caaki-[otaah-pi-n stem]-aa-min pankii aanahkonaa already 1-PAST-all-take-pull-TA-1>3-1PL a.little bannock 'We've each taken some bannock already.'
  - b. \*Aasha nikii-caaki-pinaamin pankii aanahkonaa. stem-internal aasha ni-kii-[caaki-pi-n stem]-aa-min pankii aanahkonaa already 1-PAST-all-pull-TA-1PL a.little bannock intended: 'We've each taken some bannock already.'
- (152) Scenario: We are on a hiking trip, taking turns carrying the only child in the group, Johnny, who is tired of walking:
  - a. Aasha nikii-caaki-pimiwinaamin johnny aasha ni-kii-caaki-[pimi-wi-n<sub>stem</sub>]-aa-min johnny already 1-PAST-all-along-carry-TA-1>3-1PL johnny 'We've each carried Johnny already.'
  - \*Aasha nikii-caaki-winaamin johnny aasha ni-kii-[caaki-wi-n stem]-aa-min johnny already 1-PAST-all-carry-TA-1>3-1PL johnny intended: 'We've each carried Johnny already.'

Therefore, I propose that -n introduces an internal argument, while the external argument is introduced by null Voice head, as in the following structures.

#### (153) ontin

ont-TR

get s.o. from somewhere



(154) caakiwin caaki-wi-n all-carry-TA 'carry all X'



#### 3.5 -hse

The suffix *-hse* also forms intransitive verbs. It is often glossed 'fly, move, change of state'<sup>46</sup> and forms both AI and II verbs (Valentine 2001). *-Hse* can productively attach to both roots and stems, but acts differently in the two cases. When it attaches to stems, it is an inchoativizer:

#### (155) *-hse* with stems:

- a. Aasha kii-nipaahse aasha kii-nipaa-hse already PAST-sleep.AI-INCH 'He just fell asleep.'
- b. Ekwa niimihsen! ekwa niimi-hse-n let dance.AI-INCH-IMPER 'Get dancing!'
- c. Nitonci-kawacihse ni-onci-kawaci-hse 1-INCH-be.cold.AI-INCH 'I got cold.'
- d. Ketahtawin kii-onci-maamiisiihse. ketahtawin kii-onci-mamisii-hse suddenly PAST-INCH-have.diarrhea.AI-INCH 'S/he got diarrhea suddenly.'
- e. Nikii-sekisihse. ni-kii-sekisi-hse 1-PAST-be.scared.AI-INCH 'I got scared.'
- f. Kii-paawaniihse kii-paawanii-hse PAST-be.hungry.AI-INCH 'S/he got hungry.'

<sup>&</sup>lt;sup>46</sup> As discussed in §2.3, I consider *-hse* 'fly' to be a weak root that is homophonous with the suffix *-hse*.

- g. Kipihciihse otaapaan kipihcii-hse otaapaan stop.AI-INCH car 'The car stopped.'
- h. Nipiiwicaapihse nipiiwicaapi-hse water.eye.have.AI-INCH 'S/he got watery eyes.'
- i. Kii-onci-omahkahkiihse kii-onci-omahkahkii-hse PAST-INCH-be.frog.AI-INCH 'S/he turned into a frog.'
- j. Ketahtawin mahiinkanihkaa-hse weti kaa-ishi-kapehshiyaan ketahtawin mahiinkanihkaa-hse weti kaa-ishi-kapehshi-yaan suddenly lots.of.wolves.II-INCH there COMP-there-stay.AI-1CONJ 'Suddenly there were lots of wolves there where I live.'
- k. Kii-onci-wiinipihsakaahse kii-onci-wiinipihsakaa-hse PAST-INCH-dirty.floor.be.II-INCH 'The floor got dirty suddenly.'
- Kii-onci-kashki-tipihkaahse pehkaac. kii-onci-kashki-tipihkaa-hse pehkaac
   PAST-INCH-prevail-be.night.II-INCH slowly 'It got dark slowly.'
- m. Kii-onci-tahkikamihse nitiim kii-onci-tahkikami-hse ni-tii-m PAST-INCH-cold.liquid.II-INCH 1-tea-POSS 'My tea got cold.'
- n. Kii-kishitehse kii-kishite-hse PAST-be.hot.II-INCH 'It became hot (i.e the weather).'

The following examples confirm that *-hse* with stems indeed acts as an inchoativizer. The verbs in the (b) examples (contrary to their counterparts without *-hse* in (a)) are incompatible with durative adverbials, confirming that they denote punctual events (Vendler 1967).

- (156) a. Kape-tipihk nikii-kawac kape-tipihk ni-kii-kawac all-night 1-PAST-cold.AI 'I was cold all night.'
  - b. \*Kape-tipihk nikii-kawacihse kape-tipihk ni-kii-kawaci-hse all-night 1-PAST-cold.AI-INCH intended: 'I was cold all night.'
- (157) a. Mekwaac nipaa nipepiim mekwaac nipaa ni-pepii-m meanwhile sleep.AI 1-baby-POSS 'My baby is sleeping right now.'
  - b. \*Mekwaac nipaahse nipepiim mekwaac nipaa-hse ni-pepii-m meanwhile sleep.AI-INCH 1-baby-POSS intended: 'My baby is sleeping right now.'
- (158) a. Kii-kihci-sakimehkaa kape-niipink
   kii-kihci-sakime-hkaa kape-niipiin-k
   PAST-very-mosquito-lots.of.II all-summer.II-CONJ
   'There were lots of mosquitoes the whole summer.'
  - \*Kii-kihci-sakimehkaahse kape-niipink
     kii-kihci-sakime-hkaa-hse kape-niipin-k
     PAST-very-mosquito-lots.of.II-INCH all-summer.II-CONJ
     intended: 'There were lots of mosquitoes the whole summer.'

*-Hse* exhibits a different behavior with roots. As demonstrated below, root-based *-hse* verbs are not always inchoative. While verbs in (159)a to (159)f below could be understood as inchoatives, the same cannot be said about the last two examples, (159)g and (159)h. In all examples below, *-hse* combines with strong roots (simple stems). I do not have any evidence of it combining with weak roots.

(159) *-hse* with roots

a. Siikihse siik-hse 'It spilled.'

- b. Piintihse nitahcaanihsh piint-hse ni-ahcaanihsh be.inside.INTR 1-ring My ring fell into a slot/crack
- c. Pimihsewin pwaahawi-takohse pimihsewin pwahtawi-tako-hse plane delayed-arrive.INTR 'the plane came late'
- d. maatihse maat-hse start-INTR 'It [an event] has started.'
- e. Kii-piikohse mihkwam kii-piiko-hse mihkwam PAST-break-INTR ice 'The ice broke.'
- f. Kiishkimansiiwaapoo nikii-ontihse onaako kishkimansiiwaapoo ni-kii-ont-hse onaako Kingfisher Lake 1-PAST-from-INTR yesterday 'I came from Kingfisher yesterday.'
- g. Minohse niwaakaahkwat mino-hse ni-waakaahkwat be.good.INTR 1-axe 'My axe is good.'
- h. Memekohse otaapaan memeko-hse otaapaan shake-INTR car 'the car is shaking'

In fact, there is evidence that root-based *-hse* verbs are never inchoative, even those that seem to be inchoatives, such as *piikohse* 'break' in (159)e. This is demonstrated in the following examples with the adverbial *kiyaapac* 'still' and with reduplication. The adverbial *still* presupposes that the event has started before the reference time (Ippolito 2007) and, therefore, should not be compatible with verbs that denote punctual events. The process of reduplication in Ojibwe and Cree can have different affects on the meaning, depending on the verb type. With

stative verbs, reduplication gives an intensifying meaning 'very', while with dynamic/eventive verbs it adds progressive aspect (Hirose 2003, Ahenakew and Wolfart 1983). Both diagnostics with *kiyaapac* 'still' and with reduplication show that root-based *-hse*-verbs are not inchoative. In (160) the verb *piikohse* is compatible with *kiyaapac* 'still' in the same sentence, suggesting that its meaning here is stative 'be broken', and not the punctual/inchoative 'break'. In (161), reduplication on the verb *minohse* gives an intensifying meaning 'very', which is the expected result of reduplication with stative verbs.

(160) Kaawin cikii-pimaahkwepahikeyaan, osaam kiyaapac e-piikohsek nipimaahkwepahikanaahtik.

kaawin ci-kii-pimaahkwepahike-yaan osaam kiyaapac e-piko-hse-k not COMP-PAST-play.hockey.AI-1.CONJ because still COMP-break-INTR-CONJ

ni-pimaahkwepahikanaahtik 1-hockey.stick

'I can't play hockey because my hockey stick is still broken.'

(161) Kihci-maaminohse niwaakaahkwat kihci-maa-mino-hse ni-waakaahkwat very-redup-good-INTR 1-axe 'My axe is really good.'

Thus, *-hse* acts as an inchoative when it attaches to stems but not when it attaches to roots. What is its contribution then when it attaches to roots? It is interesting to compare the contribution of *-hse* to that of other unaccusative suffixes. A minimal pair is given in (162). The verbs *oncii* and *ontihse* are built with the same root. In (162)a the verb *oncii*, built with the suffix *-ii* (discussed in §3.3.2) appears to be a static unaccusative. That is, *oncii* 'be from a certain place' describes a state, a particular property of the speaker. By contrast, the verb *ontihse* in (162)b, built with the suffix *-hse*, appears to be a dynamic unaccusative, 'arrive from a certain

place'. That is, it describes a dynamic (in this case, a punctual) event of arriving from a certain place.

- (162) a. Kiiishkimansiiwaapoo nitoncii. kiishkimansiiwaapoo ni-oncii Kingfisher Lake 1-be.from.AI
   'I am from Kingfisher Lake (i.e. my place of origin).'
  - Kiishkimansiiwaapoo nikii-ontihse onaako kishkimansiiwaapoo ni-kii-ont-hse onaako Kingfisher Lake 1-PAST-come from.AI yesterday 'I came from Kingfisher Lake yesterday.'

It appears from these minimal pairs that -ii is inherently stative while -hse is inherently dynamic. This being the only difference between the two suffixes, I propose that they occupy the same position structurally: thus, they are both v's that introduce an internal argument. The structure for a stem built with -hse is given in (163):

(163) ontihse ont-hse ont-AI'come from a certain place'



Note that while this structure represents cases where *-hse* attaches to roots, there are still verbs built with *-hse* attached to a stem rather than a root. It remains to be determined how to represent stem + hse verbs structurally, and what position *-hse* occupies in those cases. As discussed above, these are inchoatives.

I do not have a proposal regarding the meaning of *-hse* at the moment, but would like to suggest a possible direction based on a similarity between *-hse* and an auxiliary verb in Brazilian

Portuguese. The verb in question is *ficar* which, according to Schmitt (2005), acts as an inchoative 'become' with property denoting predicates, as in (164) (Schmitt's (1c), but is translated as 'stay' with locatives, as in (165) (Schmitt's (2c)):<sup>47</sup>

- (164) Maria fica bonita.'Maria becomes pretty.'
- (165) Aquele livro fica aqui. 'That books stays here.'

Thus, like *-hse*, the verb *ficar* can be inchoative in some contexts, but simply (dynamic/stage-level) unaccusative in others. I suspect that a further investigation and the comparison of the *ficar* and *-hse* facts will lead to a better understanding of these morphemes, but the issue is outside the scope of this thesis.

### 3.6 Conclusion

In this chapter I have examined a subset of the Ojicree verbal heads. I have followed the view that verbal heads in Algonquian are argument introducers (O'Meara 1990 for Delaware, Ritter and Rosen 2010 for Blackfoot), as opposed to lexical aspect markers (Denny and Mailhot 1976, Denny 1977, 1978b, 1984), and have proposed structures for each of the three verb types: unergatives, unaccusative and transitive, testing the position of the argument with the help of the quantifier *caaki*- whenever possible.

The chapter raises many issues that will not be resolved in this thesis. I mention some of these here. First, although I have assumed that verbal suffixes in Ojicree are not aspect markers, no specific evidence was brought in favor of this view. Besides, one of the suffixes discussed (*-hse*) does appear to affect event structure in some cases. What does it mean for other suffixes?

<sup>&</sup>lt;sup>47</sup> I thank Elizabeth Cowper for pointing this similarity to me.

Does it mean that under a closer examination they can be shown to have the same effect? Or does it support the view that they do not affect event structure and -hse is the only one that does? Second, the meaning of the suffix -hse itself remains unclear. It acts as an inchoativizer when attaching to stems, but is a type of dynamic unaccusative (but not inchoative) when it attaches to roots. As pointed out at the end of §3.5, a comparison with similar morphemes in other languages might help shed light on the meaning of this suffix. Third, the (in)compatibility of various suffixes with the two root types remains an open question. While most suffixes are compatible with both weak and strong roots, at least two of the suffixes discussed, the transitive -*ih* and the unaccusative -*hse* display sensitivity to a root type: they cannot combine with weak roots. It is not clear at the moment where this sensitivity comes from and how to encode it. It is particularly mysterious in the case of *-ih*, which, as I argue in §3.4.1, selects for a vP, not a root. One common feature shared by these two suffixes is that they can both form secondary-derived verbs (verbs formed from existing verbs). Possibly, it is this feature that will help account for their sensitivity to root type. This chapter has just touched on various issues concerning a subset of verbal heads in Ojicree. The number of issues raised here call for a systematic study of the meaning of verbal heads in this language and related languages.

In this chapter I have discussed the structural properties of various suffixes and have laid the groundwork for a final analysis of stem structure to be developed in the next chapter. Using the insights gained here and the preliminary analysis developed in Chapter Two, we are now ready to tackle the issue of the left-edge requirement in complex stems and to develop the final analysis of stem structure in Ojicree.

# Chapter 4 The LER and event composition

In chapter 2 I argued for two important properties of complex stems. First, they are syntactic constructs: their structure is productive and compositional; the two parts of the stem are syntactic phrases. Second, they require overt material to the left of the root to form a full stem – the requirement that I refer to as the left-edge requirement (LER). In this chapter I investigate the nature of the left-edge requirement.

There are three logical possibilities. The LER might be phonological, structural or semantic. From a different perspective, this question has already been asked in the literature, and the first two possibilities have been explored. I will advocate the third option, which to my knowledge has not yet been considered, and will argue that the LER is a semantic requirement.

The chapter is organized as follows. In the next section (§4.1) I discuss preverbs (stem-external modifiers) and the question of the left-edge requirement from the perspective of the traditional literature. In §4.2 I make a general overview of the range of elements that can occupy the left-edge position and advance a preliminary proposal that the left-edge element fills a gap in the semantics of the weak root. In §4.3 I further argue that the LER has to do with event composition, propose final structures for complex stems and test some predictions of the proposal by focusing on the general restrictions on what can appear in the left-edge slot.

#### 4.1 Preverbs and the LER in the literature

The template for the verbal complex in the independent mode is repeated in (166). While the internal structure of the stem itself (in square brackets) is treated very differently in this thesis, I use the terminology of the traditional template for the rest of the verbal complex. Elements of
particular interest to us are the preverbs: those elements with adverbial meaning that appear between the tense marker and the stem (e.g. Valentine 2001):

(166) personal prefix – tense – preverb(s) – [stem initial – medial – final] – inflection

For instance, the preverb *wani-* 'wrong' can appear between the past tense marker *kii-* and the stem *nikamo* 'sing':

(167) Ni-kii-wani-nikamo.
 ni-kii-wani-[nikamo stem]
 1-PAST-wrong-sing.AI
 'I sang the wrong song.'

Preverbs are part of the same grammatical word as the stem, but form a separate phonological word, conforming to the minimal (bimoraic) size constraint found for phonological words in Ojibwe (Piggott 1974).<sup>48</sup> There can be more than one preverb in a stem. For our purposes, the most important property of preverbs is that they can also appear inside the stem, occupying the position of initial – a phenomenon that has been referred to as 'preverb bumping' (Goddard 1988, 1990) or 'preverb lowering' (Branigan et al. 2005). For instance, compare the example in (167) above to the one in (168). In (167) *wani-* attaches to an independent stem *nikamo* 'sing', while in (168) it combines with the concrete final *-piso* 'drive' and so is said to occupy the position of initial inside the stem. In general, whenever a preverb combines with morphologically bound material, it automatically falls into the 'initial' slot.

(168) Wanipiso

 [wani-[piso] stem]
 wrong-drive.AI
 'S/he is driving in the wrong direction.'

<sup>&</sup>lt;sup>48</sup> To my knowledge, there is only one preverb that violates the minimal size constraint: the monosyllabic preverb pi- 'hither'.

The stem in (168) is complex, so the preverb *wani*- occupies the stem-internal modifier position, satisfying the LER for *-piso*. Now the question of what motivates the LER can be asked from a different angle. Namely, what is the difference between constructions where a preverb appears as a stem-external modifier (167) and those where it appears stem-internally, satisfying the LER (168)? This is precisely how the question has been tackled in the literature, with a crucial caveat that the traditional literature does not distinguish simple from complex stems. The authors who discuss the LER assume that it applies to all stems. In traditional terms, the root in simple stems and the left-edge element in complex stems are both initials, and are the result of the left-edge requirement.

Goddard's (1990) proposal that every stem must have an initial is the source of the idea of the LER as it is seen in the traditional literature. It has been generally agreed that the meaning of the preverb does not change when it 'lowers' into the initial position, and that its semantic contribution is the same in both cases (Branigan et al. 2005, Dahlstrom 2000, Goddard 1988). Hence the two views that are advocated in the literature is that the LER is phonological and/or structural, but not semantic.

Branigan et al. (2005) propose that preverbs lower into the 'initial' slot for prosodic reasons: to satisfy the minimal size constraint. In their discussion, they do not distinguish between different types of stems but assume the traditional initial-medial-final template. The minimal phonological word in Ojibwe must contain a long vowel or two short vowels (Piggott 1974). As the following examples clearly show, in many cases the weak root (bolded) alone does not satisfy this requirement (I assume that the v is null in these examples).

(169) a. ompiki [ompi-ki stem] up-grow.AI 'grow up'

- b. Aniihshinaapemo [aniihshinaape-mo<sub>stem</sub>]
   Ojibwe.person-speak.AI
   'speak Ojibwe/Ojicree'
- c. Maacihse [maacii-**hse** stem] away-**fly.AI** 'fly away [e.g. bird]'

In these cases, the presence of the left-edge element enables the stem to satisfy the minimal size constraint. However, this cannot be the only reason for the appearance of the left-edge element. In many cases, the stem-internal domain in complex stems does satisfy the minimal size constraint on its own. Compare the bolded elements in (170) and (171). The (a) examples are complex stems, and the bolded element is the combination of the weak root (ROOT<sub>w</sub>) and the *v*. The (b) examples are simple stems (ROOT<sub>s</sub> + *v*). Here we see that the ROOT<sub>w</sub> + *v* (concrete final, in traditional terms) can have the same prosodic weight as a full stem. In both cases, the minimal (bimoraic) size constraint is satisfied.

| (170) | a. | Minomaakosi.<br>[mino-[ <b>maako-si</b> <sub>v</sub> '] <sub>stem</sub> ]<br>well- <b>smell-AI</b><br>'S/he smells nice.'   | (*maakosi)  |
|-------|----|---|-------------|
|       | b. | Naakosi.<br>[ <b>naako-si</b> <sub>stem</sub> ]<br><b>visible-AI</b><br>'S/he is visible'   |             |
| (171) | a. | Nicaakikwaataanan mahkisinan.<br>ni-[caaki-[ <b>kwaa-taan</b> $_{\nu}$ ,] <sub>stem</sub> ]-an mahkisin-an<br>1- all- <b>sew-TI</b> -PL shoe-PL<br>'I have sewn all the moccasins.' | (*kwaataan) |
|       | b. | Nkii-kaatoon shiiwyaahiin.<br>ni-kii-[ <b>kaatoon</b> <sub>stem</sub> ]-an shiiwyaahii-n<br>1-PAST- <b>hide-TI</b> -PL candy-PL<br>'I haye hidden the candies.'                     |             |

If the LER were a purely phonological constraint, the left-edge element would be obligatory in all the stems in (169), but not in (170)a and (171)a. However, it is obligatory in all these cases. Thus, we can rule out the possibility that the LER is a phonological requirement.

Another plausible option is that the LER is structural. This seems to be the position taken by Dahlstrom (2000) and Goddard  $(1988)^{49}$ . Both these authors consider the difference between the two constructions to be completely arbitrary. Goddard (1988) specifically argues that the choice between the combinations initial + final and preverb + stem "to express a given concatenation of elements is [...] morphologically determined, rather than based on syntactic and semantic factors."

Again, these authors talk about all verb stems, so the concept of the LER is very different here. But for the purposes of the discussion, let us imagine how the structural view applies under the view of the left-edge requirement proposed here. Indeed, it seems very plausible that the LER is a structural constraint. Chapter 2 was devoted to justifying the similarity between concrete finals and full stems, in that both are syntactic constructs. The structural hypothesis is also supported by minimal pairs such as the ones presented immediately below. The (a) examples here are preverb + full stem combinations, while the (b) examples are complex stems. The bolded constituents in the (a) and (b) examples have identical meanings, with the only difference being that those in (b) have to be preceded by a modifier, while in (a) modifiers are optional because the bolded constituent is a full stem.

<sup>&</sup>lt;sup>49</sup> More recently, within the Minimalist framework, Mathieu (2007) also argues that the LER is a structural constraint akin to the EPP (Extended Projection Principle), a requirement of a functional head to have an overt specifier (Chomsky 1995, Holmberg 2000). Unlike previous authors, he does not talk about the difference in the position of preverbs, but seems to use the idea of the LER to explain why lexical material raises to the position to the left of the verbal head in Ojibwe (he assumes that Ojibwe is head initial).

| (172) | a. | Mino-nikamo.<br>mino-[ <b>nikamo</b> stem]<br>well-sing.AI<br>'S/he sings well.'                               | preverb + stem | nikamo   |
|-------|----|--|----------------|----------|
|       | b. | Minohamaaso.<br>[mino-[ <b>hamaaso</b> <sub>v'</sub> ] <sub>stem</sub> ]<br>well-sing.AI<br>'S/he sings well.' | complex stem   | *hamaaso |
| (173) | a. | Mino-niimi.<br>mino-[ <b>niimi</b> stem]<br>well-dance.AI<br>'S/he dances well.'                               | preverb + stem | niimi    |
|       | b. | Minoshimo.<br>[mino-[ <b>shimo</b> <sub>v</sub> '] <sub>stem</sub> ]<br>well-dance.AI<br>'S/he dances well.'   | complex stem   | *shimo   |

Based on these minimal pairs one could easily conclude that the left-edge requirement exemplified in the (b) examples is indeed a purely structural constraint, an arbitrary property of weak roots that they must be preceded by some overt material. Indeed, this is the view that I endorse in the previous work (Slavin 2009, to appear).

In the remainder of the chapter I will argue that the LER is not a purely structural requirement, but rather is semantically motivated. Weak roots are semantically deficient elements and require a complement. Thus, I argue that the apparent identity of meanings in (172) and (173) is illusory, and the weak roots in the (b) examples actually differ in meaning from the full stems in the (a) examples. That is, they mean 'dance' and 'sing' but have a certain gap in their meaning. The left-edge element is there to fill this gap.

# 4.2 The LER is a semantic constraint

Some left-edge elements were discussed in chapter 2 as part of the argument for a syntactic approach to stem formation. Here I make a more general overview. I also demonstrate that each root has a very specific set of semantic constraints on what can and cannot appear in its left-edge slot, suggesting that the LER is a semantic requirement.

I focus on a small sample of roots and examine the possible relation between the root and the left-edge element for each of them, as well as any specific restrictions. Although a close investigation into the relation between each weak root and left-edge elements that can appear with it would provide important insights into the nature of the Algonquian verb, it is not possible to conduct such an examination here. Instead, I aim at a general overview.

I divide the roots to be examined into two groups: (i) those whose left-edge requirement is very specific and which readily support the hypothesis that the LER is a semantic constraint; and (ii) those like (172)b and (173)b) whose meaning is superficially very similar to the meaning of some simple stems, and whose LER is less restricted. The second group, in particular, seems to challenge the semantic hypothesis.

#### 4.2.1 Roots with a very specific LER

I discuss here five weak roots all of which are very particular about what can appear in their left-edge position: *-mo* 'speak a language', *-kiishiwe* 'speak', *-nehkwe* 'have a meal', *-hkaa* 'lots of', and *-hkaaso* 'pretend'.

The element *-mo* ('speak X language', according to Valentine 2001) can take on its left edge only a noun referring to the name of a people, as in the following examples. Thus, its meaning is more appropriately glossed as 'speak the language of X' or 'speak like X'. Notice

also that it is quite productive: for instance, it can combine with names of animals to form names of imaginary languages, as in (174)f. However, as (175)b below demonstrates, borrowed nouns are not easily accepted here.

# (174) grammatical with -mo

| a. | aniihshinaapemo<br>aniihshinaape-mo<br>ojicree.man-speak.AI<br>'S/he speaks Ojicree.'            | Aniihshinaape 'Ojicree person'                          |
|----|--|---|
| b. | Ojibwemo<br>ojibwe-mo<br>ojibwe-speak.AI<br>'S/he speaks Ojibwe.'                                | <i>Ojibwe</i> 'Ojibwe person'                           |
| C. | aganaahshiimo<br>aganahshii-mo<br>french.man-speak.AI<br>'S/he speaks French.'                   | akanaahshii 'French man'                                |
| d. | wemihtkooshiimo<br>wemihtikooshi-mo<br>white.person-speak.AI<br>'S/he speaks English.'           | <i>wemihtikooshi</i> 'English/white man'                |
| e. | mayakwehsiimo<br>mayakwehsii-mo<br>overseas.person-speak.AI<br>'S/he speaks one of the languages | <i>mayakwehsii</i> 'overseas person'<br>from overseas.' |
| f. | pinehshihshimo<br>pinehshihsi-mo<br>bird-speak.AI<br>'S/he speaks a bird language.'              | pinehshiihsh 'bird'                                     |

The data in (175) illustrate some elements that cannot satisfy the LER with *-mo*. Apparently, borrowed nouns are not easily accepted (175)b, nor is the noun 'language' grammatical here (175)a. Manner modifiers or quantifier such as *many* cannot appear here either (175)c-(175)e.

| (175) | a. | *ishikiishiwewimo<br>ishikiishiwewi-mo<br>language-speak<br>intended: 'speak a certain language'  | ishikiishiwewin 'language'       |
|-------|----|---|----------------------------------|
|       | b. | *Russian(i)mo<br>russian-mo<br>Russian-speak.AI<br>intended: 'S/he speaks Russian/ the languag  | <i>Russian</i><br>e of Russians' |
|       | C. | *Mihshiinomo kiishiwewinan<br>mihshiino-mo kiishiwewin-an<br>many-speak.AI language-PL<br>intended: 'S/he speaks many languages.'                     | mihshiino 'many'                 |
|       | d. | *Nihtaawimo aniihshinaapemowin<br>nihtaawi-mo aniihshinaapemowin<br>good.at-speak.AI ojicree.language<br>intended: 'S/he is good at speaking Ojicree. | <i>nihtaawi</i> 'good at'        |
|       | e. | *Pehkaacimo aniihshinaapemowin<br>pehkaaci-mo aniihshinaapemowin<br>slowly-speak.AI ojicree.language<br>intended: 'S/he speaks Ojicree slowly.'       | <i>pehkaaci</i> 'slow'           |

These restrictions show that *-mo* does not simply mean 'speak' or even 'speak a certain language' but rather very specifically 'speak the language of \_\_\_\_' with the left-edge element filling the gap by supplying a name of a people (or another group of living beings, as in (174)f). Given this meaning, it is not clear why (175)b is ungrammatical, but it might be due to a restriction that borrowed nouns are not allowed here. This is not a general restriction. As we will see shortly, some weak roots do combine with borrowed nouns on their left edge.

Another weak root with a very specific left-edge requirement is *-kiishiwe* 'speak/use language'. Although its meaning is somewhat similar to *-mo*, its left-edge requirement is quite different, with *-kiishiwe* admitting a wider range of elements than *-mo* does. It is most commonly used with the relative preverb *ishi-* 'such/thus' (e.g. (176)a - (176)e) which links to something in the sentence, either the name of a language or a phrase that contains reference to a particular

language. Other elements that can productively appear on the left-edge of *-kiishiwe* are names of specific languages (176)f, nouns referring to names of species, (176)g, and even location *a*Ps (176)h. Unlike *-mo*, *-kiishiwe* may appear with the quantifier *mihshiini-* 'many', and with manner adverbials (176)i. The combination with manner adverbials *maci-* and *mino-* yield verbs with the meaning 'use language in a certain way'.

(176) grammatical with -kiishiwe 'speak/use language, AI'

- a. Waapoosink ishikiishiwe. waapoos-ink ishi-kiishiwe rabbit-LOC thus-speak.AI 'Speak like a rabbit.'
- b. Niwii-kakwe-inehtamaake kaa-ishikiishiweyaan.
   ni-wii-kakwe-inehtamaake kaa-ishi-kiishiwe-yaan
   1-VOL-try-translate.AI that-thus-speak.AI-1CONJ
   'I wanna translate it into my language.'
- c. E-nanaahko-ishikiishiwec. e-nanaahko-ishi-kiishiwe-c COMP-many-thus-speak.AI-3CONJ 'S/he speaks many languages.'
- d. Hebrew ishikiishiwe. Hebrew ishi-kiishiwe Hebrew thus-use.language.AI 'S/he speaks Hebrew.'
- e. Kahkina ishikiishiwewinan ishi-kiishiwe kahkina ishikiishiwewin-an ishi-kiishiwe. all language- PL thus-use.language.AI 3 'S/he speaks all the languages.'
- f. Aniihshinaapemowikiishiwe. aniihshinaapemowi-kiishiwe ojicree.language-use.language.AI 'S/he speaks Ojicree.'
- g. Pinehshiihshikiishiwe.
  pinehshiihshi-kiishiwe
  bird-use.language.AI
  'S/he speaks a bird language / like a bird.'

- h. Akaamikihcikaamikiishiwewin otaapacihtoon. akaamikihcikami-kiishiwe-win o-aapacihtoon across.the.ocean-use.language.AI-NMZ 3-use.TI 'S/he uses an across-the-seas language.'
- Mihshiinikiishiwe.
   mihshini-kiishiwe
   many-use.language.AI
   'S/he speaks many languages.'
- j. Macikiishiwe. maci-kiishiwe bad- use.language.AI 'S/he uses bad language (swears).'
- k. Minokiishiwe. mino-kiishiwe good- use.language.AI 'S/he uses good language (i.e. does not swear.)'

However, some specific restrictions on -kiishiwe are similar to those for -mo. It cannot

take adverbials such as 'slowly' or elements meaning 'try ' or 'good at':

(177) ungrammatical with *-kiishiwe*:

- a. \*Aniihshinaapemowin kakwecikiishiwe. aniihshinaapemowin kakweci-kiishiwe ojicree.language try-use.language.AI 'She is trying to speak Ojicree.'
- \*Aniihshinaapemowin nihtaawikiishiwe.
   aniihshinaapemowin nihtaawi-kiishiwe
   ojicree.language good.at-use.language.AI
   'S/he is good at speaking Ojicree.'
- c. \*Aniihshinaapemowin pehkaacikiishiwe. aniihshinaapemowin pehkaaci-kiishiwe ojicree.language slow-use.language.AI 'S/he speaks Ojicree slowly.'

Again, these very specific restrictions suggest that the left-edge element fills a gap in the meaning of the weak root.

Another weak root with very specific requirements is *-nehkwe* 'have a meal'. It combines only with time adverbials to form verbs that refer to meal times. In fact, it appears that it can only form the four stems for four meals of the day:

- (178) a. kishepaanehkwe kishepaa-nehkwe in.the.morning-have.meal.AI 'S/he is having breakfast.'
  - b. naawakwenehkwe. naawakwe-nehkwe mid.day-have.meal.AI 'S/he is having lunch.'
  - c. onaakohshinehkwe onaakohshi-nehkwe evening-have.meal.AI 'S/he is having dinner.'
  - d. kawehshimonehkwe kawehshimo-nehkwe before.bed-have.meal.AI 'S/he is having dinner/supper.' (last meal before bed)

It cannot combine with other time adverbials (compare(179)a and (178)a), nor can it refer to

specific meals such as Chrismas dinner (179)c or combine with other types of adverbials.

| (179) | a. | *niipaanehkwe<br>niipaa-nehkwe<br>at.night-have.meal.AI<br>intended: 'have a night meal.'  |   |
|-------|----|--|---|
|       | b. | *tipihkinehkwe<br>tipihki-nehkwe<br>night-have.meal.AI<br>intended: 'have a night meal'  | (cf. <i>tipihki-piihsim</i> 'moon', lit. 'night sun') |
|       | c. | *makohshe-kiishikawinehkwe<br>makohshe-kiishikawi-nehkwe<br>feast- day-have.meal<br>intended: 'have a Christmas day mea<br>(cf. <i>maakohshe-kiishikawi-piihsim</i> 'f | ıl'<br>`east day month' (i.e. December))              |

- d. \*pwaahtawinehkwe pwaahtawi-nehkwe late-have.meal.AI intended: 'have a late meal'
- e. \*minonehkwe mino-nehkwe good-have.meal.AI intended: 'have a good meal / enjoy the meal.'

The weak root *-hkaaso* 'pretend' requires a verb stem or a noun stem on its left edge, and forms a verb with the meaning 'pretend to X' or 'pretend to be an X'. The *n*P or *v*P on the left edge can itself be complex and can even include its own stem-external modifiers (e.g. (180))f - (180)h). Moreover, the left-edge element can even be a transitive stem, in which case it has its own agreement morphology, as in (180)i and (180)j. In this latter property *-hkaaso* seems to be exceptional because transitive stems cannot normally be embedded (Rhodes 1976).

(180) grammatical with -hkaaso 'pretend'

- a. anohkiihkaaso anohkii-hkaaso work.AI-pretend.AI 'S/he pretends to work.'
- b. minwentamohkaaso minwentamo-hkaaso be.happy.AI-pretend.AI 'S/he pretends to be happy.'
- c. nipaahkaaso nipaa-hkaaso sleep.AI-pretend.AI 'S/he pretends to sleep.'
- d. waapoosihkaaso waapoosi-hkaaso rabbit-pretend.AI 'S/he pretends to be a rabbit.'

- e. waapoosiwihkaaso waapoosi-wi-hkaaso rabbit-be.AI-pretend.AI 'S/he pretends to be a rabbit.'
- f. Kihci-oshaawashko-mihsawe-omahkahkiihkaaso. kihci-oshaawashko-mihsawe-omahkahkii-hkaaso big- yellow- hairy- frog- pretend.AI 'S/he is pretending to be a big hairy yellow frog.'
- g. Kwenawii-ishi-nipaahkaaso. kwenawii-ishi-nipaa-hkaaso no.place-there-sleep.AI-pretend.AI 'S/he pretends that s/he has no place to sleep.'
- h. Pihci-wani-tootamohkaaso pihci-wani-tootam-hkaaso

accidentally-in.error-do.AI-pretend.AI 'S/he pretends that s/he made a mistake by accident.'

- i. Kwenawenimaahkaaso kwenawenim-aa-hkaaso miss.TA- 1>3-pretend.AI 'S/he pretends that s/he misses him/her.'
- j. Nikii-wiitanohkiimaahkaaso ni-kii- wiitanohkiim- aa- hkaas 1-PAST-work.with.TA-1>3-pretend.AI 'I pretended that I work with him/her.'

Although *-hkaaso* is quite productive in its ability to combine with noun and verb stems, it is not able to combine with other types of items, suggesting that *-hkaaso* does not simply mean 'pretend' but 'pretend to be an X' or 'pretending to be Xing'. For instance, it cannot combine with elements such as *pooni-* 'stop' and *nihtaa-* 'good at', even when there is a free-standing nominal that could be the complement of *-hkaaso*:

- (181) ungrammatical with -hkaaso
  - a. \*Poonihkaaso omahkahkiink.
     pooni-hkaaso omahkahkii-nk
     stop-pretend.AI frog-LOC
     intended: 'S/he stopped pretending (to be a frog).'
  - \*Nihtawihkaaso (omahkahkiink) nihtaawi-hkaaso (omahkahkii-nk) good.at-pretend.AI frog-LOC intended: 'S/he is good at pretending (to be a frog).'

The last element to be discussed is *-hkaa* 'abundance of', apparently built from a weak root *-hk-* and a II suffix *-aa*. Verbs formed with *-hkaa* have the meaning 'there is lots of X' with a nominal stem specifying X on its left edge. The nominal can be complex as in (182)e, including a modifier.

(182) grammatical with *-hkaa* 'abundance of'

- a. waapoosihkaa waapoosi-hkaa rabbit-lots.II 'there are a lot of rabbits.'
- b. sakimehkaa sakime-hkaa mosquito-lots.II 'there are a lot of mosquitos.'
- c. waakaahkwatihkaa waakaahkwati-hkaa axe-lots.II 'there are a lot of axes.'
- d. Naapehkaa kaa-ishi-pimaahkwepahikaanowank naape-hkaa kaa- ishi-pimaahkwepahik-aanowank man-lots.II COMP-where-play.hockey.AI-II 'There is a lot of men at the hockey arena.'
- e. Kihci-ihkwehkaa mashkihkiiwikamikonk. kihci-ihkwe-hkaa mashkihkiiwikamik-onk old-woman-lots.II nursing.station-LOC 'There are lots of old ladies in the nursing station.'

f. Aasha ani-maacii-mahiinkanihkaa kaa-ani-takwaakink. aasha ani-maacii-mahiinkani-hkaa kaa- ani- takwaakin-k. already INCH-start- wolf- lots.II COMP-INCH-be.fall.II-CONJ 'Now that the fall is coming there are lots of wolves.'

While any nominal can satisfy the LER with *-hkaa*, other elements cannot appear in this position. Thus, for instance, place adverbials, the aspectual 'stop' and degree modifiers are ungrammatical here.

#### (183) ungrammatical with -hkaa

- a. \*Miisiwehkaa waapoosook.
   miisiwe-hkaa waapoos-ook
   everywhere-lots.II rabbit-PL
   intended: 'There are lots of rabbits everywhere.'
- Poonihkaa waapoosook.
   pooni-hkaa waapoos-ook
   stop-lots.II rabbit-PL
   intended: 'There stopped being lots of rabbits.'
- c. \*Osaamihkaa waapoosook. osaami-hkaa waapoos-ook too.much-lots.II rabbit- PL intended: 'There are too many rabbits.'

In this section I have looked at some weak roots that are very selective about what can appear on their left-edge. Importantly, provided that the constraint is satisfied, the choice of left-edge element is completely free. The semantically specific restrictions suggest that the LER is a semantic requirement. In this next section I will discuss more data that further support this conclusion. I will discuss a group of weak roots that are not as selective about their left-edge material as the ones just discussed, and whose meanings are more similar to that of full stems. Nevertheless, I will show that they too have a gap in their semantics that the left-edge element fills.

# 4.2.2 Roots with a more general LER

The weak roots to be discussed here are more specified in their meaning than the ones discussed in the previous section. That is, for each of the concrete finals *-hamaaso* 'sing', *-shimo* 'dance', *-pahtoo* 'run' and *-taapaan* 'drive s.o.' there is a full stem with a seemingly identical meaning, with the difference that these elements have the LER, but the apparently semantically identical stems do not have this requirement. Thus, it is for these weak roots (concrete finals) that the question of the difference between a final and a stem (or between a preverb and an initial) is the most relevant. These elements threaten the hypothesis that the LER is a semantic requirement because the range of elements that can satisfy the LER with these roots is much broader than with the roots discussed in the previous section. Nevertheless, we will see that there are stem-specific constraints that suggest that the primary role of the left-edge element is to fill a gap in the semantics of the weak root.

Consider the weak root *-hamaaso* 'sing'. It can combine with a wide variety of adverbial elements (a-i), a relative preverb (j), a nominal referring to kind of song (k, l), aspectual or agentoriented elements (m, n), or a verb stem  $(o)^{50}$ . When the left-edge position is occupied by a verb stem, as in (o), it can be interpreted as a resultative or a depictive.

(184) grammatical with -hamaaso 'sing'

a. Papetahamaaso papeta-hamaaso slowly-sing.AI 'sings slowly'

<sup>&</sup>lt;sup>50</sup> Goddard (1990), p. 457, also notices that initials can be derived from verb stems (i.e. verb stems can occupy an initial position).

- b. Kishiihamaaso kishii-hamaaso fast- sing.AI 'S/he sings fast.'
- c. Minohamaaso mino-hamaaso well- sing.AI 'S/he sings well.'
- d. Pimihamaaso pimi-hamaaso along- sing.AI 'S/he sings while walking.'
- e. Maamawihamaasowak ihkwewak. maamawi-hamaaso-wak ihkwe-wak together- sing.AI-3PL woman-PL 'The ladies are singing together.'
- f. Miisiwe tepwehamaasowak ihkwewak. miisiwe tepwehaamaaso-wak ihkwe-wak everywhere ??- sing.AI-3PL woman-PL 'The ladies are heard singing everywhere.'
- g. Kii-nikamo minikohk kaa-tepihamaasoc.
  kii-nikamo minikohk kaa- tepi- hamaaso- c
  PAST-sing.AI until COMP-enough-sing.AI-3CONJ
  'S/he sang until s/he was tired (lit. until s/he sang enough)
- h. Awiya piitewihamaaso.
  awiya piitewi-hamaaso
  somebody hither- sing.AI
  'Somebody is coming here and singing at the same time.'
- Wanihamaaso.
   wani-hamaaso
   wrong- sing.AI
   'S/he is singing the wrong song.'
- j. Pinehshiihshink ishihamaaso. pinehshiihsh-ink ishi-hamaaso bird-LOC thus- sing.AI 'S/he sings like a bird.'

- k. Mahkatewiyaahsihamaaso. mahkatewiyaaahsi-hamaaso black.man-sing.AI 'S/he is singing a rap song.'
- Oshkiniikiwi-nikamowihamaaso. oshkiniikiwi-nikamowi-hamaaso young.person-song-sing.AI 'S/he is singing a pop-song.'
- m. Ketahtawin kii-poonihamaaso. ketahtawin kii-pooni-hamaaso suddenly PAST-stop- sing.AI 'S/he suddenly stopped singing.'
- n. Kakwetahamaaso kakwet-ahamaaso try- sing.AI 'S/he is learning to sing.'
- Kii-nipehamaaso ihkwesenhs.
   kii- nipe- hamaaso ihkwesenhs
   PAST-sleep.AI- sing.AI girl
   'The girl sang until she fell asleep' / 'The girl sang in her sleep.'

In (185) are examples of elements that cannot combine with -hamaaso. Place adverbials

are not compatible with it, nor can it combine with a nominal to mean 'sing like X'. Notice that

(185)c shows that not all verb stems are grammatical in this position (cf. (184)o). More research

is needed to understand why some stems are grammatical here and some are not.

(185) ungrammatical with -hamaaso 'sing'

- a. \*Miisiwehamaasowak ihkwewak. miisiwe- hamaaso-wak ihkwe-wak everywhere-sing.AI-3PL woman-PL intended: 'The ladies are (heard) singing everywhere.'
- Pinehshiihshihamaaso.
   pinehshiihshi-hamaaso
   bird- sing.AI
   intended: 'S/he sings like a bird.'

c. \*Pimohsehamaaso. pimohse-hamaaso walk.AI-sing.AI 'S/he sings while walking.'

The weak root *-shimo* 'dance' is also quite permissive in what it allows on its left edge. Like *-hamaaso* 'sing' above, it combines with adverbial elements (a-e), but unlike *-hamaaso*, it can also combine with nominals to mean 'dance like X', even with borrowed nouns (f, h). In addition, it can combine with full *v*Ps that can have a resultative or a depictive meaning (k, m).

- (186) grammatical with -shimo 'dance'
  - a. pimishimo pimi-shimo along-dance.AI 's/he is dancing.'
  - b. minoshimo mino-shimo well-dance.AI 'S/he dances well.'
  - c. Kii-wanishimo.
     kii-wani-shimo
     PAST-wrong- dance.AI
     'S/he went in the wrong direction while dancing (e.g. a square dance)'
  - d. Kakwecishimo kakweci-shimo learn-dance.AI 'S/he is learning how to dance.'
  - e. Maaciishimo. maacii-shimo start- dance.AI 's/he started dancing.'
  - f. Kii-ojicreewihshimo. kii-ojicreewi-hshimo PAST-ojicree- dance.AI 'S/he danced like an Ojicree person.'

- g. Kii-aniihshinaapewihshimo kii-aniihshinaapewi-hshimo PAST-native.person- dance.AI 'S/he danced like a native person.'
- h. Kii-russianiihshimo. kii- russianii-hshimo PAST-russian-dance.AI 'S/he danced like a Russian.'
- Pahsakwaapihshimo.
   pahsakwaapi-hshimo
   shut.eye??- dance.AI
   'dance with one's eyes closed' (do a shut-eye dance)
- j. Kii-poonishimo. kii-pooni-shimo PAST-stop- dance.AI 'S/he stopped dancing.'
- k. Kii-kiiwaashkweyaapishimo.
  kii-kiiwaashkweyaapi-shimo
  PAST-be.dizzy.AI-dance.AI
  'S/he danced until she was dizzy / while she was dizzy.'
- Kii-pahkopiihshimo. kii-pahkopii-hshimo PAST-into.water??- dance.AI 'S/he danced into the water (e.g. danced on the shore and accidentally got into the water'
- m. Kii-tewisitehshimo.
   kii-tewisite-hshimo
   PAST-have.sore.feet.AI- dance.AI
   'S/he danced until his feet were sore.'

Here is a short sample of elements that cannot satisfy the LER for -shimo:

# (187) ungrammatical with -shimo

a. \*Kiimoocishimo kiimooci-shimo secretely-dance intended: 's/he is dancing secretly.'

- b. \*Kwenawiishimo kwenawii-shimo no.place- dance.AI intended: 'S/he has no place to dance.'
- c. \*Kishepaashimo kishepaa-shimo in.the.morning- dance.AI intended: 'S/he dances in the morning.'

Another element that is quite general in what it allows on its left edge is *-pahtoo* 'run, hurry'. As with *-shimo* and *-hamaaso* just discussed, manner and directional adverbials are the most common here, as in (188)a - (188)d. *-Pahtoo* also productively combines with verb stems, in which case the resulting stem means 'hurry to do X / do X quickly, as in (188)e - (188)j. A resultative interpretation is aso possible, as in (188)i and (188)k, but a depictive one is not (188)j.

# (188) -pahtoo

- a. Pimipahtoo. pimi-pahtoo along-run.AI 'S/he is running.'
- b. Kishiipahtoo. kishii-pahtoo fast-run.AI 'S/he runs fast.'
- c. Nihtaawipahtoo. nihtaawi-pahtoo know.how-run 'She knows how to run.'
- d. Piicipahtoo piici-pahtoo inside-run.AI 'S/he is running inside.'
- e. Piintikepahtoo. piintike-pahtoo enter.AI- run.AI 'run/hurry inside.'

- f. Wiihsinipahtoo wiihsini-pahtoo eat.AI-run.AI 'S/he eats quickly.'
- g. Anohkiipahtoo. anohkii-pahtoo work.AI- run.AI 'S/he runs/hurries to work.'
- h. Wii-ataawepahtoo. wii-ataawe-pahtoo VOL-buy.AI- run.AI 'S/he is gonna buy something quickly.'
- Nasipiipahtoo naasipii-pahtoo go.to.river.AI- run.AI 'S/he is running/hurrying to the river.'
- j. Nikii-nikamopahtoo ni-kii-nikamo-pahtoo
  1-PAST-sing.AI-run.AI
  'I sang quickly/hurried to sing.'
  \* 'I ran singing.'
- k. Nikii-tewisitepahtoo.
  ni-kii-tewisite-pahtoo
  1-PAST-sore.feet.have.AI-run.AI
  'I ran until my feet were sore.'

There are also some elements that cannot combine with *-pahtoo*. For instance, it cannot combine with a nominal that indicates direction of running, either with or without a locative suffix ((a) and (b)). Nor can it combine with a noun to mean 'run like X'.

(189) ungrammatical with -pahtoo:

a. \*Kii-ataawekamikonkpahtoo. kii-ataawekamikonk-pahtoo PAST-store.LOC- run.AI intended: 'S/he ran to the store.'

- b. \*Kii-ataawekamikopahtoo kii-ataawekamikw-pahtoo PAST-store-run.AI intended: 'S/he ran to the store.'
- c. \*Oshkiniikiwipahtoo. oshkiniikiwi-pahtoo young.man-run.AI intended: 'He runs like a young man.'
- d. \*Waapoosipahtoo. waapoosi-pahtoo rabbit-run.AI intended: 'S/he runs like a rabbit.'

For a fuller picture, consider the transitive element, *-taapaan* 'drive s.o.'. The LER for *-taapaan* 'drive s.o.' can be satisfied by a directional adverbial, as in (190)a - (190)e, a relative preverb linking to a locative adverbial in the same clause, as in (190)f and (190)g, a manner adverb, as in (190)h and (190)i, a type of aspectual adverbial, as in (190)j and (190)k, or an object-oriented *caaki*- (190)l. It can also combine with verb stems that receive a resultative interpretation, as in (190)m and (190)n.

- (190) a. Nipimi-taapaanaa nitootem
  ni-pimi-taapaan-aa ni-tootem
  1-along-drive.TA-1>3 1-friend
  'I am driving along with my friend.'
  - b. Niwii-papaamitaapaanaa nitootem ni-wii-papaami-tapaan-aa ni-tootem 1-VOL-around-drive.TA-1>3 1-friend 'I wanna drive around with my friend.'
  - c. Nikii-piicitaapaanaa ninicaanihsh ni-kii-piici-taapaan-aa ni-nicaanihsh 1-PAST-hither-drive.TA-1>3 1-child 'I drove my child here.'
  - d. Aasha nimaaciitaapaanaak ninicaanihshak aasha ni-maacii-taapaan-aak ni-nicaanihsh-ak already 1-off-drive.TA-1>3PL 1-child-PL 'I drove my kids away/off already.'

- e. Nikii-wanitaapaanaak awaashihshak ni-kii-wani-taapaan-aak awaashihsh-ak 1-PAST-wrong-drive.TA-1>3PL child-PL 'I drove the kids in the wrong direction.'
- f. Mekwaac nitishi-taapaanaak awaashihshak ishkoonoowikamikonk mekwaac ni-ishi-taapaan-aak awaahshihsh-ak ishkonoowikamik-onk meanwhile 1-to-drive.TA-1>3PL child-PL school-LOC 'I am driving the kids to school right now.'
- g. Weti nikii-onci-taapaanaak ishkonoowikamikonk weti ni-kii-onci-taapaan-aak ishkoonoowikamik-onk there 1-PAST-from-drive.TA-1>3PL school-LOC 'I picked them up from school.'
- h. Omatwe-taapaanaan awaashihshan ishkonoowikamikonk
  o-matwe-taapaan-aan awaashihsh-an ishkoonoowikamik-onk
  3-loud-drive.TA-3>3' child-PL.OBV school-LOC
  'S/he is heard driving the kids to school (e.g. her vehicle is very loud).'
- i. Nikii-peci-taapaanaa nitootem ni-kii-peci-taapaan-aa ni-tootem 1-PAST-slowly-drive.TR 1-friend 'I drove my friend slowly.'
- j. Nikiishitaapaanaak nikosihsak ishkoonoowikamikonk ni-kiishi-taapaan-aak ni-kosihs-ak ishkoonoowikamik-onk
   1-finish-drive.TA-1>3PL 1-son-PL school-LOC
   'I finished driving my kids to school.'
- k. Nitontamitaapaanaak awaashihshak ni-ontami-taapaan-aak awaahihsh-ak 1-busy-drive.TA-1>3PL child-PL 'I am busy driving the kids.'
- Aasha nicaaki-taapaanaak awaashihshak aasha ni-caaki-taapaan-aak awaashihsh-ak alrady 1-all-drive.TA-1>3PL child-PL 'I drove all the kids to school already.'
- m. Nikii-kiiwe-taapaanaa nitootem
   ni-kii-kiiwe-taapaan-aa ni-tootem
   1-PAST-go.home.AI-drive.TA-1>3 1-friend
   'I drove my friend home.'

n. Nikii-pahkopiitaapaanaa nitootem
 ni-kii-pahkopii-taapaan-aa ni-tootem
 1-PAST-fall.into.water.AI-drive.TA-1>3 1-friend
 'I drove my friend into the water.'

Among the things *-taapaan* cannot combine with are temporal adverbials and degree modifiers (191)a and (191)b, and verb stems that require depictive interpretation whether subject- or object-depective, as in (191)c and (191)d. Interestingly, to repair (191)c the consultant offered the causative *Nikii-kiwashkwepiih-aa* 'I made him drunk', which suggests that she was really trying to interpreted it as a resultative.

- (191) a. \*Ni-nihtaa-kishepaa-taapaanaak awaashihshak
   nihtaa-kishepaa-taapaan-aak awaashihsh-ak
   1-usually-in.the.morning-drive.TA-1>3PL child-PL
   intended: 'I usually drive the kids in the morning.'
  - \*Nikii-osaami-taapaanaa nitootem ni-kii-osaami-taapaan-aa ni-tootem 1-PAST-too.much-drive.TA-1>3 1-friend intended: 'I drove my friend (around) too much.'
  - c. \*Nikii-kiwashkwepitaapaanaa nitootem ni-kii-kiwashkwepi-taapaan-aa ni-tootem 1-PAST-be.drunk.AI-drive.TA-1>3 1-friend intended: 'I drove my friend drunk (i.e. I was drunk or he was drunk).'
  - d. \*Nikii-nikamotaapaanaa nitootem ni-kii-nikamo-taapaan-aa ni-tootem 1-PAST-sing.AI-drive.TA-1>3 1-friend intended: 'I drove my friend singing (i.e. I was singing or he was singing).'

As noticed earlier, for many of these weak roots there is a full stem with a very similar meaning. For instance, along with the weak roots *-hamaaso* 'sing' and *-shimo* 'dance' discussed in (184) and (186) above there exist (simple) stems *nikamo* 'sing' and *niimi* 'dance' with seemingly identical meanings (see also (184)g where *-hamaaso* and *nikamo* are used in the same sentence). However, I argue that their meanings are not the same. While the full stems can stand on their own, the weak root variants are missing some essential component of meaning, such as

the manner (e.g. (184)a to (184)e), result (e.g. (184)o, (186)l, (186)m) or some accompanying circumstance (e.g. (186)i), (186)k, (184)o) that the left-edge element supplies.

In addition, the full stems variants are not subject to the same constraints as their weak root counterparts. As shown in (192), the full stem *niimi* 'dance' can combine with three elements that the weak root *-shimo* 'dance' was shown not to be compatible with (see (187) above). The co-occurrence restrictions of weak roots with various left-edge elements will be discussed in more detail in the next section.

- (192) a. Kiimooci-niimi kiimooci-niimi secretly-dance.AI 'S/he is dancing secretly.'
  - b. Kwenawii-niimi kwenawii-niimi no.place-dance.AI 'S/he has no place to dance.'
  - c. Kishepaa-niimi kishepaa-niimi in.the.morning-dance.AI 'S/he dances in the morning.'

It appears that for a deeper understanding of the nature of the left-edge requirement, it is necessary to conduct a systematic comparison of weak root - stem pairs such as the ones discussed above. Such complete comparison is not possible to do in the context of this work. However, what I hope to have shown in this section is that the LER is a semantic requirement. Weak roots are semantically deficient elements, and the left-edge element fills a gap in their meaning. At this point we have only a vague understanding of what is it that weak roots are missing, but some more will be said on this in §4.3. The next section will summarize the findings so far and will propose new structures that reflect the idea that the LER is a semantic requirement.

#### 4.2.3 Towards an analysis

I have reviewed here the range of elements that can appear in the left-edge position. Although weak roots differ on how restricted their LER is, with all roots it appears that the requirement is semantic rather than phonological or structural. With some roots this is self-evident: for instance, *-nehkwe* 'have a meal' requires a specific time of day to form a verb referring to one of the meals of the day. With other ones like *-hamaaso* 'sing' it is less obvious, but even these ones, I suggest, do not really mean what the corresponding verb stem means, e.g. 'sing' but have a gap in their semantics that the left-edge element fills. The important take-home message at this point is that the generalization about what is/isn't possible in each case is a semantic one.

Many questions raised by the data presented in this section must await future research. For instance, it appears that resultative interpretation of a verb stem in the left-edge position is often favored over a depictive interpretation, as in (188)i, (188)j, (188)k, (191)c, although the depictive reading is possible with some stems (for instance, (184)o, (186)k). It is a question for future research whether it reflects some systematic restriction and can shed some more light on the nature of the LER.

Needless to say, the discussion in this section does not cover all possible relations between the root and the left-edge element, but it is a beginning of a study in that direction. The crucial point is that the relation is semantic.

Based on the data discussed here we can start developing an analysis of the LER. Recall the preliminary structure for a complex stems proposed in Chapter 2. This structure reflects the intuition that the complex stem is comprised of two syntactic phrases, but says nothing about the relationship between the root and the left-edge element, or where the LER comes from.

(193) Complex stem (preliminary structure from Chapter 2)

maaciipahtoo maacii-pah-too away-run-AI 'S/he is running away.'



I have suggested, based on the data reviewed here, that weak roots are semantically deficient elements and that left-edge material fills a gap in their semantics. To reflect this proposal and the intuition that the LER comes form the characteristics of the root, I propose that the left-edge element merges as the complement of the weak root. This is shown in the updated structure below (to be further modified shortly):

(194) *Complex stem* (updated structure, take one)

maaciipahtoo maacii-pah-too away-run-AI 'S/he is running away.'



Under the assumption that Ojicree is head final, this structure also derives the right order of elements: the left-edge element, being the complement of the root, appears on the left edge of the stem. However, something is still intuitively wrong about this structure. The problem is that the left-edge element here appears too low. At some point it needs to take scope over the rest of the structure (the weak root and v). Recall that evidence for that comes from the scopal properties of the quantifier *caaki*-. In particular, when *caaki*- appears in the left-edge slot, it can take scope over the internal argument. A transitive complex stem with *caaki*- in the left-edge slot is repeated below. Assuming that the internal argument is introduced in the specificer of v, the quantifier *caaki*- will not be able to scope over it if it is in the complement of the weak root.

(195) caakiwin caaki-win all-carry.TA 'carry all X.'



Thus, there are conflicting requirements for the position of the left-edge element. I have suggested that it merges as the complement of the weak root, to reflect the fact that it fills a gap in its semantics. At the same time, evidence from the scopal properties of *caaki*- suggests that it needs to appear higher up in the structure. One possibility is to have the left-edge phrase merge as a complement of the root and then move up. This is the option that I advocate in the final proposal to be fleshed out in the next section. However, before dealing with the problem of

positioning the left-edge element, I further sharpen the proposal about the relation between the left-edge element and the weak root.

## 4.3 The left-edge requirement and event composition

I have proposed that the left-edge element fills a gap in the semantics of a weak root. To reflect that structurally, I have also suggested that it merges as a complement of the root. Before dealing with the problem of scope sketched at the end of the previous section, I would like to sharpen the proposal about the relation between the weak root and the left-edge phrase. Recall that at the end of the last section I suggested that the left-edge element supplies some missing semantic piece filling the gap in the semantics of the weak root, such as manner, direction, result or some accompanying circumstance. Notice that these semantic elements are commonly known to take part in event composition (e.g. Talmy 1985, Jackendoff 1990, Pustejovsky 1991, Parsons 1990). Thus, I propose that the composition of the full stem reflects event composition. The weak root has a gap in its meaning, and that gap does not allow it to build a full event in combination with a functional head. The left-edge element supplies the missing piece and completes the event composition (§4.3.1). Sections §4.3.4 - §4.3.9 test certain predictions that the present proposal makes.

### **4.3.1** Event composition in the literature

There is a large body of literature arguing that events<sup>51</sup> are not primitives but are decomposable into subparts (e.g. see Pustejovsky 1991, Travis 2000b, 2010, Tenny 2000, Ernst 2000, 2002 for

<sup>&</sup>lt;sup>51</sup> I use the term 'event' to mean 'eventuality' and to include all types of events (both states and dynamic events).

various approaches). These subparts can be semantic components such as cause, manner, direction, result, and so on (Talmy 1985, Jackendoff 1990, Pustejovsky 1991, Parsons 1990).

Many of these authors also hold the view that event composition is syntactically manifested in one way or another. The main piece of evidence for event decomposition comes from the scope of adverbials, with the position of an adverbial influencing its interpretation. For instance, some adverbs such as *quickly* can be interpreted as modifying either the manner of motion (a) or the duration of the entire event (Pustejovsky 1991, Travis 1988):

(196) a. Mary walked to the store quickly.

b. Mary quickly walked to the store. (Pustejovsky 1991, example (51))

Ernst (2000) distinguishes between clausal and manner readings of manner adverbials, as in the following example (his example (1)):

(197) a. Cleverly, Paula answered the questions.

b. Paula answered the questions cleverly.

Adverbs such as *clumsily* often alternate between subject-oriented (a) and manner (b) readings (Jackendoff 1972, Travis 1988, McConnell-Ginet 1982).

(198) a. Clumsily John spilled the beans.

b. John spilled the beans clumsily. (Jackendoff 1972)

Although details of the approaches and the proposed degree of correlation between semantics and syntax differ from one author to another, the general agreement in the literature is that adverbs may appear relatively high or low in the structure and thus can have different parts of the event in their scope. Sentence-level and speaker-oriented adverbials appear the highest in the structure (e.g. Jackendoff 1972, Cinque 1999, while event-related adverbials are higher than manner adverbials (Pustejovsky 1991, Travis 1988, 2010). In addition, it has been argued that some adverbs specifically select for *event*, or a syntactic constituent that corresponds to a complete event. For example, Tenny 2000 and Ernst 2002 argue that this is a property of some aspectual and temporal adverbials, among others. A constituent that is smaller than an event is termed by Ernst (2002) a *specified event*, and it may be selected only by lower-level adverbials, such as manner adverbials.

Applying these insights to Ojicree, I will argue that the left-edge constituent is needed to build a complete event (*core event* in Tenny's (2000) terms, Event in Ernst's (2002) terms). I also adopt the view that the composition of the event is structurally visible, and propose that the stem corresponds to an E(vent)Phrase.

### 4.3.2 Proposal

On the basis of the evidence brought in §4.2 and the views on event composition discussed in §4.3.1, I propose that the stem corresponds to a complete event. Simple and complex stems differ in that in complex stems event composition is visible syntactically. As was noticed earlier, the weak root is a semantically deficient element. Now I would like to take it one step further and propose that what it is lacking is some essential component of event composition, such as manner, path, direction, result, or some accompanying circumstance. The left-edge element provides that missing piece, completing the event composition. What semantic component of event component event component event compon

Syntactically, the stem constitutes an Event Phrase (EP). The left-edge element merges as the complement of the weak root, as proposed in §4.2.3, and moves up to the specifier of the EP. Thus, a complex stem (maximally) has the structure in (199).

complex stem

(199) pimiwin -pimi-winalong-carry.TA 'carry s.o. along.'



As discussed in §4.2.3, the evidence that the left-edge element has to move comes form the scopal properties of the quantifier *caaki*-. The motivation for this movement, however, remains unclear.

Based on the evidence adduced for (199), I will propose that all stems have this internal structure, so that the simple stem has the structure in (200).

#### simple stem

(200) ontin ont-n from-TA 'get s.o. from somewhere'



Thus, all stems have at least two layers: a vP is the immediate constituent formed by merger of a root (any root) and a *v*-head, with the internal argument *pro* (if present) in Spec, vP. This vP is then embedded in an EP (Event Phrase, as in Travis 2010). An EP is the domain that completes event composition. The internal argument is introduced in the specifier of v. The external argument (if present) is introduced by the head Voice (Kratzer 1996), which selects an EP as its complement. In complex stems, Spec, EP is always filled. In simple stems, the difference between a vP and an EP is not phonologically apparent, since the Spec, EP position is always empty in simple stems, and the E-head is always null in both simple and complex stems.

A clarification is needed regarding the constituent that I call EP, since I use it in a slightly different way than it is used in the literature. As in Harley 1995 and Travis 2010, I assume the head E marks the edge of the event. For these authors, this head also marks the boundary between l-syntax (syntax in the lexicon) and s-syntax (clausal syntax). I make no such claim for Ojicree. In fact, the l-syntax/s-syntax boundary, which is also somewhat relevant to my analysis

(as discussed in §1.5 and §2.2.1), would be located lower, since crucially according to the proposal defended here, complex stems are formed in the s-syntax.

The main difference between my use of EP and the EP in Harley 1995 and Travis 2010 is the relative position of the external argument. For Travis (2010), both the internal and external arguments are introduced below the EP level. For Harley (1995), the external argument is introduced in the specifier of the EP. Unlike these authors, I have proposed that the external argument is introduced higher than the EP, by the head Voice that takes the EP as its complement. Recall that the crucial piece of evidence for that, discussed in §4.3.5, came from the scope of *caaki*-.

The proposal that the stem in Ojicree corresponds to an Event implies that all the components of the stem contribute to the event composition. This proposal makes certain predictions about the range of elements that can occupy the left-edge position. In particular, elements that are not usually associated with event composition should not be able to appear in the left-edge slot. In the following sections I demonstrate that this prediction is borne out. In order to do this, I exploit the general ability of preverbs to 'lower' into the stem. As discussed in §4.1, preverbs can adjoin to the stem as a stem-external modifier or appear stem-internally, occupying the left-edge position in a complex stem. The contrast between the two positions of a preverb is illustrated in the following structures. Since the stem is an EP, I assume that stem-external modifiers adjoin to the EP (or VoiceP if the verb is transitive or unergative). This is illustrated in (201), where the preverb *mino-* 'good' appears stem-externally adjoining to the simple stem *naakosi* 'be visible'.

 (201) mino-naakosi mino-[naako-si EP] good- look-be.AI
 'S/he/it [anim] looks nice.'



The structure in (202) shows a complex stem *minomaakosi* 'smell good'. The adverbial *mino-* here is the stem-internal modifier satisfying the left-edge requirement. Thus, it appears in Spec, EP. Any further modifiers will be stem-external and thus will adjoin to the EP, as is the case with *nihtaa-* 'habitually' in this example:

 (202) (nihtaa)-minomaakosi nihtaa-[mino-[maakw-si νP] EP] always-good-smell-be.AI
 'It [anim] (always) smells nice.'


As discussed in §4.1, a commonly accepted view is that there is no difference between the two positions of a preverb inside and outside the stem (Branigan et al. 2005, Dahlstrom 2000, Goddard 1988) and its semantic contribution is the same in both cases. However, if the hypothesis that the stem corresponds to an event is correct, it predicts that the contribution of a preverb should be different inside and outside the stem. Inside the stem, the preverb in the left edge would contribute to the event composition, but outside the stem it would take the whole event in its scope. Additionally, elements that are not usually associated with event composition (such as certain higher-level adverbials) should not be able to satisfy the left-edge requirement. In the remainder of the chapter I illustrate that these predictions are borne out. Sections §4.3.4 -§4.3.9 each focus on a certain kind of higher-level adverbials: speaker-oriented, sentence-level, agent-oriented, aspectual and relative preverbs, showing that they are either banned from the left-edge position or have a restricted range of meanings there.

#### 4.3.3 Speaker-oriented preverbs

Speaker-oriented adverbials are considered by many to appear the highest in the hierarchy of adverbials (Cinque 1999). One element that appears to be speaker-oriented in Ojicee is the preverb *mohci*- 'just'. Its use is exemplified in the following sentences:

- (203) a. Otaapaanan okii-aapacihaan ekwa kiih-pi-mohci-takohatoo. otaapaan-an o- kii- aapacih-aan ekwa kii- pi- mohci-[tako-[hatoo $_{\nu P}$ ]  $_{EP}$ ] car- OBV 3-PAST-use.TR-3>3' and PAST-hither-just- arrive-walk.INTR 'S/he went there by car but s/he returned just walking.'
  - b. Mohci-ishi-aahsamaahtepi ihimaa mohci-ishi-[aahsamaahte-[pi $_{\nu P}$ ]  $_{EP}$ ] ihimaa just-there-in.the.sun-sit.INTR there 'He's just sitting in the sun over there.'

- Mohci-kihci-nanaantawi-anohkii mohci-kihci-nanaantawi-[anohkii <sub>EP</sub>] just- very- look.for- work.INTR
   'S/he is just working hard looking for a job.'
- d. Nihtaa-mohci-nehpici-saakaswe nihtaa-mohci-nehpici-[saakaswe <sub>EP</sub>] always-just-constantly-smoke.INTR 'She just smokes all the time.'

It appears from these examples that *mohci*- is similar to Cinque's (1999) speaker-oriented adverbs ('frankly', 'fortunately', 'probably') in that it conveys the attitude of the speaker. Since speaker-oriented elements are located high in the structure and are not usually associated with event composition, I predict that *mohci*- should not be able to appear inside the stem.

The sentence in (204)b shows that this prediction is borne out. While *mohci*- can appear stem-externally with the stem *niimi* 'dance' in (204)a, it is ungrammatical inside a stem with the weak root *-shimo* that has a similar meaning 'dance' in (204)b:

- (204) a. E-wii-ayamihaakipan nahshine tahsh e-mohci-niimic e- wii- ayamih-aak- pan nahshine tahsh e-mohci-[niimi <sub>EP</sub>]-c COMP-VOL-talk.TR-1>3.CONJ-PRET constantly but COMP-just-dance.INTR-3CONJ 'I wanted to talk to him but he just danced all the time.'
  - b. \*E-wii-ayamihaakipan nahshine tahsh e-mohci-shimo-c e- wii-ayamih- aak- pan nahshine tahsh e- [mohci-[shimo  $_{\nu P}$ ]  $_{EP}$ ]-c COMP-VOL-talk.TR-1>3.CONJ-PRET constantly but COMP-just-dance.INTR-3CONJ 'I wanted to talk to him but he just danced all the time.'

The structures for the stems in (204)a and (204)b are shown in (205)a and (205)b, respectively. (205)a is a grammatical construction where *mohci*- is stem-external and, thus, appears outside the EP. I assume that, as a speaker-oriented element, it attaches at least as high in the structure as the VoiceP. In (205)b, *mohci*- appears stem-internally satisfying the left-edge requirement. It merges as a complement of the root *-shimo* 'dance' and raises to Spec, EP. The whole structure is ungrammatical.

#### stem-external

(205) a. mohci-niimi mohci-[niimi <sub>EP</sub>] just- dance.AI 's/he is just dancing.'



 b. \*mohci-shimo [mohci-[shimo νP] EP] just- dance.AI intended: 's/he is just dancing' stem-internal



The ungrammaticality of (205)b is expected under the hypothesis that the stem is an EP: speaker-oriented elements are not able to participate in event composition.

#### 4.3.4 Sentence-level preverbs

Another class of elements that appear high in the syntactic hierarchy of adverbials are sentence-level elements (Jackendoff 1972, Cinque 1999). One example of a sentence-level element in Ojicree is the preverbal modifier *mate-* 'at a distance', that indicates that the speaker is not present where the action takes place, or can only see it from a distance. The following examples show *mate-* combining with the stems *nikamo* 'sing' and *pimipiso* 'drive' as a stem-external modifier.

- (206) a. Mate-nikamo ihimaa. mate-[nikamo  $_{\rm EP}$ ] ihimaa<sup>52</sup> at.a.distance-drive.AI 3 there 'S/he is (seen) singing over there.
  - b. Mate-pimipiso ihimaa. mate-  $[pimi-[piso_{\nu P}]_{EP}]$  ihimaa at.a.distance-along-drive.AI 3 there 'S/he is (seen) driving over there.

Since sentence-level elements are not normally associated with event composition, I predict that *mate*- should not be able to appear in the left-edge position. (207) shows that this prediction is borne out. In (207)a *mate*- appears on the left-edge of the weak root *-hamaaso* 'sing', producing an ungrammatical verb stem. In (207)b its combination with *-piso* 'drive' also results in an ungrammatical structure.

<sup>&</sup>lt;sup>52</sup> From now on, I label the stem as EP, while the  $ROOT_w + v$  domain in complex stems will be labeled as vP. When the difference between and a vP and an EP is vacuous, as in simple stems, I live the vP unlabeled. Although, as argued in Chapter 3, unergative and transitive verbs have a VoiceP level, I don't label it in the brackets. All that is important is whether a preverb appears inside a stem (in Spec, EP), or outside the stem (adjoining to EP).

- (207) a. \*Matehaamaso ihimaa. [mate-[hamaaso  $_{\nu P}$ ]<sub>EP</sub>] ihimaa at.a.distance-sing.AI 3 there intended: 'S/he is (seen) singing over there.'
  - b. \*Matepiso ihimaa [mate- [piso  $_{\nu P}$ ]<sub>EP</sub>] ihimaa at.a.distance -drive.AI 3 there intended: 'S/he is (seen) driving over there.'

Thus, *mate-* cannot satisfy the LER.

A similar restriction is found with another sentence-level element – the preverb *ishkwaa*-'after'. While it is fully compatible with a full stem (208)b, it cannot appear stem-internally (208)a.

| (208) a. | *Nikii-minihkwaataaan nipi ishkwaapahtooyaan.<br>ni-kii-minihkwaataan nipi [ishkwaa-[pahtoo <sub>vP</sub> ] <sub>EP</sub> ]-yaan<br>1- PAST-drink.TI water after- run.AI- 1.CONJ<br>intended: 'I drank water after running.' |
|----------|--|
| b.       | Nikii-minihkwaataan nipi ishkwaa-pimipahtooyaan.<br>ni-kii-minihkwaataan nipi ishkwaa-[pimi-[pahtoo <sub>vP</sub> ] <sub>EP</sub> ] -yaan  |

1-PAST-drink.TI water after- along-run.AI- 1.CONJ 'I drank water after running.'

Both restrictions with *mate-* and *ishkwaa-* are expected under the proposal that the stem corresponds to an event.

The structures for the two different positions of *mate-* exemplified in (206)b and (207)b are shown below. In (209)a, *mate-* appears stem-externally. As with the speaker-oriented *mohci-* above, I assume that it adjoins to VoiceP, or higher. In the ungrammatical (209)b *mate-* appears inside the stem, satisfying the left-edge position.

#### stem-external

stem-internal

(209) a. mate-pimipiso mate-  $[pimi-[piso_{\nu P}]_{EP}]$ at.a.distance-along-drive.AI 3 's/he is seen driving at a distance'



b. \*matepiso [mate-  $[piso_{\nu P}]_{EP}$ ] at.a.distance -drive.AI 3 intended: 'S/he is (seen) driving over there.'



The contrast in grammaticality between these two structures is predicted by the proposal that the stem is an EP. Sentence-level elements such as *mate-* 'after' and *ishkwaa-* 'after' do not participate in event composition, so they should not be able to appear inside the stem.

## 4.3.5 Caaki-

Another restriction has to do with the element *caaki*- that means 'all, exhaustive' and can act as a quantifier. Recall from the discussion in Chapter 3 that the interpretation of *caaki*- is different outside and inside the stem. Outside the stem it can refer to either the external or the internal argument, while inside the stem it can refer only to the internal argument.

The relevant data are repeated below. In (210)a to (210)c *caaki-* appears stem-externally. The verbal complexes in (210)a and (210)b are ambiguous, with *caaki-* being able to refer either to the external or the internal argument of the transitive verb. In (210)c *caaki-* refers to the subject of the unergative verb 'dance'.

(210) *Caaki-* 'all' stem-externally:

| a. | Nikii-caaki-kashkwaataamin mahkisinan                 | stem-external       |
|----|---|---------------------|
|    | ni-kii-caaki-[kash-kwaataa stem]-min mahkisin-an      |                     |
|    | 1-PAST-all- able-sew.TI- 1PL shoe-PL                  |                     |
|    | 'We have all sewed moccasins.' / 'We have sewed       | all the moccasins.' |
| b. | Nikii-caaki-pimiwinaamin awaashihshak.                |                     |
|    | ni-kii-caaki-pimi-win-aa-min awaashihsh-ak            |                     |
|    | 1-PAST-all-along-carry.TA-1>3-1PL child-PL            |                     |
|    | 'We all carried (the) children.' / 'We carried all th | e children.'        |
| c. | Caaki-pimishimowak.                                   | stem-external       |
|    | caaki-[pimi-[shimo $_{\nu P}$ ] $_{EP}$ ] -wak        |                     |
|    | all- along-dance.AI- 3PL                              |                     |
|    | 'They are all dancing.'                               |                     |

Examples with *caaki*- inside the stem are repeated in (211). When *caaki*- joins with the weak root -*ant*- 'eat' in (211)a it can refer only to the internal argument. The fact that *caaki*- cannot access the the external argument in this position is confirmed in (211)b that shows that the adverbial *pankii* 'some, a little' cannot appear in the same sentence, suggesting that both it and *caaki*- refer to the same thing (i.e. *caaki*- has to refer to the amount of meat eaten and not to the eaters). The same is the case when *caaki*- combines with the weak root -*wi*- 'carry' in (211)c: it can only refer to the internal argument here (cf. (210)b above ) When *caaki*- combines with an unergative intransitive element -*shimo* 'dance' in (211)d, the result is ungrammatical, suggesting that *caaki*- here cannot refer to the single argument of the verb, the external argument (cf. (210)c above) The combinations of *caaki*- with the unaccusative -*kitaaso* 'be angry' and *-aapahte* 'be smoke' in (211)e and (211)f are grammatical, since the single argument of these predicates is internal.

(211) Caaki- 'all' stem-internally:

- a. Nikii-caakantaamin wiiyaahsan. Ni-kii-[caak-[an-taa $_{\nu P}$ ]  $_{EP}$ ]-min wiiyaahs-an 1-PAST-all-eat.TI-AGR-1PL meat-PL 'We ate all the meat.'
- b. \*Nikii-caakantaamin pankii wiiyaahs. ni-kii-[caak-[an-taa  $_{\nu P}$ ]  $_{EP}$ ]-min pankii wiiyaahs 1-PAST-all-eat.TI-1PL some meat intended: 'We all ate some meat.'
- Nikii-caakiwinaak awaashihshak.
   ni-kii- caaki-win- aak awaashihshak
   1-PAST-caaki-carry.TA-1>3PL childeren
   'I carried all the kids.'
- d. \*Caakishimowak.
   [caaki-[shimo<sub>vP</sub>]<sub>EP</sub>] -wak
   all- dance.AI -3PL
   intended: 'They are all dancing.'

- e. Caakikitaasowak naapewak.
   [caaki-[kitaaso<sub>vP</sub>]<sub>EP</sub>] -wak naape-wak all-angry-3PL man-PL
   'All the men are angry.'
- f. Aasha caakaapahte. asha [caak-[aapahte  $_{\nu P}$ ]  $_{EP}$ ] already all- be.smoke.II 'The smoke is all gone.'

The two positions for *caaki*- in the context of the structures proposed in this chapter are shown below: In (212)a appears stem-externally with a transitive stem. Since in this structure *caaki*- takes scope over both the external and the internal argument, it is expected that it should be able to refer to either them. In (212)b *caaki*- satisfies the left-edge requirement for the weak root *-wi*- 'carry'. Since in this case it appears in Spec, EP and takes scope over the internal agument, it is expected that it should only be able to refer to the internal argument, not the external one.

(212) a. Nikii-caaki-pimiwinaamin awaashihshak. stem-external ni-kii-caaki-pimi-win-aa-min awaashihsh-ak
 1-PAST-all-along-carry.TA-1>3-1PL child-PL
 'We all carried (the) children.' / 'We carried all the children.'



b. Nikii-caakiwinaamin awaashihshak.
ni-kii- caaki-win- aak awaashihshak
1-PAST-caaki-carry.TA-1>3PL childeren
'We carried all the kids.' / \* 'We all carried the kids.'

stem-internal



Thus, the restrictions on the interpretation of *caaki*- fall out of the structure proposed here.

## 4.3.6 Aspectual preverbs

Aspectual elements refer to the internal structure of the event denoted by the verb, or to the beginning- and end-points of that event. Thus, the constituent that an aspectual element combines with has to denote an event. In addition, it has been argued that aspectual adverbials appear relatively high in the structure (Cinque 1999). Tenny (2000) also notices that aspectual adverbs can appear at different levels of structure making different semantic contributions, depending on the level. In particular, there is a distinction between "aspectual adverbs above the core event level, which can take scope over the core event; and aspectual adverbs within the core event, which can participate in its composition" (Tenny, p. 322).

These observations predict that aspectual elements should either be ungrammatical stem-internally, or should have a different range of meanings inside and outside the stem. In the following sections I demonstrate that this prediction holds, focusing on four aspectual preverbs: *nihtaa-* 'habitually', *kiiwe-*, 'again', *maacii-* 'start' and *pooni-* 'stop'. I will demonstrate that each of these can appear both stem-externally and stem-internally, and that they receive different interpretations depending on their position.

#### 4.3.6.1 nihtaa-

The adverbial *nihtaa*- can be interpreted either aspectually, meaning 'habitually', or as a manner adverb, meaning 'well'. When it appears as a stem-external modifier, both interpretations are possible. In (213)a it has the manner reading 'well' which is reinforced by the presence of the free-standing adverbial *kwayahk* 'well' in the same sentence. In (213)b it has the aspectual reading 'habitually' which is reinforced by the presence of the aspectual adverbial *kwayahk* 'well' in the same sentence. In (213)b it has the *mooshak* 'always'.

- (213) a. Kwayahk nihtaa-pimishimo. (kwayahk) nihtaa-  $[pimi- [shimo_{\nu P}]_{EP}]$ well well/habitually- along-dance.AI 'S/he dances well.'
  - b. Mooshak nihtaa-pimishimo. (mooshak) nihtaa- [pimi- [shimo<sub> $\nu P$ </sub>]<sub>EP</sub>] always well/habitually-along-dance.AI 'S/he dances all the time.'

However, *nihtaa*- behaves differently when it appears as a stem-internal modifier. In (214) it combines with *-shimo* 'dance' that has a meaning similar to the full stem *pimishimo* above. In this case, the adverbial *kwayahk* 'well' can appear in the same sentence ((214)a) but the adverbial *mooshak* 'always' cannot ((214)b), suggesting that the manner reading is the only one available.

- (214) a. Kwayahk nihtaawishimo. kwayahk [nihtaawi-[shimo<sub>vP</sub>]<sub>EP</sub>] well well/habitually-dance.AI 'S/he dances well.'
  - b. \*Mooshak nihtaawishimo. mooshak [nihtaawi- [shimo<sub>vP</sub>]<sub>EP</sub>] always well/habitually-dance.AI intended: 'S/he dances all the time.'

Thus, only the manner reading of *nihtaa*- is available stem-internally, while its aspectual reading 'habitually' is possible only outside the stem. This is consistent with the proposal that the stem is an EP: manner modification is usually thought to contribute to an event while aspectual markers appear higher and take an event in their scope.

To strengthen the above point, it appears that two instances of *nihtaa*- can appear in a verbal complex but only if they have different meanings. For instance, it is possible to say (215)a to mean 'always swim well', where the higher *nihtaa*- is stem-external and has an aspectual reading, and the lower *nihtaa*- is in the left-edge slot and has a manner reading.<sup>53</sup> On the other hand, (215)b where both instances of *nihtaa*- are aspectual, is ungrammatical.

- (215) a. Ninihtaa-kiimooci-nihtaawaatake ni-nihtaa-kiimooci-[nihtaaw-[aatake vP] EP]
  1-habitually-secretly-well-swim.AI
  'I always swim well in secret.' (e.g. If I don't want anybody to know that I swim well because I don't want to represent my town in a swimming competition)
  - \*Nihtaa-nehpici-kakwe-pooni-nihtaa-saakaswe nihtaa-nehpici-kakwe-pooni-nihtaa-[saakaswe EP] habitually-constantly-try-stop-habitually-smoke.AI intended: 'S/he always tries to quit smoking all the time.'

<sup>&</sup>lt;sup>53</sup> It is possible that there are some restrictions on repeating the same element stem-internally and stem-externally. For instance, it is possible that the two instances cannot be adjacent but have to be separated by another preverb (in this case *kiimooci*- 'secretly').

The structure for (215)a with two instances of *nihtaa*- is shown below. The lower *nihtaa*- appears stem-internally satisfying the LER. The higher *nihtaa*- appears outside the stem attaching to VoiceP (or possibly higher).

(216) Ninihtaa-kiimooci-nihtaawaatake
ni-nihtaa-kiimooci-[nihtaaw-[aatake νP] EP]
1-habitually-secretly-well-swim.AI
'I always swim well in secret.'



Since manner but not aspectual elements can contribute to the event composition, it is expected that only the manner reading of *nihtaa*- is available in the left-edge position.

#### 4.3.6.2 kiiwe-

Another adverbial that patterns similarly to *nihtaa*- is the preverb *kiiwe*- whose meaning can be either directional 'back' or aspectual 'again'.<sup>54</sup> Since direction is often associated with event composition but aspect is not, I predict that only the directional reading of this preverb should be available stem-internally.

The following pair of examples shows that this prediction is borne out. In (217)a *kiiwe-* appears as a stem-external modifier joining with the stem *maaciiki* 'grow', and the meaning of the resulting verbal complex is 'grow again'. (217)b is superficially similar to (217)a, with the only difference being that in (217)b *kiiwe-* appears as a stem-internal modifier. In this case, however, the sentence is deviant. In fact, my consultant commented about the sentence in (217)b that 'it sounds like the tree is growing backwards – ungrowing'. Both the ungrammaticality of (217)b and the consultant's intuitions confirm that stem-internally *kiiwe-* cannot have the aspectual meaning 'again' but only the directional 'back'.

- (217) a. Kiiwe-maaciiki shikop. kiiwe-[maacii-  $[ki_{\nu P}]_{EP}$ ] shikop. again- start-grow.AI tree 'The tree is growing again.'
  - b. #Kiiweki shikop.
     [kiiwe-[ki<sub>vP</sub>]<sub>EP</sub>] shikop.
     kiiwe-grow.AI tree
     intended: The tree is growing again.

To further test this semantic patterning of *kiiwe*-, the consultant was provided with two different scenarios both of which require the use of this adverbial but which clearly discriminate between its meanings. Under the first scenario *kiiwe*- can only have the meaning 'back':

<sup>&</sup>lt;sup>54</sup> Similarly, Rice (2000) discusses an adverbial in an Athapaskan language that can mean either 'back' or 'again' depending on the properties of the material it combines with.

- (218) Scenario: A mother is waiting for her child to finish playing and come home with her. As the child is about to run towards her, the child yells from a distance:
  - a. Aasha nikiiwe-pimipahtoo. aasha ni- kiiwe-  $[pimi- [pahtoo_{\nu P}]_{EP}]$ already 1-again/back-along-run.AI 3 'I'm running back already!'
  - b. Aasha nikiiwepahtoo.
     aasha ni- [kiiwe- [pahtoo<sub>vP</sub>]<sub>EP</sub>]
     already 1-again/back-run.AI 3
     'I'm running back already!'

Under this scenario, kiiwe- can appear either as a stem-external or as a stem-internal modifier. In

both cases it can have the directional meaning 'back'.

Under the second scenario, kiiwe- is forced to have the aspectual reading 'again'.

- (219) Scenario: I had a sore ankle which prevented me from following my running routine, and when it finally got healed and I go out for my first run, I yell:
  - Aasha nikiiwe-pimipahtoo.
     aasha ni-kiiwe- [pimi- [pahtoo νP] EP]
     already 1-again/back-along-run.AI 3
     'I'm running again!'
  - b. #Aasha nikiiwepahtoo.
     aasha ni-[kiiwe-[pahtoo <sub>νP</sub>] <sub>EP</sub>]
     already 1-again/back-run. AI 3
     intended: I'm running again!

Notice that in this case *kiiwe-* can be a stem-external modifier for the stem *pimipahtoo* 'run', but cannot appear stem-internally joining with *-pahtoo* 'run'. Thus, just like *nihtaa-* earlier, *kiiwe-* is shown to have only directional meanings when appearing stem-internally, while aspectual readings are not available in that position. This restriction is also expected if the stem corresponds to an EP: while directional elements contribute to the event composition, aspectual elements do not but need to take scope over the complete event.

#### 4.3.6.3 maacii-

The preverb *maacii*- can have the aspectual meaning 'start' or the directional meaning 'away'. As with *kiiwe*- discussed above, I predict that the range of meanings of this preverb should be different inside and outside the stem.

The two positions for *maacii*- are illustrated below. In (220)a *maacii*- appears stem-externally and means 'start', while (220)b it appears inside the stem satisfying the LER and its meaning is 'away'.

| (220) | a. | Aasha nikii-maacii-anohkii.                  | stem-external |
|-------|----|--|---------------|
|       |    | aasha ni-kii-maacii-[anohkii <sub>EP</sub> ] |               |
|       |    | already 1-PAST-start-work                    |               |
|       |    | 'I have already started working.'            |               |
|       |    |  |               |

b. Aasha kii-maaciihsewak piinehshihshak. stem-internal aasha kii-[maacii-[hse  $_{\nu P}$ ]  $_{EP}$ ]-wak piinehshihsh-ak already PAST-away-fly.AI-PL bird-PL 'The birds flew away already.'

This pair of examples illustrates a prevalent pattern: the directional reading of *maacii*- is not readily available outside the stem, while the aspectual reading seems to not be possible stem-internally.

Consider also the minimal pair in (221). In (221)a, *maacii*- combines as a stem-external modifier with the stem *pimipiso* 'drive', and receives an aspectual reading 'start'. In (221)b it occupies a stem-internal left-edge position and combines with the element *-piso* that also means 'drive'. In this case, the verb can only mean 'go on a road trip', 'drive off'; that is, *maacii*- can only have a directional meaning when it is stem-internal.

- (221) a. Nimaacii-pimipis miinawaa pihsim. stem-external ni-maacii-[pimi-[pis  $_{\nu P}$ ]  $_{EP}$ ] miinawaa pihsim 1-start-along-drive.AI next month 'I am going to start driving next month (e.g. I just got my driving license).'
  - b. Nimaaciipis miinawaa pihsim. stem-internal ni-[maacii-[pis νP] EP] miinawaa pihsim
    1-away-drive next month
    'I am going on a road trip / I am driving off next month.'
    \* 'I am going to start driving next month (e.g. I just got my driving license).'

The next pair of examples demonstrates the combination of *maacii*- with a transitive stem *ishi-taapaan*- 'drive s.o. to a certain place' and the corresponding transitive concrete final *-taapaan*- drive. Here again, when *maacii*- appears stem-externally (a) it means 'start', but inside the stem (b) it has the directional reading 'away'. In the second sentence, the consultant strongly preferred to include the locative adverbial *weti* 'there', which confirms that *maacii*- has a directional reading.

- (222) a. Aasha nikii-maacii-ishitaapaanaak awaashihshak ishkoonoowikamikonk. aasha ni-kii-maacii-[ishi-[taapaan<sub> $\nu P$ </sub>]<sub>EP</sub>]-aak awaashihsh-ak ishkoonoowikamik-onk already 1-PAST-start-to- drive.TA-1>3 child- PL school-LOC 'I've already started driving the kids to school.'
  - b. Aasha nikii-maaciitaapaanaak awaashihshak \*(weti) ishkonoowikamikonk. aasha ni-kii-[maacii-[taapaan  $_{\nu P}$ ]  $_{EP}$ ]-aak awaashihsh-ak \*(weti) ishkonoowikamik-onk already 1-PAST-away-drive.TA-1>3 child-PL school-LOC 'I already drove the kids to school.'

Thus, when *maaci*- occupies the left-edge position in these stems, it can only have a directional meaning 'away'.

However, it is worth noting that all cases just examined involve movement verbs ('fly', 'drive'), which are naturally compatible with a directional adverbial. The question now is what happens to the meaning of *maacii*- when it appears stem-internally with a concrete final that does not denote movement. We might expect that in such cases directional interpretation should not be possible. In such cases, there appears to be variation among speakers and even within a single

speaker's grammar. Two strategies are evident: first, *maacii*- can add a movement component to the non-movement verb; second, it can be interpreted as an aspectual 'start' but with a different aspectual flavor than the stem-external *maacii*-. Let us examine each of these in turn.

The first strategy is illustrated in the minimal pair in (223) where *maacii*- combines with a verb stem meaning 'be angry' (223)a and a concrete final with the same meaning (223)b. In (223)a, stem-externally it means 'start'. In (223)b, inside the stem, it addes a movement component so that the verb means something like 'storm off angry'.

| (223) | a. | Aasha maacii-kiishiwaasi.                             | stem-external |
|-------|----|---|---------------|
|       |    | aasha maacii-[kiishiwaasi <sub>EP</sub> ]             |               |
|       |    | already start-angry.AI                                |               |
|       |    | 'S/he is starting to get angry.'                      |               |
|       | b. | Aasha maaciinawesi                                    | stem-internal |
|       |    | aasha [maacii-[nawesi <sub>vP</sub> ] <sub>EP</sub> ] |               |
|       |    | already away-angry.AI                                 |               |
|       |    | 'S/he is storming off angry.'                         |               |

Second, with non-movement verbs, *maacii*- can be aspectual both outside and inside the stem, but with different flavors. Consider first the following sentence where *maacii*- refers to the start of a crying event. Here it can combine with the stem *maawi* meaning 'cry' or stem-internally with the concrete final *-atemo* with the same meaning (in the latter case *maacii*- has the form *maat*-). Both variants are grammatical, with no obvious difference in meaning.

(224) Aasha nipepiim mate-maatatemo / ...mate-maacii-maawi. aasha ni-pepiim mate-[maat-[atemo  $_{\nu P}$ ] EP] / ...mate-maacii-[maawi EP] already 1-baby.POSS there-start-cry.AI there-start-cry.AI 'My baby has just started crying over there (e.g. in the other room).' Consider now the sentence in (225) which describes the beginning of a habitual event of crying. In this case, *maacii*- can only appear stem-externally, combining with the stem *maawi* 'cry' but is ungrammatical inside the stem in combination with *-atemo* 'cry': <sup>55</sup>

(225) Mekwaac kaa-pepiiwic nikosihs, kaawiniin wihkaa ci-onci-maawic, ahpan kaaishkwaa-niishi-ahkiiwinec, kii-animisi.

mekwaac kaa-pepii- wi- c nikosihs, kawiniin wihkaa ci- onci-maawi- c, while COMP-baby-be.AI-CONJ 1.son no ever COMP-from-cry.AI-CONJ

ahpan kaa-ishkwaa-niishi-ahkiiwine- c kii-animisi then COMP-after- two-year.have.AI-CONJ PAST-difficult.be.AI

e- kihci-**maacii**-[maawi  $_{EP}$ ]-c /#...e- kihci-[**maat**-[atemo  $_{\nu P}$ ]  $_{EP}$ ]-c COMP-a.lot- start- cry-CONJ COMP-a.lot-start-cry.AI-CONJ

'When my son was a baby, he hardly ever cried, but when he turned two he started crying a lot.'

The contrast illustrated in (225) suggests that even though *maacii*- acts as an aspectual adverbial both inside and outside the stem, it has different meanings in the two positions. Inside the stem, it is not able to refer to the beginning of a habitual event, but only to the start of an immediate event. Meanwhile, outside the stem both readings of *maacii*- are available. Recall that Tenny 2000 distinguishes two levels of aspectual modifiers: the higher level takes an event in its scope, while the lower level participate in the event composition. I propose that this is precisely the difference beteween two positions of *maacii*-. The stem-external *maacii*- takes the whole event in its scope, which is why both readings are available there. By contrast, when *maaacii*- appears

<sup>&</sup>lt;sup>55</sup> Interestingly, those speakers for whom *maacii*- stem-internally adds a movement component, as in (223)b, have the form in (i) where *maacii*- behaves the same with *-temo* 'cry'. Notice also that here the element meaning 'cry' appears to not be a-initial, unlike in (224).

<sup>(</sup>i) Kii-maaciitemo awaashihsh.

kii-[maacii-temo stem] awaashihsh PAST-away-cry child

<sup>&#</sup>x27;The child left crying.'

<sup>\* &#</sup>x27;The child started crying.'

stem-internally, there is no event yet for it to take scope over; instead *maacii*- in the left-edge slot participates in the composition of that event.

One could also think of the contrast just described in terms of the relative scopes of the operators START and  $E(vent)^{56}$ , as illustrated below, where V refers to the actual core of the event, denoted by the concrete final. If START takes scope over E (as in (a)) then the resulting meaning is 'there started an event of crying', and that does not preclude the habitual operator from occurring between START and E (...does not preclude the habitual interpretation). By contrast, when E takes scope over START, the reading is something like 'there was an event of starting to cry', which precludes a habitual reading.

- (226) a. START > E > V
  - b. E > START > V

Thus, the different patterning of *maacii*- inside and outside the stem supports the hypothesis that the composition of the event is complete only at the stem level, whereas anything inside the stem contributes to the composition of that event.

The two positions for *maacii*- are summarized structurally below. In (227)a, *maacii*- appears outside the stem, taking scope over the entire event. The whole range of meanings of *maacii*- is available in this position. In (227)b *maacii*- (here *maat*-) appears inside the stem in the left-edge slot. The habitual reading of this preverb is excluded from this position.

<sup>&</sup>lt;sup>56</sup> I thank Lisa Travis for helping me think in this direction.

(227) a. maacii-maawi maacii-maawi start-cry.AI 'start crying (habitually/right now)'



 b. maatatemo maat-atemo start-cry.AI 'start crying (right now, \*habitually)'



It is important to note that the pattern described here is highly variable among speakers and even within one speaker's grammar. Moreover, in some cases there appears to be no obvious difference between the meanings of *maacii*- stem-internally and stem-externally. In (228) for instance, where *maacii*- modifies the beginning of a habitual activity, it can appear either outside or inside the stem. In (229), where *maacii*- refers to the beginning of an immediate activity, either position of *maaci*- is possible as well.

- (228) Niwii-maacii-kashkwaahs miinawaa ahkiiwink.
  ni-wii-maacii-[kashkwaahs EP] miinawaa ahkiiwin-k / Ni-wii-[maacii-[kwaahs vP] EP]...
  1-want-start-sew.AI next year.II-CONJ
  'I want to start sewing next year.'
- (229) a. Aan entootaman mekwaac? Niwii-maacii-kashkwaataanan asesinan. aan en- tootam-an mekwaac ni-wii-maacii-[kash[kwaataan<sub> $\nu$ P</sub>]<sub>EP</sub>]-an asesin-an what COMP-do.AI-2.CONJ now 1-VOL-start- able-sew.TI- PL moccasin-PL 'What are you doing right now? – I am about to start sewing (the) moccassins.'
  - b. Aan entootaman mekwaac? Niwii-maaciikwaataanan asesinan. aan en- tootam-an mekwaac ni-wii-[maacii-kwaataan  $_{\nu P}$ ]  $_{EP}$ ]-an asesin-an what COMP-do.AI-2.CONJ now 1-VOL-start- sew.TI- PL moccasin-PL 'What are you doing right now? – I am about to start sewing (the) moccassins.'

I would predict that a closer examination might reveal some subtle differences in meaning in these pairs of examples, however more research and a more systematic elicitation is needed to confirm this.

# 4.3.6.4 pooni-

Another aspectual modifier is *pooni*- 'stop'. Like *maacii*-, *pooni*- productively attaches to any full stem (a complex stem is shown in (230)a and a simple stem in (230)b) as a stem-external modifier:

(230) a. Pooni-pimipahtoo. pooni-[pimi-[pahtoo  $_{\nu P}$ ]  $_{EP}$ ] stop-along-run.AI 'S/he stopped running.'  b. Pooni-nikamo. pooni-[nikamo EP] stop-sing.AI 'S/he stopped singing.'

*Pooni-* can also appear stem-internally, but it has a different meaning in that position. The difference has to do with aspect and is similar to the situation with *maacii-* 'start' discussed above. When talking about a habitual activity of eating, *pooni-* can only be used stem-externally. The stem-internal *pooni-* can only refer to a one-time event.

- (231) a. Nikii-pooni-miicin wiiyaahs. ni-kii-pooni-[miicin EP] wiiyaahs 1-PAST-stop-eat.TI meat 'I stopped eating meat (e.g. became a vegetarian).'
  b. Nikii-poonantaan wiiyaahs.<sup>57</sup> ni-kii-[poon-[ant VP] EP]-aan wiiyaahs
  - 1-PAST-stop-by.mouth.TI-AGR meat
    - 'I am done with my meat (e.g. at a dinner table).'
    - \* 'I stopped eating meat (e.g. became a vegetarian).'

The following examples show that when talking about a one-time (immediate) event,

pooni- can appear either stem-externally (232)a or stem-internally (232)b:

- (232) Scenario: I keep kosher and so I need to wait three hours between meat and dairy. Waiting to get my dairy dessert, I wonder how much time has passed since I finished eating my meat for dinner:
  - a. Aan eh-tahso-tipahikaneyaak wiiyaahs kaa-pooni-miiciyaan? aan eh- tahso- tipahikaneyaa-k wiiyaahs kaa- pooni-[miici <sub>EP</sub>]-yaan what COMP-so.many-hour.II- CONJ meat COMP-stop- eat.TI-1CONJ 'What time did I stop eating the meat?'
  - b. Aan eh-tahso-tipahikaneyaak wiiyaahs kaa-poonantamaan? aan eh- tahso-tipahikaneyaa-k wiiyaahs kaa-  $[poon-[antam_{\nu P}]_{EP}]$ - aan what COMP-so.many-hour.II-CONJ meat COMP-stop-by.mouth.TI-1CONJ 'What time did I stop eating the meat?'

<sup>&</sup>lt;sup>57</sup> There is some variation in judgements here: for some speakers the form *-poonant-* is ungrammatical.

The same situation is evident across a wide range of verbs. For example, with the *-hkawe* 'leave tracks' *pooni-* can appear only stem-externally (233)a when talking about a habitual activity, and is ungrammatical inside a stem (233)b. However, when talking about an immediate event, *pooni-* can appear in either position (234).

- (233) a. Ahpii ishkwaa-pipoonk, waapoosook ta-pooni-pimihkawewak. ahpii ishkwaa-pipoon-k waapoos-ook ta-pooni-[pimi-[hkawe  $_{\nu P}$ ]  $_{EP}$ ]-wak when finish-winter-CONJ rabbit-PL FUT-stop-leave.track.AI-3PL 'When the winter is over, rabbits will stop leaving tracks.'
  - b. #Ahpii ishkwaa-pipoonk, waapoosook ta-poonihkawewak. ahpii ishkwaa-pipoonk waapoosook ta-[pooni-[hkawe<sub> $\nu P$ </sub>]<sub>EP</sub>]-wak when finish-winter.II-CONJ rabbit-PL FUT-stop-leave.tracks-3PL intended: 'When the winter is over, rabbits will stop leaving tracks.'
- (234) a. Ohomaa ishi-pooni-pimihkawe waapoos. ohomaa ishi-pooni-[pimi-[hkawe  $_{\nu P}$ ]  $_{EP}$ ] waapoos here ishi-stop-along-leave.tracks.AI rabbit 'The rabbit's tracks stop/disappear here' (e.g. pointing at the trail)
  - b. Ohomaa ishi-poonihkawe waapoos.
     ohomaa-ishi-[pooni-[hkawe vP] EP] waapoos
     here ishi-stop-leave.tracks.AI rabbit
     'The rabbit's tracks stop/disappear here' (e.g. pointing at the trail)

One more example is given below with the stem *nikamo* 'sing' and a concrete final *-hamaaso* with a similar meaning. When talking about an immediate activity, both stem-external and stem-internal *pooni*- are grammatical (235), but to refer to an habitual activity *pooni*- must appear stem-externally (236).

(235) a.Ketahtawin kii-pooni-nikamo.<br/>ketahtawin kii-pooni-[nikamo  $_{\rm EP}$ ]<br/>suddenly PAST-stop-sing.AI<br/>'S/he suddenly stopped singing.'stem-externalb.Ketahtawin kii-poonihamaaso.<br/>etahtawin kii-[pooni-[hamaaso  $_{\nu P}$ ]  $_{\rm EP}$ ]<br/>suddenly PAST-stop-sing.AI<br/>'S/he suddenly stopped singing.'stem-internal

| (236) | a. | Kii-pooni-nikamo kaa-ani-kihci-ahaawic.<br>kii-pooni-[nikamo EP] kaa-ani-kihci-ahaa-wi-c<br>PAST-stop-sing.AI COMP-INCH-elder-be-CONJ<br>'S/he stopped singing when s/he grew old.'                  | stem-external |
|-------|----|--|---------------|
|       | b. | #Kii-poonihamaaso kaa-ani-kihci-ahaawic.<br>kii-[pooni-[hamaaso vP] EP] kaa-ani-kihci-ahaa-wi-c<br>PAST-stop-sing.AI COMP-INCH-elder-be-CONJ<br>intended: 'S/he stopped singing when s/he grew old.' | stem-internal |

As with *maacii*- 'start' discussed above, I propose that this contrast in position has to do with event composition. The event is completely formed only at the level of the stem, while anything below the stem is less than a full event. Any modifiers below the stem level, thus, do not take the event in their scope but rather participate in their composition. Such aspects as habituality can only be expressed above the stem level.

There are, however, some exceptions to the pattern described here. For instance, in the following cases, both stem-external and stem-internal *pooni*- can refer to a one time event (237) or to a habitual event (238).

| (237) | a. | Aasha pooni-tahkinowe, ekwa tahsh ka-poosimin!<br>asha pooni-[tahki-[nowe $_{\nu P}$ ] $_{EP}$ ], ekwa tahsh ka-poosi-min<br>already stop-cold-wind.II and so FUT-embark.AI-2PL<br>'The cold wind has stopped, let's go into the boat.' | stem-external |
|-------|----|---|---------------|
|       | b. | Aasha pooninowe, ekwa tahsh ka-poosimin!<br>aasha [pooni-[nowe $_{\nu P}$ ] $_{EP}$ ], ekwa tahsh ka-poosimin<br>already stop-wind.II and so FUT-embark.AI-2PL<br>'The wind has stopped, let's go into the boat.'                       | stem-internal |
| (238) | a. | Ani-maacii-niipink ta-ani-pooni-nootin.<br>ani- maacii-niipin-k ta- ani- pooni-[nootin <sub>EP</sub> ]<br>INCH-start-summer.II-CONJ FUT-INCH-stop-windy.II<br>'When the summer comes, it will stop being so windy.'                     | stem-external |
|       | b. | Ani-maacii-niipink ta-ani-pooninowe.ani- maacii-niipin-kta-ani- $[pooni-[nowe_{\nu P}]_{EP}]$ INCH-start-summer.II-CONJ FUT-INCH-stop-windy.II'When the summer comes, it will stop being so windy.'                                     | stem-internal |

At this point, it is not clear how to reconcile these exceptions with the proposal defended in this chapter. As with *maacii*- 'start/off' discussed in the preceding section, more research is needed to determine whether there are some subtle difference in the pairs of examples presented above.

## 4.3.7 Agent-oriented preverbs

Another class elements that appear relatively high in the structure are agent-oriented elements, such as *kakwe-* 'try', *kiimooci-* 'secretly', *manaa-* 'avoid', *noonte-* 'eager to', and *nanaatawi-* 'look for'. In (239) these elements appear as stem-exernal modifiers combining with stems *pimipiso* 'drive', *kaskwaahso* 'sew' (complex stems) and *niimi* 'dance' (simple stem):

- (239) a. Kakwe-pimipiso. kakwe-[pimi-[piso vP] EP] try-along-drive.AI 'S/he is trying to drive.'
  - b. Kiimooci-kashkikwaahso.
     kiimooci-[kashki-[kwaahso νP] EP]
     secretly-RED-sew.AI
     'S/he is sewing secretly.'
  - c. Manaa-pimipiso.
     manaa-[pimi- [piso vP] EP]
     avoid- along-drive.AI
     'S/he avoids driving.'
  - d. Noonte-kashkikwaahso.
     noonte-[kashki-[kwaahso νP] EP]
     eager- able-sew.AI
     'S/he needs to/is eager to sew.'
  - e. Nanaantawi-niimi. nanaantawi-[niimi <sub>EP</sub>] look.for- dance.AI 'S/he is looking for a place to dance.'

Agent-oriented elements require the presence of an agent and, since the external argument (I use the terms 'external argument' and 'agent' interchangeably). Under the assumption that the external argument is introduced outside the EP in Spec, VoiceP, agent-oriented elements should be excluded form the left-edge position.

In general, it appears that agent-oriented elements are not favored in left-edge position. Examples in (240) show that *manaa-* 'avoid', *noonte-* 'eager' and *nanaantawi-* 'look for' cannot appear as stem-internal modifiers inside complex stems. In these ungrammatical examples the agent-oriented elements attach to roots that have similar meanings to the full stems in (239)c, (239)d and (239)e above.

- (240) a. \*Manaapiso. [manaa-[piso  $_{\nu P}$ ]  $_{EP}$ ] avoid- drive.AI 'S/he avoids driving.'
  - b. \*Noontekwaahso.
     [noonte-[kwaahso vP] EP]
     eager- sew.AI
     'S/he is eager to sew.'
  - c. \*Nanaantawishimo.
     [nanaantawi-[shimo <sub>νP</sub>]<sub>EP</sub>]
     look.for- dance.AI
     'S/he is looking for a place to dance.'

Thus, while these agent-oriented elements can appear as stem-external modifiers, they are ungrammatical inside a stem. This is also predicted by the hypothesis that the stem is an EP and the external argument is introduced above the EP level.

However, the situation with agent-oriented elements is not entirely straightforward and calls for more research. While some such elements are clearly disfavored in the stem-internal modifier position, as illustrated in (240), other agent-oriented elements can appear inside some

complex stems, but not in others. For instance, *kiimooci-* 'secretly' is generally disfavored stem-internally (241), but there are a few exceptions (242):

- (241) a. \*Kiimoocishimo. [kiimooci-[shimo  $_{\nu P}$ ]  $_{EP}$ ] secretly-dance.AI 'S/he is dancing secretly.'
  - b. \*Kiimoocikwaahso.
     [kiimooci-[kwaahso<sub>νP</sub>]<sub>EP</sub>] secretly-sew.AI
     'S/he is sewing secretly.'
  - c. \*Kiimoocipiso. [kiimooci-[piso<sub>vP</sub>]<sub>EP</sub>] secretly-drive.AI 'S/he is driving secretly.'
- (242) a. Kiimootaapi. [kiimoot-[aapi <sub>vP</sub>] <sub>EP</sub>] secretly-laugh.AI 'S/he is laughing secretly.'
  - b. Kiimootaatisi. [kiimoot-[aat-si vP] EP] secretly-act-AI 'S/he is being secretive.'

Another agent-oriented element, kakwe- 'try' often appears stem-internally in a modified

form, *kakweci-*:

- (243) a. Kakwecipiso. [kakweci-[piso  $_{\nu P}$ ]  $_{EP}$ ] try-drive.AI 'S/he is learning to drive.'
  - b. Kakwecishimo. [kakweci-[shimo νP] EP] try-dance.AI 'S/he is learning to drive.'

- c. Kakwecipahtoo. [kakweci-[pahtoo  $_{\nu P}$ ]  $_{EP}$ ] try-run.AI 'S/he is trying to run.'
- d. Okakwecishkawaan ashikanan
  o-[kakweci-[shkaw<sub>vP</sub>]<sub>EP</sub>]-aan ashikan-an
  3-try-wear.TA-3>3' sock-PL
  'S/he is trying socks on.'

Although the situation with agent-oriented elements requires more careful examination than is possible here, there is some initial evidence that these elements are interpreted differently when they appear inside the stem. First, sentences like (243)a to (243)c above are often translated as 'learn to drive/sing/run' as opposed to 'try to...'. Second, for some other examples like (243)d above there is evidence that *kakweci*- there means something altogether different than 'try'. For instance, under the scenario in (244), the sentence in (243)d (repeated as (244)a below) cannot be said. Instead, to get the meaning 'try', *kakwe*- has to be repeated as a stem-external modifier, as in (244)b:

- (244) Scenario: My two year old is sitting on the floor and trying to put socks on, but is not good at it yet and is not actually managing to put a sock on even once, but keeps trying.
  - a. #Okakwecishkawaan ashikanan
    o-[kakweci-[shkaw<sub>vP</sub>]<sub>EP</sub>]-aan ashikan-an
    3-try-put.on.TR-AGR sock-PL
    intended: 'He is trying to put socks on.' *Consultant's comments: this can only be said if he's actually putting them on.*
  - b. Okakwe-kakwecishkawaan ashikanan.
     o-kakwe-[kakweci-[shkaw νP] EP]-aan ashikan-an
     3-try-try-put.on.TR-AGR sock-PL
     'He is trying to put socks on.'

In fact, in other cases with *kakwe-/kakweci-*, this element can be repeated stemexternally, with its full agentive interpretation in the higher position:

- (245) a. Kakwe-kakwecipiso. kakwe-[kakweci-[piso<sub>vP</sub>]<sub>EP</sub>] try-try-drive.AI 'S/he is trying to learn how to drive.'
  - b. Niwii-kakwe-kakwetohsemin.
     ni-wii-kakwe-[kakwet-[ohse vP] EP]-min
     1-VOL-try-try-walk.AI-1PL
     'We want to try and do some brisk walking.'
  - c. Niwii-kakwe-kakwecihpwaa kinooshe. ni-wii-kakwe-[kakweci-[hpw<sub> $\nu P$ </sub>]<sub>EP</sub>]-aa kinooshe 1-VOL-try -try- taste-1>3 fish 'I want to try and taste the fish.'

Notice, on the other hand, that when both instances of the modifier are agent-oriented,

and appear stem-externally, repetition is not possible:<sup>58</sup>

 (246) \*Niwii-kakwe-kakwe-[pimipiso] ni-wii-kakwe-kakwe-[pimi-[piso νP]EP]
 1-VOL-try-try-drive.AI intended: 'S/he wants to try to drive.'

Thus, I suggest that when agent-oriented elements appear stem-internally, they have reduced agentivity. This has been demonstrated with *kakwe-/kakweci-* 'try', but I predict that something similar can be shown for *kiimooci-* 'secretly' and possibly other ones. However, more research is needed to confirm this.

## 4.3.8 pi-

The preverb *pi*- 'hither, towards the reference point' is commonly used stem-externally to specify that the motion is towards the speaker or towards a reference point:

<sup>&</sup>lt;sup>58</sup> As in the case of the preverb *nihtaa*- discussed earlier, the repetitition of an agent-oriented element inside and outside the stem might be subject to some constraints that are not clear at the moment, such as adjacency, and so on.

- (247) a. Kihci-pi-mahkatewaanaahkwan. kihci-pi-[mahkatewaanaahkwan<sub>EP</sub>] big-hither-big.cloud.II 'A big cloud is approaching.'
  - b. Aanahpii ke-ishi-pi-kiiwec? aanahpii ke-ishi-pi-[kiiwe EP]-c when FUT-direction-hither-go.home.AI.CONJ 'When will s/he come home.'
  - c. Weti onci-pi-naakosi ahawe. wetionci-pi-[naakosi <sub>EP</sub>] awawe there REL-hither-visible.AI that.one 'He is coming from over there.'

Besides being a purely directional element, *pi*- can also sometimes provide a secondary event 'come' so that the resulting verbal complex means 'come and...'. This is common, in particular, with verbs that do not denote motion events, e.g. 'sing', 'see', 'talk', 'have dinner', 'eat', 'be angry.' In each case these verbs provide a primary event and *pi*- provides the secondary event 'come'.

- (248) a. Wiih-pi-nikamo omaa waapank. wiih-pi-[nikamo <sub>EP</sub>] omaa waapank VOL-hither-sing.AI here tomorrow 'S/he will come and sing here tomorrow.'
  - b. Mooshak nika-pi-waapamaa. mooshak nin-ka-pi-[waapam<sub>EP</sub>]-aa. always 1-FUT-hither-see.TA-1>3 'I will come and see him often.'
  - c. John wiih-pi-kakito. john wiih- pi-  $[ka-[kito_{\nu P}]_{EP}]$ . John want- hither-REDUP-talk.AI 'John wants to come and talk.'
  - d. Pi-onaakohshinehkwen. pi-[onaakohshi-[nehkwe<sub> $\nu$ P</sub>]<sub>EP</sub>]-n hither-evening-have.meal.AI-IMPER 'Come and have dinner (here)!'

- e. Pi-wiihsinihkan anoonaakohshink waapank pi- [wiihsini <sub>EP</sub>]-hkan ani- onaakohshin-k waapank hither-eat.AI-DEL.IMPER INCH-evening.II-CONJ tomorrow 'Come for dinner tomorrow!'
- f. Kiih-pi-kiishiwasi.
   kiih-pi-[kiishiwaasi <sub>EP</sub>]
   PAST-hither-be.angry.AI
   'S/he came here and was angry.'

*Pi*- is not very common as a stem-internal modifier, for reasons that are not clear. However, when it does appear stem-internally, its meaning is restricted to the directional 'hither, in this direction'. Thus, in the following case where *pi*- combines with the weak root *-kito*, the resulting verb stem can only mean 'call here', not 'come and talk' (cf. (248)c):

(249) Kiih-pikito na omaa John? kiih- [pi- [kito vP] EP] na omaa john PAST-hither-talk Q here John 'Did John call here?'
\* 'Did John stop by to talk?'

The fact that *pi*- is not able to provide a secondary event stem-internally but only stem-externally is predicted by the hypothesis that the stem composition reflects event composition: the event is not formed yet at the level below the stem, so anything that appears below that level contributes to the composition of that event but is not able to provide a secondary event.

## 4.3.9 Restrictions on relative preverbs

Recall from §2.4.1 that relative preverbs link the event denoted by the verb to various circumstances associated with it, such as time, place, location, direction, and so on. In §2.4.1 the ability of relative preverbs to appear stem-internally as well as outside the stem was used as an argument for syntactic word formation, to illustrate the similarity between the concrete final and the stem. In this section, I again turn to relative preverbs, this time to highlight the difference

between the two constituents. I argue that outside the stem, relative preverbs are able to make reference to an event, but stem-internally this is not possible.

#### 4.3.9.1 Onci-

*Onci-* is a relative preverb meaning 'from a certain place', and as discussed in §2.4.1 above, it can appear both inside and outside the stem, referring to the source of the movement. Relevant examples are below:

| (250) | a. | Shaawanonk onci-tahkinowe                            | stem-external |
|-------|----|--|---------------|
|       |    | shaawanonk onci-[tahki-[nowe $_{\nu P}$ ] $_{EP}$ ]. |               |
|       |    | south.LOC from-cold-wind.II                          |               |
|       |    | 'Cold wind is blowing from the south.'               |               |
|       | b. | Shaawanonk oncinowe                                  | stem-internal |

b. Shaawahonk onclowe stem-in shaawahonk [onci-[nowe  $_{\nu P}$ ]  $_{EP}$ ] south.LOC from-wind.II 'Wind is blowing from the south today.'

*Onci-* can have several other meanings, Valentine (2011) lists the following: (i) 'cause, for such reason, in regard to'; (ii) 'did not (negative past)'; (iii) 'thereafter, from that point on'. In the discussion to follow I focus in particular on its use as a negator (ii) and an inchoative morpheme (iii). Since these negation and aspect need to have a whole event in their scope, I predict that these readings of *onci-* will be unavailable stem-internally but only outside the stem.

The use of *onci*- as an inchoative morpheme is demonstrated in (251). As (251)a shows, the verb *tahkisite* 'have cold feet' by itself is not compatible with the punctual adverbial *ketahtawin* 'suddenly', suggesting that it cannot have an inchoative reading. In (251)b, when *onci*- is added, the sentence becomes grammatical. Since there is no place adverbial in the sentence, it is clear that *onci*- cannot have a source reading there, but only the aspectual inchoative reading.

- (251) a. \*Ketahtawin tahkisite. ketahtawin tahki-sit-e suddenly cold-foot-e.AI intended: 'His/her feet got cold suddenly.'
  - b. Ketahtawin onci-tahkisite. ketahtawin onci-[tahki-sit-e <sub>EP</sub>] suddenly INCH-cold-foot-e.AI 'His/her feet got cold suddenly.'

In (251)b *onci*- attaches to the full stem *tahkisite* 'have cold feet', and thus, appears in a stem-external position. Consider now the minimal pair in (252). In (252)a *onci*- attaches to the full stem *tahki-nowe* 'be cold wind', and in (252)b it appears stem-internally with the element *-nowe* 'be wind'. Only the first sentence is well-formed, which suggests that *onci*- cannot have an inchoative reading stem-internally.

- (252) a. Ketahtawin onci-tahkinowe stem-external ketahtawin onci-[tahki-[nowe  $_{\nu P}$ ]  $_{EP}$ ] suddenly INCH-cold-wind.II 'Suddenly, cold wind started blowing.'
  - b. \*Ketahtawin oncinowe stem-internal ketahtawin [onci-[nowe  $_{\nu P}$ ]  $_{EP}$ ] suddenly INCH-wind.II 'Suddenly, wind started blowing.'

That *onci*- is compatible with *-nowe* in its directional reading is illustrated in (250)b above, where the place adverbial *shaawanonk* 'south' is present. In fact, to repair the ungrammatical sentence in (252)b, the consultant offered to add a place adverbial *ihiweti* 'there', as in (253). This confirms that only directional reading of *onci*- is available stem-internally.

(253) Ketahtawin \*(ihiweti) oncinowe. stem-internal ketahtawin ihiweti [onci-[nowe  $_{\nu P}$ ]  $_{EP}$ ] suddenly there from-wind.II 'Suddenly, wind started blowing *from that direction*.'

*Onci-* is also used in negative past in combination with the complementizer *kaa-*, as the following examples illustrated:

- (254) a. Kaa-onci-pimihkawec waapoos kaa-onci-[pimi-[hkawe  $_{\nu P}$ ]  $_{EP}$ ]-c waapoos COMP-NEG-along-leave.tracks.AI-3CONJ rabbit 'The rabbit didn't leave any tracks'
  - b. Kaa-onci-maashtooc osaam niinamisii kaa-onci-[maashto <sub>EP</sub>]-c osaam nii-naamisii COMP-NEG-lift.AI-3CONJ too REDUP-weak.AI 'S/he cannot lift it because s/he is too weak.'

This meaning of onci- is also not available stem-internally (compare (255) to (254)a

above):

 (255) #Kaa-oncihkawec waapoos kaa-[onci-[hkawe vP] EP]-c waapoos COMP-NEG-leave.tracks.AI-3CONJ rabbit intended: 'The rabbit didn't leave any tracks.'

Thus, inside the stem *onci*- can be directional, but not an inchoative or a negator. This restriction falls out of the proposal that the stem is an event and corresponds to the EP. First, aspectual elements and negation are generally thought to appear higher in the structure than directional adverbials (Cinque 1999, Ernst 2002). Second, while directional elements participate in event composition by adding a direction component to a motion verb, aspect and negation need an event in their scope.

# 4.3.9.2 Ishi-

The relative preverb *ishi*- attaches to motion verbs and links the event to a location to mean 'to a certain place.' As discussed in §2.4.1 and illustrated below, it productively attaches both stem-externally and stem-internally:

| (256) | a. | Nikii-ishi-maaciiwinaa mashkihkiiwikamikonk.<br>ni-kii- ishi-[maacii-[win <sub><math>\nu P</math></sub> ] <sub>EP</sub> ]- aa mashkihkiiwikamik-onk<br>1-PAST-to-away-carry.TA-1>3 nursing.station-LOC<br>'I took him/her to the nursing station.' | stem-external |
|-------|----|--|---------------|
|       | b. | Nikii-ishi-winaa mashkihkiiwikamikonk.<br>ni-kii- [ishi-[win <sub>vP</sub> ] <sub>EP</sub> ]- aa mashkihkiiwikamik-onk<br>1-PAST-to-carry.TA-1>3 nursing.station-LOC<br>'I took him/her to the nursing station.'                                   | stem-internal |
| (257) | a. | Weti ishi-pimihkawe waapoos.<br>weti ishi-[pimi-[hkawe $_{\nu P}$ ] $_{EP}$ ] waapoos<br>there to-along-leave.tracks.AI rabbit<br>'The rabbit's tracks are going in that direction.'   | stem-external |
|       | b. | Weti ishihkawe waapoos.<br>weti [ishi-[hkawe $_{\nu P}$ ] $_{EP}$ ] waapoos<br>there to-leave.tracks.AI rabbit<br>'The rabbit's tracks are going in that direction.'   | stem-internal |

Besides referring to the direction of movement, ishi- has several additional uses. First, it can link the event to a time adverbial, as in (258)a, where its antecedent is a temporal adverbial clause.<sup>59</sup> Second, it can itself form a locative adverbial, usually in combination with the complementizer kaa-, such as kaa-ishi-niiminanowank in (258)b. This adverbial means 'dance party', but is actually a headless relative clause meaning 'where dancing is taking place'.<sup>60</sup>

- Mekwaac e-kisiihsipasoyaan ninihtaa-ishi-nikam. (258) a. mekwaac e-kisiihsipaso-yan ni-nihtaa-ishi-[nikam <sub>EP</sub>]<sup>61</sup> while COMP-take.shower.AI-1-CONJ 1-always-ishi-sing 'I often sing in the shower.'
  - Niwii-ishaa kaa-ishi-niiminaanowank. b. kaa-ishi-[niiminaanowan EP]-k ni-wii-ishaa 1-VOL-go.AI where-ishi-be.dancing.II-CONJ 'I am going to a dance party.'

 <sup>&</sup>lt;sup>59</sup> See Slavin 2007 for a proposal on the meaning of *ishi*- in cases such as (258)a in particular.
 <sup>60</sup> There are a number of other uses of *ishi*- such as referring to manner, but I am ignoring those here.

<sup>&</sup>lt;sup>61</sup> When *ishi*- is non-directional, I gloss it simply as 'ishi'.
Since the two uses of *ishi*- exemplified in (258)a and (258)b make reference to an event, I predict that they should not be available stem-internally. This prediction is borne out, as demonstrated below.

Consider first how *ishi*- patterns with directional/movement verbs. As (257) above illustrates, it is compatible with both the stem *pimihkawe* 'leave tracks along' and the concrete final *-hkawe* 'leave tracks' to mean 'tracks are going in that direction'. In (259) *ishi*- is used with the same two elements and refers to the temporal adverbial 'during the winter'. In this case it is grammatical only with the full stem (259)a and cannot appear stem-internally (259)b.

- (259) a. Mekwaac kaa-pipoonk ishi-pimihkawewak waapoosoonk.
   mekwaac kaa-pipoon- k ishi-[pimi- [hkawe<sub>vP</sub>]<sub>EP</sub>]-wak waapoos-ook while COMP-winter.II-CONJ ishi-along-leave.tracks.AI-3PL rabbit-PL
   'During the winter, rabbits leave tracks.'
  - b. #Mekwaac kaa-pipoonk ishihkawewak waapoosook. mekwaac kaa-pipoon-k [ishi- [hkawe  $_{\nu P}$ ]  $_{EP}$ ]- wak waapoos-ook while COMP-winter-CONJ ishi-leave.tracks.AI-3PL rabbit-PL intended: 'During the winter, rabbits leave tracks.'

The same situation is observed with another directional element, the transitive *-taapaan*-'drive somebody', and the corresponding full stem *-maaciitaapaan*- 'drive someone away'. As a directional element, *ishi*- can be used both stem-externally (260)a and stem-internally (260)b, where it refers to the direction *ishkoonoowikamikonk* 'to school'. However, when the antecedent of *ishi* is a time adverbial as in (261), it can only appear stem externally (261)a and not inside the stem (261)b. The sentence in (261)b can only mean 'When I get a new vehicle, I will drive you over there', referring to some particular direction.

(260) a. Aasha nikii-ishi-maaciitaapaanaak awaashihshak ishkoonoowikamikonk. aasha ni-kii- ishi-[maacii-[taapaan  $_{\nu P}$ ]  $_{EP}$ ]-aak awaashihsh-ak ishkoonoowikamik-onk already 1-PAST-ishi-away-drive.TA-1>3 child-PL school-LOC 'I already drove the kids to school.'

- b. Aasha nikii-ishi-taapaaaak awaashihshak ishkoonoowikamikonk. aasha ni-kii- [ishi-[taapaan<sub> $\nu P$ </sub>]<sub>EP</sub>]- aak awaashihsh-ak ishkoonoowikamik-onk already 1-PAST-to-drive.TA-1>3 child-PL school-LOC 'I already drove the kids to school.'
- (261) a. Ahpii oshkitaapaaneyaan nika-ishi-papaamitaapaanin.
   ahpii oshki-taapaan-e- yaan ni-ka- ishi-[papaami-[taapaan<sub>vP</sub>]<sub>EP</sub>]-in when new-car-have.AI-1.CONJ 1-FUT-ishi-around-drive.TA-1>2
   'When I get a new vehicle, I will drive you around.'
  - b. #Ahpii oshkitaapaaneyaan nika-ishitaapaanin. ahpii oshki-taapaan-e- yaan ni-ka- [ishi-[taapaan<sub> $\nu$ P</sub>]<sub>EP</sub>]-in when new- car-have.AI-1.CONJ 1-FUT-ishi-drive.TA-1>2 intended: 'When I get a new vehicle, I will drive you around.'

Now let us see how ishi- behaves with non-directional (non-motion) verbs. While with

movement verbs the directional reading of *ishi*- is always available, with non-movement verbs

*ishi-* is simply ungrammatical inside the stem:

| (262) | a. | Mekwaac e-kisiihsipasoyaan ni-nihtaa-ishi-nikam.<br>mekwaac e-kisiihsipaso- yaan ni-nihtaa-ishi-[nikam <sub>EP</sub> ]<br>while COMP-shower.AI-1.CONJ 1-always-ishi-sing<br>'I usually sing in the shower.'  | stem-external |
|-------|----|--|---------------|
|       | b. | *Mekwaac e-kisiihsipasoyaan ninihtaa-ishihamaas.<br>mekwaac e- kisiihsipaso- yaan ni-nihtaa-[ishi-[hamaas <sub><math>\nu P</math></sub> ] <sub>EP</sub> ]<br>while COMP-shower.AI-1.CONJ 1-always-ishi-sing<br>intended: 'I usually sing in the shower.' | stem-internal |
| (263) | a. | Niwii-ishaa kaa-ishi-kaskwaahsonaanowank.<br>ni-wii-ishaa kaa-ishi-[kash[kwaahsonaanowan <sub>EP</sub> ]-k<br>1-VOL-go COMP-ishi-able-be.crafts.II-CONJ<br>'I want to go to a craft session.'  |               |
|       | b. | *Niwii-ishaa kaa-ishi-kwaahsonaanowank.<br>ni-wii-ishaa kaa-[ishi- [kwaahsonaanowan <sub>νP</sub> ] <sub>EP</sub> ]-k<br>1- VOL-go COMP-ishi-be.crafts.II-CONJ<br>intended: 'I want to go to a craft session.'   |               |

Thus, it appears that when *ishi*-appears stem-internally its only possible reading is directional. The two possible structural positions for *ishi*- are shown below:

(264) a. Mekwaac kaa-pipoonk ishi-pimihkawewak waapoosoonk.
 mekwaac kaa-pipoon- k ishi-[pimi- [hkawe<sub>vP</sub>]<sub>EP</sub>]-wak waapoos-ook while COMP-winter.II-CONJ ishi-along-leave.tracks.AI-3PL rabbit-PL
 'During the winter, rabbits leave tracks.'



b. #Mekwaac kaa-pipoonk ishihkawewak waapoosook.
 mekwaac kaa-pipoon-k [ishi- [hkawe vP] EP]- wak waapoos-ook while COMP-winter-CONJ ishi-leave.tracks.AI-3PL rabbit-PL intended: 'During the winter, rabbits leave tracks.'



Again, this restriction is predicted by the proposal that the event composition correlates with the composition of the stem. The directional *ishi*- does not need to have an event in its scope, but simply contributes to an event. The other two uses of *ishi*- require a whole event in their scope. Relatedly, I have I argued elsewhere on semantic grounds (Slavin 2007) that in some of its uses *ishi*- requires the presence of an event argument in the sense of (Kratzer 1995).

#### 4.3.10 Summary: the LER and event composition

In this section I have proposed that the stem is an event and syntactically constitutes an EP and then tested some predictions of this proposal regarding the range of available elements in the left-edge position. The restrictions on the interpretation of preverbs in the two different positions are summarized in the following table:

(265) Summary of the LER restrictions:

| element           | stem-external                               | stem-internal (left-edge)      |
|-------------------|---|--------------------------------|
| sentence-level    | grammatical                                 | ungrammatical                  |
| speaker-oriented  | grammatical                                 | ungrammatical                  |
| caaki- 'all'      | can refer to the external or internal       | can only refer to the internal |
|                   | argument                                    | argument                       |
| agent-oriented    | agent-oriented                              | reduced agentivity?            |
| aspectual         | habitual, episodic                          | episodic                       |
| relative preverbs | event-oriented, aspectual, negation (onci), | directional, manner            |
|                   | directional, manner                         |                                |

All these restrictions fall out from the proposal that the stem is an EP. Elements that are not usually associated with event composition, such as sentence-level and speaker-oriented adverbials, elements that refer to the external argument, certain aspectual and event-oriented elements and negation are all excluded from the left-edge position. On the other hand, directional and manner adverbials, as well as certain aspectual elements that contributed to the event composition can satisfy the left-edge requirement.

The findings in this section support the proposal that the LER is a semantic constraint that has to do with event composition. When preverbs appear stem-internally, satisfying the LER, they participate in event composition, while when they appear outside the stem, they take the event in their scope.

#### 4.4 Conclusion

I have proposed that the LER is a semantic requirement that has to do with event composition. Weak roots are semantically deficient elements, missing some meaning component such as manner, direction, result and so on, that does allow them to build a full event in combination with a functional head. The left-edge element supplies the missing piece and thus completes the event composition. I have proposed that syntactically, the verb stem corresponds to an EP. The left-edge element is merged as a complement of the weak root and then moves to the specifier of EP. The EP is, thus, the domain that completes event composition.

The present proposal also predicts that the range of elements that can occupy the left-edge positions should be restricted to those that are normally associated with event composition. I have shown that this prediction is borne out. Higher-level elements such as sentence-level adverbials, speaker-oriented adverbials, agent-oriented, aspectual and relative

preverbs are either banned from the left-edge position or have a different range of meanings there, restricted to their 'lower-level' interpretations, such as manner, direction, and episodic (as opposed to habitual) aspectual. These restrictions show that, predictably, when an element appears below EP (in the Spec, EP position), it takes part in the event composition, while outside the EP (adjoining to the EP or a higher projection) it takes the whole event in its scope.

In the next chapter, I extend this proposal to account for a particular type of noun incorporation.

# Chapter 5 The left-edge requirement and Noun Incorporation

In the previous chapters, I discussed the structure of the verb stem in Ojicree, defending a structural distinction between two types of stems. However, no discussion of stem structure in Algonquian is complete without at least some mention of noun incorporation, which is quite common in Algonquian languages. In the traditional Algonquianist literature, incorporated nominals are called *medials*, and are located between the elements that appear at the stem edges, the *initial* and the *final*. There are arguably several types of noun incorporation (NI) in Ojicree and other Algonquian languages, with medials playing different grammatical roles, and with different verbal heads responsible for forming the structures. For discussion of different types of NI in various Algonquian languages, see Denny 1978a, 1983, Hirose 2003, Rhodes 1976, 2003, Voorhis 1983, Wolfart 1971, Lochbihler and Mathieu 2007, Mellow 1989, 1990, Norcross 1993, Mathieu and Barrie 2010, Mathieu to appear among other works.

In this chapter I focus on one particular kind of noun incorporation and suggest an analysis of it using the idea of the left-edge requirement developed in the preceding chapters. The goal of this chapter is thus both to understand the particular phenomenon of NI, and to show how the left-edge requirement can be extended to account for various intriguing derivational phenomena in the language.

### 5.1 Introducing the problem

Possibly the most common suffix that involves noun incorporation is -e, which forms intransitive verbs with animate subjects (AI). This suffix appears in two different constructions, which differ

in the relation between the incorporated nominal and the rest of the stem. First, *-e* can form a type of possessive verb, such as (266)a and (266)b, in which the initial (the element on the left edge) modifies the incorporated nominal. Second, it can form what looks like a more classical NI construction, shown in in (266)c and (266)d. Here, the initial looks like a verbal element, and the incorporated noun is the object. In all cases, the incorporated noun must appear in the *medial* slot.

- (266) a. tahkisite tahki-sit-e cold-foot-e.AI 'S/he has cold feet.' / 'Her/his feet are cold.'<sup>62</sup>
  - b. nitoshkitaapaane nit-oshki-taapaan-e 1-new-car-e.AI 'I have a new car.' / 'My car is new.'
  - c. kaahsinaakane kaahsi-naakan-e wash-dish-e.AI 'S/he is washing the dishes.'
  - d. naatahsapii<sup>63</sup> naat-ahsapy-e fetch-net-e.AI 'S/he is fetching a net.'

An immediate question that these data raise is whether possessive (a, b) and incorporative (c, d) stems are built with the same suffix or two different suffixes, and how the structure and the meaning of the suffix(es) can be represented.

Various authors differ in their treatment of the suffix -e and the constructions exemplified

above. Most work concerning noun incorporation with -e has been done on Southern Ojibwe

<sup>&</sup>lt;sup>62</sup> Possessive *e*-stems such as the ones in (266)a and (266)b are often translated either as 'X's noun is Y' or 'X has Y noun'. I use both these translations in this chapter, until I present analysis in §5.4 that favors only one of these translations.

<sup>&</sup>lt;sup>63</sup> After the nouns ending in -y it has the allomorph -ii (Valentine 2001)

dialects (Valentine 2001, Rhodes 1976, 2003, Mathieu to appear, Lochbihler and Mathieu 2007, Mathieu and Barrie 2010)) and Plains Cree (Hirose 2003, Wolfart 1971, Mellow 1989, 1990).

Valentine (2001) glosses the final -e in (266)a as 'body part is...' and talks about the constructions in (266)c and (266)d as 'incorporated goal verbs'. However, he seems to imply that the two are formed with the same final.

Rhodes (Rhodes 1976, 2003) does not treat -e as a final at all, but considers it to be a part of the incorporated nominal, which allows the nominal to be incorporated. Rhodes (1976) also explicitly distinguishes between the two kinds of e-constructions as 'possessed noun incorporation' and 'object incorporation'.

Mathieu (to appear) and Lochbihler (2007) refer to the final -e as a detransitivizer. These authors do not seem to distinguish possessive from incorporative e-verbs (Lochbihler and Mathieu 2007, Mathieu and Barrie 2010)

Wolfart (1971), in a comprehensive survey of *e*-verbs in Plains Cree also distinguishes possessive verbs from incorporative verbs. Although he does not take a position on whether the two are formed with the same suffix, for him the two constructions are built in a fundamentally different way. He terms constructions in (266)c and (266)d 'incorporative' stems, but takes the possessive *e*-verbs in (266)a and (266)b to be *bahuvrihi-denominatives* (that is, exo-centric compounds). In possessive e-verbs, "...the initial semantically modifies the final, and the meaning of the resulting verb is 'possessing an object of such and such quality'." (Wolfart 1971, p. 515). Thus, crucially, in his view possessive e-stems are built by combining the nominal with the modifier first and then adding the suffix *-e* to the compound noun. In this chapter, I use Wolfart's term 'incorporative' to refer to e-verbs such as the ones in (266)c and (266)d, and the term 'possessive' to refer to stems such as (266)a and (266)b.

In this chapter, I argue that the two types of *e*-stems above are instances of the same construction and are built with the same verbal head. I propose an analysis of these stems using the idea of the left-edge requirement developed in the preceding chapters. In particular, I argue that, as in the case of complex stems, these stems are complex syntactic constructs, with the left-edge constituent present for semantic reasons. In the discussion to follow I keep the terminological distinction between possessive and incorporative *e*-verbs, but ultimately demonstrate that the two constructions have the same properties and should thus receive a common analysis.

The chapter is organized as follows. In \$5.2 I provide an overview of the basic properties of e-verbs that help locate them within the broader discussion of NI and argue that (i) the formation of these verbs is a completely transparent syntactic process, and (ii) possessive and incorporative e-verbs have the same properties. In \$5.3 I review the stem-internal phonology in these verbs that supports but also challenges the syntactic findings of the previous section. In \$5.4 I introduce some properties of *e*-stems that have not been discussed in the literature, and provide an analysis of these that is in line with the view of the stem structure developed in this thesis. The conclusion and implications of the analysis are discussed in \$5.5.

However, before delving into the main discussion, I refine the scope of the investigation by making an important distinction between 'simple' and 'overt' incorporative stems.

#### 5.1.1 A note on 'Simple' vs. 'Overt' incorporative stems

Before proceeding, a little more needs to be said about incorporative e-verbs. Within this class, we must distinguish between what Wolfart (1971) calls 'simple incorporatives' and 'overt incorporatives'. Notice the difference between (267)a and (267)b. In (267)b the incorporated

nominal follows the transitive suffix -n, but no such transitive morphology appears in (267)a. Other than that, the two stems are identical. The same transitive suffix also surfaces in the analytic (non-incorporative) correlate in (267)c.

- (267) a. kaahsinaakane simple incorporative kaahsi-naakan-e wash-dish-e.AI 'S/he is washing (the) dishes.'
  - b. kaahsininaakane overt incorporative kaahs-n-naakan-e wash-TI-dish-e.AI 'S/he is washing (the) dishes.'
  - c. Okaahsinaanan onaakanan. analytic o-kaahs-n- aan- an onaakan-an 3-wash- TI-AGR-PL dish-PL 'S/he is washing (the) dishes.'

Thus, in overt incorporatives such as (267)b the nominal is incorporated into a transitive stem, and the suffix -e can be said to act as a detransitivizer.<sup>64</sup>

As shown in (268) and (269), some verbs freely alternate between overt incorporatives and simple incorporatives with no apparent difference in meaning (cf. Wolfart 1971). However, while the simple incorporative construction is very productive, as will be shown shortly, the same cannot be said about overt incorporatives. The set of verbs that can appear as overt incorporatives seems to be idiosyncratically specified. For instance, the alternation in (270) is not possible, even though in this case the corresponding analytic construction also exists as demonstrated in (270)c.

<sup>&</sup>lt;sup>64</sup> The difference between 'simple incorporatives' and 'overt incorporative' also corresponds to the difference between medial incorporation and true noun incorporation in Hirose 2003, and between stem-internal and non-medial incorporation in Rhodes 2003.

| (268) | a. | Kiih-kisinaakane.<br>kiih- kisii- naakan-e<br>PAST-wash- dish-e.AI<br>'S/he has washed the dishes.'   | simple incorporative |
|-------|----|---|----------------------|
|       | b. | Kiih-kisiininaakane .<br>kii- kisii- n- naakan-e<br>PAST-wash-TI-i-dish-e.AI<br>'S/he has washed the dishes.'                                 | overt incorporative  |
|       | C. | Nikii-kisiinaan onaakanan<br>ni-kii- kisii- n- aan onaakan-an<br>1-PAST-wash-TI-AGR dish-PL<br>'I washed the dishes.'                         | analytic             |
| (269) | a. | Kiih-kisiipiikipahpaapiwine.<br>kiih-kisiipiiki-pahpaapiwin-e<br>PAST-wash- window- e.AI<br>'S/he has washed the windows.'                    | simple incorporative |
|       | b. | Kiih-kisiipiikinipahpaapiwine<br>kiih- kisiipiik-n- pahpaapiwin-e<br>PAST-wash- TI-window- e.AI<br>'S/he has washed the windows.'             | overt incorporative  |
|       | C. | Nikiih-kisiipikinaan pahpaapiwinan.<br>ni-kiih-kisiipiik-n- aan pahpaapiwin-an<br>1-PAST-wash- TI-AGR window- PL<br>'I washed (the) windows.' | analytic             |
| (270) | a. | Nipiikonaakane<br>ni-piikw-naakan-e<br>1-break-dish-e.AI<br>'I broke a/my plate.'   | simple incorporative |
|       | b. | *Nipiikoninaakane<br>ni-piikw-n- naakan-e<br>1- break-TI-dish- e.AI<br>'I broke a/my plate.'  | overt incorporative  |
|       | C. | Nikii-piikonaan onaakan.<br>ni-kii- piikw- n- aan onaakan<br>1-PAST-break-TI-AGR dish<br>'I broke a/the plate.'                               | analytic             |

The productivity of the overt incorporative is also limited by the choice of incorporated nominal. According to Wolfart (1971), the overt incorporative in Plains Cree most frequently appears with the nouns *-iskwew-* 'woman, wife', *-astimw-* 'horse', *-awas-* 'child'. Although in Ojicree the set of possible incorporated nouns is larger (e.g. 'window', above), it is still very restricted.

Interestingly, Rhodes (2003) who also discusses the difference between simple and overt incorporatives (using a different terminology) notices the exact opposite situation in Southern Ojibwe. According to him, the formation of overt incorporatives in that dialect is completely productive, while simple incorporatives have "little semantic interest because the tokens are either obligatorily incorporated and therefore semantically transparent, or idiomatic and therefore semantically idiosyncratic." (p. 11). I will show that the situation is exactly the opposite in Ojicree: the formation of simple incorporatives is a completely productive in this dialect.

In the discussion to follow I set overt incoporatives aside, and focus on the two more productive kinds of e-verbs in the dialect under consideration: (simple) incorporatives and possessives.

### 5.2 The formation of e-verbs as a syntactic process

In this section I argue that the formation of e-verbs is a completely transparent syntactic process. First, I illustrate that the formation of e-verbs is completely productive and compositional. In constructionist theories such as Distributed Morphology (Halle and Marantz 1993, Marantz 1997), a version of which I assume, productivity and compositionality are properties of syntactic word formation. Second, I argue that the incorporated nominal is an nP, not a bare root. The same claim is made for other denominal verbs in Ojibwe by Mathieu (to appear). Indeed, I demonstrate that e-verbs exhibit the same properties that Mathieu (to appear) argues are characteristic of many DNVs in Ojibwe<sup>65</sup>, and that are also often attributed to DNV's in other languages of the Americas (e.g. Gerdts and Marlett 2008). In particular, I show that (i) the incorporated nominal in these constructions can be complex in a way that suggests that it cannot be simply a bare root; (ii) it can be modified by external (stranded) modifiers; and (iii) it can be referential. Assuming that the syntax cannot access components of the lexical word (Di Sciullo and Williams 1987) (or a word formed in the l-syntax), these properties are also evidence of syntactic word formation. Finally, I look at the phonology on the boundary between the left-edge element and the nominal, arguing that it provides further insights into the structure of these verbs.

## 5.2.1 Productivity of possessive stems

Possessive stems are most often cited with body part incorporates (Rhodes 1976, Valentine 2001). Indeed, inalienably possessed nominals (body parts and clothing items) are extremely common in this construction. The left-edge element in such cases always modifies the nominal, and can be an adjectival element or a numeral.

- (271) a. Mankisite. manki-sit- e big- foot-e.AI 'S/he has big feet.'
  - b. Kiishoosite. kiishoo-sit-e warm-foot-e.AI 'His/her feet are warm.'

 $<sup>^{65}</sup>$  Mathieu (to appear) also notices that the same characteristics are true of *-e* verbs in Ojibwe (referring to them as classical NI), but he seems to talk specifically about overt incorporatives, while I exclude these from the discussion, as stated in § 5.1.1.

- c. Kitahkisite. ki-tahki-sit-e
  2-cold-foot-e.AI
  'Your feet are cold (i.e. to touch).'
- d. Nikawacinincii. ni-kawaci-ninc-ii 1-cold-hand-e.AI 'My hands are cold.'
- e. Niishoosite. niishoo-sit-e two-foot-e.AI 'S/he has two feet.'
- f. Mihshiinowaapite nikosihs. mihshiinow-aapit-e ni-kosihs many- tooth-e.AI my-son 'My son has many teeth.'
- g. Nipeshikohtikwaane. ni-peshiko-htikwaan-e 1-one-head-e.AI 'I have one head'
- h. Nikakiicisite. ni-kaakiici-sit-e 1- sore- foot-e.AI 'I have sore feet.'
- i. Nipiiwinincii. nipiiwi-ninc-ii wet- hand-e.AI 'His/her hands are wet.'
- j. Nimashkawimihsate.
  ni-mashkawi-mihsat- e
  1- hard- stomach-e.AI
  'My stomach is hard.'
- k. Nikinakikwaahtashkwe. ni-kinaki-kwaantashkw-e 1-itchy-throat-e.AI 'I have an itchy throat'

- Nitewihtikwane. ni-tewi-htikwan-e
   1-hurt-heat-e.AI
   'I have a headache.'
- m. Nitapwetaahse. ni-apwe-taahs-e 1-hot-pant-e.AI 'My pants are hot.'
- n. Aakihtawikwanii. aakihtawi-kwan-ii double-blanket-e.AI 'S/he has more than one blanket.'

Relational nouns (a subclass of dependent inalienably possessed nominals that refer to

relatives)<sup>66</sup>, also incorporate freely:

- (272) a. Ninanepiwitaanihsiwe ni-nanepiwi-taanihs-iw-e 1-shy-daughter-e.AI 'My daughter is shy.'
  - b. Nitoshkitaanihsiwe.
    nit-oshki-taanihsiw-e
    1-new-daughter-e.AI
    'I have a new daughter.'
  - c. Nitoshkimoosome. ni-oshki-moosom-e 1-new-partner-e.AI 'I have a new boyfriend.'

Unlike what has been claimed for other dialects (e.g. Rhodes 1976), the possessive construction in Ojicree is not limited to body parts or even to inalienably possessed nominals. As the examples in (273) show, it is extremely common with a wide variety of nouns.

<sup>&</sup>lt;sup>66</sup> Cf. Mühlbauer 2007 who brings evidence for Cree that relational, body part and alienably possessed nominals are three distinct classes and behave differently in many contexts.

- (273) a. Nikakiipaatihkwewe. ni-kakiipaat-ihkwew-e 1-silly-woman-e.AI 'I have a silly wife.'
  - b. Nitoshkiminihkwaakane. ni-oshki-minihkwaakan-e 1-new-cup-e.AI 'I have a new cup.'
  - c. Nitahkaapihkinaakane ni-tahk-aapihk-naakan-e<sup>67</sup> 1-cold-metal-dish-e.AI 'My plate is cold.'
  - d. Nimankiwaakaahkwate. ni-manki-waakaahkwat-e 1-big-axe-e.AI 'I have a big axe.'
  - e. Kiwaapitaapaane. ki-waapi-taapaan-e 2-white-car-e.AI 'Your car is white (color).'
  - f. Ninihso-ishinishahikane. ni-nihso-ishinishahikan-e 1-three-parcel-e.AI 'I have three parcels.'
  - g. Nitapwe-ahcaanihshiwe. ni-apwe-ahcaanihshiw-e 1- hot- ring- e.AI 'My ring is hot.'
  - h. Nipakone-ahpihkwehshimoniikane. ni-pakone-ahpihkwehshimoniikan-e 1-have.a.hole-pillow.case-e.AI 'I have a hole in my pillowcase.'
  - i. Aasha kii-paahtewaniipiihshiwe shiikop. aasha kii-paahtew-anipiihshiw-e shiikop already PAST-dry- leaf- e.AI tree 'The tree has dry leaves already.'

<sup>&</sup>lt;sup>67</sup> In this example a classificatory medial *-aapihk* 'metal' precedes the incorporated noun *-naakan-* 'dish'.

- j. Nitishki-akintaahsone.
  ni--oshki-akintaahson-e
  1-new-number-e.AI
  'I have a new telephone number.'
- k. Nitoshki-nipewikamiikwe niwaahkaahikanink. ni--oshki-nipewikamikw-e ni-waahkaahikan-ink 1-new-bedroom-e.AI 1-house-LOC 'I have a new bedroom in my house.'
- Nitoshki-ishkotehkaanaapihkwe. ni-oshki-[ishkotehkaanaapihkw]-e 1-new-fire.metal-e.AI 'I have a new stove.'
- m. Nitoshki-kishepaa-miicime niwahkaahikanin.
  ni-oshki-kishepaa-miicim-e niwahkaahikan-ink
  1-new-morning-food-e.AI 1-house-LOC
  'I have a new cereal in my house.'

Rhodes (1976) notices for Central Ojibwe that "where the incorporation of a possessed subject is possible, it is obligatory" (p. 267). Again, in Ojicree, the situation seems to be different. As was shown above, incorporation is almost always possible, and as demonstrated immediately below, it is never obligatory, in the sense that the corresponding analytic construction is always available:

- (274) a. Nitahkitehsapiwine. ni-tahki-tehsapiwin-e 1-cold-chair-e.AI 'My chair is cold.'
  - b. Tahkaa tehsapiwin tahk-aa tehsapiwin cold-II chair '(The) chairs are cold'

analytic

(275) a. Nitahkinincii. ni-tahki-ninc-ii 1-cold-hand-e.AI 'My hands are cold.'

|       | b. | Tahkaawan nininciin<br>tahkaa-wan ni-ninc-iin<br>cold.II-PL 1-hand-PL<br>'My hands are cold.' | analytic |
|-------|----|---|----------|
| (276) | a. | Nimishkonihke.<br>ni-misko-nihk-e<br>1-red-arm-e.AI<br>'my arm is red.'                       |          |
|       | b. | Miskosi ninihk<br>miskosi ninihk.<br>be.red.AI arm<br>'My arm is red.'                        | analytic |

# 5.2.2 Productivity of incorporative stems

Incorporative e-stems are also extremely productive and do not seem to be limited to a particular

set of nouns. Rather, it appears that any nominal can be incorporated. <sup>68, 69</sup>

- (277) a. Kiih-kaahsinaakane. kiih-kaahsi-naakan-e PAST-wash-dish-e.AI 'S/he has washed the dishes.'
  - b. Wii-nanaantawinaapewe.
     wii-nanaantawi-naapew-e
     VOL-look.for-man-e.AI
     'S/he is looking for a man/husband.'
  - c. Ni-pahkiikimasinahikane.
    ni-pahk-iik-i-masinahikan-e
    1-open-cloth-i-book-e.AI
    'I opened (the pages of) the book.'

<sup>&</sup>lt;sup>68</sup> The situation again appears to be different from that in other dialects, where this is reported to be an unproductive process (e.g., Rhodes 1976). For instance, Rhodes (1976) specifically reports (277)c as ungrammatical in Central Ojibwe.

 $<sup>^{69}</sup>$  Cf. Lochbihler and Mathieu 2007 who also note that NI with the suffix -*e* in Ojibwe is not limited to the closed class of items that are traditionally considered to occupy the medial position.

- d. Niwii-naaci-pimitewe. ni-wii-naaci-pimitew-e 1-VOL-fetch-lard-e.AI 'I want to bring the lard.'
- e. Nikii-piikwahcaanihshiwe. ni-kii-piikw-ahcaanihshiw-e 1-PAST-break-ring-e.AI 'I broke my ring.
- f. Nikiih-nanaantawimasinahikane. ni-kiih-nanaantawi-masinahikan-e 1-PAST-look.for-book-e.AI 'I was looking for a book.'
- g. Nikii-piikonaakane. ni-kii-piiko-naakan-e 1-PAST-break-dish-e.AI 'I broke my plate'
- h. Ninanaantawimiicime ni-nanaantawi-miicim-e 1-look.for-food-e.AI 'I'm looking for food.'

Incorporative e-stems can also appear with body parts and other inalienably possessed nominals,

as in (278):

- (278) a. Nanaantawikote. nanaantawi-kot-e look.for-nose-e.AI 'S/he is looking for his/her nose.'
  - b. Nanaantawinincii. nanaantawi-ninc-ii look.for-hand-e.AI 'S/he is looking for his/her/an? arm'
  - c. Kakwecitaahse. kakweci-taahs-e try-pants-e.AI 'S/he is trying pants on'

- d. Kakwe-piitashikane. kakwe-piit-ashikan-e try-hither?-sock-e.AI 'S/he is trying to put socks on.'
- e. Nipepiim aasha ani-saakaapite. ni-pepiim aasha ani-saakaa-pit-e 1-baby already start-out-teeth-e.AI 'My baby is already teething.'

As with possessive e-stems, corresponding analytic constructions are always available.

analytic

analytic

- (279) a. Nikii-piikonaakane. ni-kii-piiko-naakan-e 1-PAST-break-dish-e.AI 'I broke a plate.'
  b. Nikii-piikonaan onaakan ni-kii-piiko-n-aan onaakan
  - ni-kii-piiko-n-aan onaakan 1-PAST-break-TA-AGR dish 'I broke a plate.'
- (280) a. Nikakwecitaahse. ni-kakweci-taahs-e 1-try-pant-e.AI 'I am trying on pants.'
  - b. Nikakwecishkawaa mitaahs.
     ni-kakweci-shkaw-aa mitaahs
     1-try-by.body.TA-1>3 pants
     'I am trying on pants.'

Thus, it appears that both possessive and incorporative e-stems<sup>70</sup> are syntactically transparent and productive. Assuming that unlimited productivity and compositionality are properties of syntactic word formation, the evidence brought here suggests that these verbs are formed in the syntax.

<sup>&</sup>lt;sup>70</sup> While the set of nominals that can appear inside incorporative stems is unlimited, it is possible that the set of leftedge elements in such stems might be restricted. Rhodes (2003) argues that it is limited only to 5 or 6 initials. It is not clear at the moment whether the same restriction holds for Ojicree. More research is needed to confirm the extent of this restriction in the dialect under consideration as well as into the nature of this restriction.

#### 5.2.3 The incorporated nominal is a phrase

In this section I examine the morphosyntactic properties of the incorporated nominal. As with denominal verbs in Ojibwe (Mathieu to appear), there is evidence that the incorporated nominal is an nP rather than a root. It can bear nominalizing morphology and diminutive marking, and can have modifiers. In most cases, the nominals are incorporated without a change in form.

There are a few nouns that undergo allomorphy when incorporated. These all begin with labials: word-initial *o*-, *m*- and *w*- are often omitted when the noun is incorporated (see Rhodes 1976).

| (281) | a. | oshkitaapaane<br>oshki-taapaan-e<br>new-car-e.AI<br>'S/he has a new car.'                         | cf. otaapaan 'car'       |
|-------|----|---|--------------------------|
|       | b. | minwakoote<br>minw-akoot-e<br>nice-dress-e.AI<br>'She has a nice dress.'                          | cf. makoot 'dress/coat'  |
|       | c. | kaahsinaakane <sup>71</sup><br>kaahsi-naakan-e<br>wash-dish-e.AI<br>'S/he is washing the dishes.' | cf. onaakan 'dish, dish' |
|       | d. | moosyaanahkisine<br>moosyaan-ahkisin-e<br>moose.hide-shoe-e.AI<br>'S/he has moose hide shoes.'    | cf. mahksin 'shoe'       |

Not all labial-initial nouns behave this way (see for example (282)d, (283)a, (284) below), but only a small set of lexically specified nouns.

<sup>&</sup>lt;sup>71</sup> For some speakers the noun *onaakan* 'dish, plate' incorporates unchanged; (e.g. *kaahsi-onaakan-e* 'wash dishes')

Apart from the small set of labial-initial nouns, the form of the nominal does not change when it is incorporated. In particular, the incorporated nominal is not stripped of its nominalizing morphology, either in possessive (282) or in incorporative (283) stems. All the nouns in these examples bear nominalizers *-kan*, *-n* and *-win*.

# (282) Possessive

- a. Ninihso-ishinishahikane. ni-nihso-[ishinishahi.kan]-e 1-three-parcel,NMZ-e.AI 'I have three parcels.'
- b. Manki-ahpihkwehshimone. manki-[ahpihkwehshimo.n]-e big-pillow.NMZ-e.AI 'S/he has a big pillow.'
- c. Nikii-oshki-akintaahsone. ni-kii-oshki-[akintaahso.n]-e 1-PAST-new-number.NMZ-e.AI 'I had/got a new number.'
- d. Niminominihkwaakane. ni-mino-[minihkwaa.kan]-e 1-good-cup.NMZ-e.AI 'I have two cups.'
- (283) *Incorporative* 
  - a. Nikiih-naaci-masinahikane. ni-kiih-naaci-[masinahi.kan]-e 1-PAST-fetch-book.NMZ-e.AI 'I went to get a/the book.'
  - b. Kisiipiki-pahpaapiwine. kisiipiiki-[pahpaapi.win]-e wash-window.NMZ-e.AI 'S/he is washing the windows.'
  - c. Nanaantawi-tehsapiwine. nanaantawi-[tehsapi.win]-e look.for-chair.NMZ-e.AI 'S/he is looking for a chair.'

In line with the principles of DM, I assume that nominalizing morphemes spell out nominal category-defining heads (n); therefore, these nouns are nPs.

The incorporated noun can also bear diminutive morphology, in both possessive (284) and incorporative (285) stems.

- (284) Niwii-oshki-waakaahkwatenhsowe.
  ni-wiih-oshki-[waakaahkwat-enhs]-ow-e<sup>72</sup>
  1- VOL-new- axe- DIM?-e.AI
  'I want to get a new small axe.'
- (285) Ninanaantawi-tehsapiwinenhsowe.ni-nanaantawi-[tehsapiwin-enhs]-ow-e1-look.for-chair.DIM-e.AI'I am looking for a small chair.'

Assuming that diminutive suffixes are added to a phrase and not a root, the fact that the incorporated nominal can have diminutive marking also suggests that what is incorporated is a syntactic phrase.<sup>73</sup>

Finally, the noun can be incorporated along with modifiers. This is illustrated for possessive and incorporative<sup>74</sup> stems below, with the complex nominal (nominal preceded by a modifier) bracketed in each case.

- 1- look.for- car-PEJOR-e.AI
- 'I am looking for a/my bad car.'
- (ii) \*Niwiini-ahpihkwehshimonkiikanihsh(ow)e.
   ni-wiini-ahpihkwehshimoniikan-ihsh(ow)-e
   1-dirty-pillow.case-PEJOR (EPENTH)-e.AI
   'My bad pillowcase is dirty.'

<sup>&</sup>lt;sup>72</sup> Nouns that bear a diminutive suffix are consistently incorporated with the additional epenthetic element *-ow-/iw*. Incorporation without it appears to be ungrammatical, e.g. *\*nitoshki-waakaahkwatenhse* (cf. (284)) *\*ninanaantawi-tehsapiwinehse* (cf. (285)). This might be a more general constraint that affects nouns that end in fricatives (cf. (272))

<sup>(272)</sup>)<sup>73</sup> While incorporation with diminutive morphology is completely productive, incorporation with the pejorative suffix appears to not be possible. The following examples with the pejorative are ungrammatical, with or without the epenthetic *-ow-*:

<sup>(</sup>i) \*Ninanaantawitaapaanihshe / ninanaantawitaapaanihshowe.

ni-nanaantawi-taapaan-ihsh-e/ ninanaantawi-taapaanihsh-ow-e

This is surprising since diminutive and pejorative otherwise exhibit parallel patterning. More fieldwork is needed to determine the nature of this restriction.

#### (286) *Possessive*

- Nitosaami-apwe-oshki-ahpihkwehshimone. a. ni-osaami-apwe-[oshki-ahpihkwehshimon]-e 1-too.much-hot-[new-pillow]-e.AI 'My new pillow is too hot.'
- b. Niniishoo-mankihtikwaane. ni-niishoo-[manki-htikwaan]-e 1-two-big-head-e.AI 'I have two big heads'

### (287) Incorporative

- Niwii-nanaantawi-kihci-mooswe. a. ni-wii-nanaantawi-[kihci-moosw]-e 1-VOL-look.for-[big-moose]-e.AI 'I am going to hunt/look for a big moose.'
- b. Ninanaantawi-wiini-tehsapiwin-e ni-nanaantawi-[wiini-tehsapiwin]-e 1-look.for-[dirty-chair]-e.AI 'I'm looking for a dirty chair.'
- Nikii-piiko-oshkinaakane. C. ni-kii-piiko-[oshki-naakan]-e 1-PAST-break-[new-dish]-e.AI 'I broke a/the new plate'

The possibility of incorporating the noun together with modifiers is another piece of evidence

that the incorporated constituent is a phrase.

To sum up, there is clear evidence that the incorporated nominal in *e*-verbs is a nominal

phrase rather than a bare root. It can have nominalizers, can bear diminutive morphology and can

The source of the restriction is not clear at the moment and must be left for further study.

<sup>&</sup>lt;sup>74</sup> In the case of incorporative stems in particular, modification is subject to some restrictions. For instance, it appears that -e verbs beginning with the initial kaahsi- 'wash' cannot incorporate nouns with modifiers: \*Nikaahsi-oshaawashkonaakane. (i)

ni-kaahsi-oshaawashko-naakan-e 1-wash-blue-dish-e.AI intended: 'I'm washing a/the blue plate.' \*Nikaahsi-oshkinaakane. (ii) ni-kaahsi-oshki-naakan-e 1-wash-new-dish-e.AI intended: 'I'm washing (my) new dish(es).'

include modifiers. Thus, like incorporated nouns in other denominals in Ojibwe (Mathieu to appear) the incorporated constituent here is an nP.

#### 5.2.4 Referentiality

It has been noticed that in both classical noun incorporation and denominal verb constructions the incorporated noun can be referred back to by material in the subsequent discourse (Mathieu 2009, Gerdts and Marlett 2008). Assuming that subparts of a frozen lexical item are not accessible at the sentence level (e.g. Di Sciullo and Williams 1987), this property also suggests that *e*-stems are syntactic constructs.

As with DNVs in Ojibwe (Mathieu to appear), the noun in both incorporative and possessive *e*-verbs can be referential. In the possessive stem in (288)a the incorporated noun – *htikwaan*- serves as the antecedent of the numeral *peshik* 'one' in the following sentence, and in (288)b the incorporated noun *ahpihkwehshimon* 'pillow' is referred back to by the verb in the following sentence.

#### (288) Possessive

- Niishohtikwaane koohkoosh. Peshik akaahsini, ekwa peshik mihshaani niishoo-htikwaan-e koohkoosh. Peshik akaahsini ekwa peshik mihshaani two-head-e.AI monster one be.small.II and one be.big.II
   'The monster has two heads. One is big and one is small.'
- b. Nitoshki-ahpihkwehshimone. Kihci-noohsohkaa.
  ni-oshki-ahpihkwehshimon-e. Kihci-noohsohk-aa.
  1- new- pillow- e.AI very- soft-be.II
  'I have a new pillow. It is very soft.'

The same is true of incorporative stems. (289)b shows that the incorporated noun *ihkwe* 'wife, woman' can be the antecedent of the object of the transitive verb in the subordinate clause. In (290)a the incorporated noun *-taapaan-* 'car' functions as the antecedent of the object in the subordinate clause. In (290)b *-naakan-* 'dish' functions as the head of the relative clause; and in (290)c the same element is the antecedent of the subject of an adverbial clause.

- (289) a. Niwii-naatihkwewe. ni-wii-naat-ihkwew-e<sup>75</sup> 1-VOL-fetch-woman-e.AI 'I want to get myself a wife.'
  - b. Pinamaa, nika-naatihkwewe e-wi-kakwecimak. pinamaa, ni-ka-naat-ihkwew-e e- wii-kakwecim-ak wait 1-FUT-fetch-woman-e.AI COM-VOL-ask-1>3.CONJ 'Wait, I'll go get my wife and ask her.'
- (290) a. Ninanaantawi-taapaane e-wii-ataaweyaan. ni-nanaantawi-taapaan-e e-wii-ataawe-yaan 1-look.for-car-e.AI COMP-VOL-buy.AI-CONJ.1 'I'm looking for a car to buy.'
  - b. Ninanaantawinaakane kaa-oshaawashkwaak.
     ni-nanaantawi-naakan-e kaa-oshaawashkwaa-k
     1-look.for-dish-e.AI COMP-blue.be.II-CONJ
     'I'm looking for a blue plate.'
  - c. Niwii-kaahsinaakane osaam e-wiinaapihkankin.
    ni-wii-kaahsi-naakan-e osaam e-wiin-aapihk-an-kin
    1-VOL-wash-dish-e.AI because COMP-dirty-metal-be.II-PL?
    'I want to wash the dishes because they are too dirty.'

The referentiality of the incorporated nominal in Ojicree, as in other languages, supports

a syntactic analysis of these constructions.

# 5.2.5 Stranded modifiers

Another common property of many NI constructions is the ability to strand modifiers (see Gerdts and Marlett 2008). In such constructions, the modifier of the incorporated nominal appears on its

<sup>&</sup>lt;sup>75</sup> As with Mohawk classical NI (Baker 1988, 1996), it appears that the noun here can also receive either a definite or an indefinite interpretation ('a/the wife'). Notice that regardless of its definiteness, the nominal can be referential (e.g. compare (290)a vs. (289)b, (290)c).

own outside the verbal complex. Mathieu (to appear) argues that DNV's in Ojibwe allow stranded modifiers. In Ojicree -e verbs also have this property.

In (291)a the second sentence has two *-e* verbs, 'have a small head' and 'have a big head', and each instance of the incorporated noun 'head' is modified by the free-standing numeral *peshik* 'one'. In (291)b the free-standing quantifier *kahkina* 'all' modifies the incorporated noun *tahsapiwin* 'chair'.

#### (291) *Possessive*

a. Niishohtikwaane koohkoosh. Peshik akaahsihtikwane, ekwa miina peshik mankihtikwane.

Niishoo-htikwaan-e koohkoosh. Peshik akaahsi-htikwan-e, two-head-e.AI monster one small-head-e.AI

ekwa miinaa peshik manki-htikwan-e and again one big-head-e.AI

'The monster has two heads. One is big and one is small.'

b. Kahkina oshki-tehsapiwine. kahkina oshki-tehsapiwin-e<sup>76</sup> all new-chair-e.AI 'All his chairs are new.'

The same holds for the incorporative *-e* verbs. The noun 'dish' in (292)a is modified by the relative clause in the same sentence; and in (292)b and (292)c the numeral *niishin* 'two' and the determiner *ohowe* 'this' are free-standing elements modifying the incorporated noun *pahpaapiwin* 'window and *-taahs-* 'pants'.

<sup>&</sup>lt;sup>76</sup> For some speakers, *kahkina* 'all' cannot be stranded.

#### (292) Incorporative

- a. Ninanaantawinaakane kaa-oshaawashkwaak.
   ni-nanaantawi-naakan-e kaa-oshaawashkwaa-k
   1-look.for-dish-e.AI COMP-be.blue.II-CONJ
   'I'm looking for a blue plate.'
- b. Nikii-piiko-pahpaapiwine niishin.
   ni-kii-piiko-pahpaapiwin-e niishin
   1-PAST-break-window-e.AI two
   'I broke two windows.'
- c. Niwii-kakwecitaahse ohowe. ni-wii-kakweci-taahs-e ohowe 1-VOL-try-pants-e.AI this 'I want to try those pants on.'

The fact that the incorporated nominal is accessible to modification by an external (stranded) modifier again supports the hypothesis that *-e* verbs are formed syntactically.

#### 5.2.6 Noun doubling

Doubling refers to a structure in which the incorporated noun is doubled by a free-standing noun in the same clause. It is reported to be possible in many DNV constructions cross-linguistically (Gerdts and Marlett 2008), but has been reported to be ungrammatical in both DNVs (Mathieu to appear) and *e*-verbs in Ojibwe (Rhodes 1976, Lochbihler and Mathieu 2007). In *-e* verbs in Ojicree a specific kind of doubling is possible, namely hyponymic doubling. Gerdts (2008) (p. 417) define hyponymic doubling as involving a "hyponymous relationship [...] between the nominal element of the denominal verb and the external NP: the nominal element in the DNV indicates a generic and the external NP gives an instantiation of a particular kind." The other

type of doubling, termed 'true doubling' by Gerdts (2008) where the free-standing nominal is identical to the incorporated nominal, is impossible with *e*-verbs in Ojicree, as it is in Ojibwe.<sup>77</sup>

The incorporated nominal in possessive stems can be doubled by a free-standing nominal that provides more specific information about the kind of thing being talked about. The following illustrate that while hyponymic doubling is possible (the (a) examples), true doubling is not (the (b) examples).<sup>78</sup>

- (293) a. Nitewisite ninamancisitaan / ninamancisit.
   ni- tewi-sit-e ni-namanci-sit-aan / ni-namanci-sit
   1-pain-feet-e.AI 1-left-foot-PL? 1-left -foot
   'My left foot is hurting.'
  - b. \*Nitewisite nisitaan/ nisit. ni-tewi-sit-e ni-sitaan / ni-sit 1-sore-foot-e.AI 1-foot.PL 1-foot intended: 'My foot is sore.'
- (294) a. Niwiini-ahpihkwehshimone nitoshki-ahpihkwehshimon.
   ni-wiini-ahpihkwehshimon-e nit-oshki-ahpihkwehshimon
   1- dirty- pillow-e.AI 1-new-pillow
   'My new pillow is dirty.'
  - b. \*Niwiini-ahpihkwehshimone nitahpihkwehshimon. ni-wiini-ahpihkwehshimone nitahpihkwehshimon. ni-wiini-ahpihkwehshimon-e nit-ahpihkwehshimon 1- dirty-pillow-e.AI 1-pillow
    'My pillow is dirty.'
- (295) a. Osaam hsha nimankahkisine nitoshkahkisinan. osaam hsha ni-mank-ahkisin-e nit-oshk-ahkisin-an too EMPH 1- big- shoe-e.AI 1-new-shoe-PL
  'My new boots are too big.'

- (i) Ni-tewi-sit-e ni-namanci-sit-aan-ink
   1-sore-foot-e.AI 1-left- foot-PL?-LOC
   'My left foot is sore' (lit. 'I am sore-footed in my left foot.')
- (ii) Ni-tewi-sit-e ni-sit-ink
   1-sore-foot-e.AI 1-foot-LOC
   'My foot is sore.' (lit. 'I am sore-footed in my foot.')

<sup>&</sup>lt;sup>77</sup> Mathieu to appear, Rhodes and Lochbihler and Mathieu 2007 seem to talk only about true doubling. They do not specifically discuss hyponymic doubling.

<sup>&</sup>lt;sup>78</sup> Interestingly, the noun can also be repeated in a locative, in which case both hyponymic doubling (i) and true doubling (ii) appear to be grammatical:

 \*Osaam hsha nimankahkisine nimahkisinan.
 osaam hsha ni-mank-ahkisin-e ni-mahkisin-an too EMPH 1- big- shoe-e.AI 1-shoe-PL intended: 'My boots are too big.'

The following examples show that the same is true for incorporative stems. Again,

hyponymic doubling, but not true doubling, is permitted.

- (296) a. Niwii-naatihkwewe nitoshkihkwem.
   ni-wii- naat-ihkwew-e nit-oshk-ihkwe-m
   1-VOL-fetch-woman-e.AI 1-new-woman-POSS
   'I am going to bring my new wife.'
  - \*Niwii-naatihkwewe nitihkwem.
     ni-wii-naat-ihkwewe nit-ihkwe-m
     1-VOL-fetch-woman-e.AI 1-woman-POSS
     intended: 'I am going to bring my wife.'
- (297) a. Niwii-nanaantawi-mooswe kihci-moos.
   ni-wii-nanaantawi-moosw-e kihci-moos
   1-VOL-look.for-moos-e.AI big-moose
   'I am going to hunt/look for a big moose.'
  - b. \*Niwii-nanaantawi-kihci-mooswe kihci-moos.
    ni-wii-nanaantawi-kihci-moosw-e kihci-moos
    1- VOL-look.for- big-moos-e.AI big-moose
    intended: 'I am going to hunt/look for a big moose.'
- (298) a. Nikii-piiko-pahpaapiwine nitoshki-pahpaapiwin. ni-kii-piiko-pahpaapiwin-e nit-oshki-pahpaapiwin 1-PAST-break-window-e.AI 1-new- window 'I broke my new window.'
  - Nikii-piiko-pahpaapiwine nipahpaapiwin.
     ni-kii-piiko-pahpaapiwin-e ni-pahpaapiwin
     1-PAST-break-window-e.AI 1-window
     intended: 'I broke my window.'
  - c. \*Nikii-piiko-oshki-pahpaapiwine nipahpaapiwin. ni-kii-piiko-oshki-pahpaapiwin-e ni-pahpaapiwin 1-PAST-break-new-window-e.AI 1-window intended: 'I broke my new window.'

- (299) a. Ninanaantawi-kihci-ahpihkwehshimone oshki-ahpihkwehshimon.
  ni-nanaantawi-kihci-ahpihkwehshimone oshki-ahpihkwehshimon
  1- look.for- big- pillow- e.AI new-pillow
  'I am looking for a new pillow that is big.'
  - b. \*Ninanaantawi-kihci-ahpihkwehshimone nitahpihkwehshimon.
     ni-nanaantawi-kihci-ahpihkwehshimon-e nit-ahpihkwehshimon
     look.for- big- pillow- e.AI 1-pillow
     intended: 'I am looking for my big pillow.'

Hyponymic doubling is also the norm in classificatory noun incorporation (Mithun 1984,

Rosen 1989). Notice, however that the construction under consideration cannot be a true case of classificatory NI. The free-standing noun cannot simply denote a subset of the entities denoted by the incorporated nominal. For instance, the following, where the free-standing nominal *nimoosom* 'my sweetheart' is a specific kind of *ihkwe* 'woman', is ungrammatical.

(300) \*Niwii-naatihkwewe nimoosom.
 ni-wii-naat-ihkwew-e ni-moosom
 1-VOL-fetch-woman-e.AI 1-sweetheart
 intended: I am going to bring my sweetheart/girlfriend.'

Crucially, the free-standing nominal must be an exact copy of the incorporated nominal plus a modifier, as in the following sentence (repeated from (296)a), where the free-standing nominal *ihkwe* 'woman' is a copy of the incorporated nominal with the addition of the modifier *oshki*-'new':

(301) Niwii-naatihkwewe nitoshkihkwem.
ni-wii- naat-ihkwewe nit-oshk-ihkwe-m
1-VOL-fetch-woman-e.AI 1-new-woman-POSS
'I am going to bring my new wife.'

### 5.2.7 Summary

To sum up, I have argued that *-e* verbs are formed in syntax. First, they are completely productive and compositional. Second, they can be morphologically complex and include

modifiers, suggesting that -*e* attaches to *n*P's and not to bare roots. Further, an *n*P in an -*e* verb can be modified by stranded modifiers, and can be doubled by a hyponymous free-standing nominal. All these properties, which are also common in DNV and NI constructions in other languages (Mathieu 2009, to appear, Gerdts and Marlett 2008, Massam 2009) suggest that these verbs are formed in syntax. Moreover, I have shown that incorporative and possessive -*e* stems pattern together in all respects, which points to a common analysis of these constructions, to be developed in 5.4. In the next section I look at the internal phonology of *e*-verbs, which has further interesting implications for their structure.

# 5.3 Phonology on the boundary

In this section, I will be concerned with the boundary between the incorporated nominal and the element on the left edge (the initial). I will show that this boundary behaves like the boundary between a weak root and the left-edge modifier in a complex stem, suggesting that like the latter, it is a syntactic boundary. In some respects, the boundary between the nominal and the left-edge element in an *-e*-verb appears to be even stronger than the corresponding boundary in a complex stem, sharing some properties with stem-external boundaries. I will also show that for the purposes of phonology, possessive and incorporative stems also behave alike.

Recall the phonological behavior of the stem-internal syntactic boundary in complex stems (the boundary between the left-edge element and the weak root). The vowel *i*, which I consider to be the adjectival head *a* that defines the category of the left-edge modifier (following Piggott and Newell's (2006) proposal for preverbs), triggers palatalization on the preceding *t* of the root (cf.  $\S2.3$ ). This is illustrated again in (302)a. For the purposes of palatalization, the boundary in question in (302)a behaves like the stem-external (preverb-stem) boundary. In

(302)b, palatalization is triggered by the morpheme *i* which is the category-defining head for the stem-external modifier *onci*-.

(302) Palatalization in complex stems and at the preverb-stem boundary

| a. | oncipahtoo<br>[onci-pahtoo stem]<br>from-run.AI<br>'run from a certain place.' | stem-internal |
|----|--|---------------|
| b. | onci-pimipahtoo<br>onci-[pimi-pahtoo stem]<br>from-along-run.AI                | stem-external |

For completeness, the palatalization pattern inside a simple stem is shown in (303): here palatalization is triggered by a morphemic i (303)b but not by epenthetic i (303)a.

(303) Palatalization in simple stems

'warn s.o.'

| a. | ontin                      | epenthetic <i>i</i> |
|----|----------------------------|---------------------|
|    | ont-n                      |                     |
|    | trom-1A                    |                     |
|    | 'get s.o. from somewhere.' |                     |
| b. | oncih                      | morphemic <i>i</i>  |
|    | ont-ih                     |                     |
|    | from TA                    |                     |
|    | 110111-1A                  |                     |

Despite this apparent similarity between the stem-internal boundary in complex stems and stem-external boundaries illustrated in (302) the two boundaries behave differently when it comes to hiatus tolerance. Vowel hiatus is consistently tolerated on the preverb-stem boundary (Piggott and Newell 2006), as in (304)a, but must be resolved by truncation (including depalatalization if necessary) inside the stem, as in (304)b.

| (304) | a. | Piici-aahsamaahte<br>piici-[aahsamaahte stem]<br>hither-sun.is.shining.II<br>'The sun is shining in this direction.'       | stem-external |
|-------|----|--|---------------|
|       | b. | Piitaahshi<br>[piic <b>i-aa</b> hshi <sub>stem</sub> ]<br>hither-fly.AI<br>'S/he (e.g.a bird) is flying in this direction' | stem-internal |

Let us now turn back to *e*-verbs and see what the phonology tells us there. Recall that in structures with incorporation, the boundary to the left of the incorporated nominal is stem-internal. Thus, only (305)a and not (305)b is a well-formed full stem.

- (305) a. Nitoshki-masinahikane. ni-[oshki-masinahikan-e <sub>EP</sub>] 1- new- book-e.AI 'I have a new book.'
  - b. \*Nimasinahikane.
    ni-[masinahikan-e EP]
    1- book- e.AI
    'I have a book.'

In many ways, the phonology on the boundary between the nominal and the left-edge constituent is exactly like the analogous stem-internal boundary in a complex stem. First, as the following examples illustrate, the vowel *i* is obligatorily present here, as it is in complex stems, regardless of the type of cluster. In particular, the cluster *sn* and *nt* are both legal clusters (cf. §2.3.1 in Chapter Two), yet the vowel *i* appears in both cases. This suggests that, like in complex stems, the left-edge constituent here is a phrase, and the vowel *i* is a category-defining head, not an epenthetic segment inserted for phonological reasons.

(306) a. kaahsinaakane / \*kaah**sn**aakane kaahsi-naakan-e wash-dish-e.AI 'wash dishes' b. wiinitaapaane / \*wii**nt**aapaane wiini-taapaan-e dirty-car-e.CAI 'His/her car is dirty'

As expected, this vowel, being a morpheme, always triggers palatalization on the preceding t of the root:

- (307) a. Kakiipaacinaapewe / \*kakiipaa**ti**-naapewe kakiipaaci-naapew-e silly- man- e.AI 'Her husband is silly.'
  - b. Naaci-naapewe / \*naati-naapewe naaci-naapew-e fetch-man-e.AI 'fetch a man/husband.'

Thus, with respect to palatalization, the boundary between the left-edge element and the nominal in *e*-stems behaves like the corresponding boundary in complex stems, which in turn behaves exactly like a stem-external boundary. This suggests that, like the other two, it is a syntactic boundary.

Bearing in mind this similarity between -e stems and complex stems, we would also expect hiatus resolution in -e stems to pattern as it does in complex stems. That is, we expect the hiatus to be resolved by truncation, as it is in (304)b. However, this prediction does not hold. There is no requirement to resolve the hiatus on the boundary between the nominal and the
left-edge constituent. In both possessive (308) and incorporative (309) stems, hiatus resolution is possible but is entirely optional.<sup>79</sup>

(308) Possessive

- a. Nimanki-ahpihkwehshimone / Nimankahpihkwehshimone ni-manki-ahpihkwehshimon-e
  1- big- pillow-e.AI
  'I have a new pillow.'
- b. Niwiini-ahpihkwehshimone / Niwiinahpihkwehshimone ni-wiini-ahpihkwehshimon-e
  1- dirty- pillow- e.AI
  'My pillow is dirty.' / 'I have a dirty pillow.'
- c. Nitoshki-akintaahsone / Nitoshk-akintaahsone ni-oshki-akintaahson-e
  1- new- number-e.AI
  'I got a new telephone number last year.'
- d. Nimino-ahpihkwehshimone / Niminowahpihkwehshimone ni-mino-ahpihkwehshimon-e
  1- good- pillow-e.AI
  'I have a nice pillow.'
- e. Oshki-aniipihshiwe / oshkaniipiihshiwe shikop. oshki-aniipiihshiw-e shikop new- leaf-e.AI 'The tree has new leaves'

<sup>&</sup>lt;sup>79</sup> In some exceptional cases, hiatus resolution appears to be impossible, e.g. with the noun *ishinishahikan* 'parcel', both when it is incorporated (i) and when it is free-standing preceded by a modifier (ii)

Niwii-naaci-ishinishahikane / \*Niwii-naatishinishahikane ni-wii-naaci-ishinihshahikan-e 1-VOL-fetch-parcel-e.AI

<sup>&#</sup>x27;I am gonna go get the parcel.'

 <sup>(</sup>ii) Oshki-ishinishahikan / \* Oshkishinishahikan oshki-ishinishahikan new-parcel 'a new parcel'

- (309) Incorporative
  - a. Niwii-mani-ahpihkwehshimone / Niwii-manahpihkwehshimone ni-wii-mani-ahpihkwehshimon-e
    1-VOL-buy-pillow-e.AI
    'I want to buy a pillow.'
  - b. Niwii-naaci-ahpihkwehshimone / Niwii-naat-ahpihkwehshimone ni-wii-naaci-ahpihkwehshimon-e 1-VOL-fetch-pillow-e.AI
    'I am gonna go get a/the pillow.'
  - c. Nikii-piiko-ahcaanihshiwe / Nikii-piikwahcaanihshiwe ni-kii- piiko-ahcaanihshiw-e / piikw-ahcaanihshiw-e 1-PAST-break- ring-e.AI
    'I broke my ring.'
  - d. Niwii-naaci-oshki-tehsapiwine / Niwii-naatoshki-tehsapiwine ni-wii-naaci-oshki-tehsapiwin-e / naat-oshki-tehsapiwin-e
    1-VOL-fetch-new-chair-e.AI
    'I am going to bring a new chair.'

Thus, for the purposes of hiatus resolution, the boundary in question patterns like a

stem-external boundary rather than a stem-internal one.<sup>80</sup> Indeed, the same patterning is observed

on the boundary between a modifier and a nominal in a free-standing noun phrase. Here, also,

the hiatus can be either resolved or left as it is:

- (310) oshki-ahpihkwehshimon / oshkahpihkwehshimon oshki-ahpihkwehshimon new- pillow
   'a new pillow'
- (311) niwiini-ahpihkwehshimon / niwiin-ahpihkwehshimon ni-wiini-ahpihkwehshimon 1-dirty- pillow 'my dirty pillow.'

 $<sup>^{80}</sup>$  To be precise, Piggott and Newell (2006) argue that hiatus on the preverb-stem boundary *cannot* be resolved by truncation. In their analysis, this is due to the Phase Impenetrability Condition: the preverb and the stem are separate phases, and the elements in different phases cannot see each other (Chomsky 2001). At a first glance, this is different from what I demonstrate here for *e*-stems: with *e*-stems, hiatus is not obligatory but almost always possible. However, as I argue elsewhere (Slavin 2011), the situation described here is also true for the preverb-stem boundary to some extent: hiatus is also quite often optionally resolved on the boundary between a stem and a preverb (contrary to Piggott (2006)'s predictions).

(312) oshki-akintaahson/ oshkakintaahson new-number'a new humber'

Thus, for the purposes of hiatus resolution, the boundary between the nominal and the left-edge element in *e*-stems behaves like a stem-external boundary.

There is a small group of exceptions to this generalization. This group constitutes a small class of nouns traditionally called *medials* in the Algonquian literature and includes body parts, some clothing items (pants, shoes), some culturally significant items (net, rock), and a handful of nouns that often appear incorporated (woman, car). When these begin with a vowel and are incorporated without a modifier, they trigger hiatus resolution either by truncation or by a word-internal epenthesis (w-epenthesis)<sup>81</sup>.

| (313) | a. | Nimihshiinowaapite.<br>ni-mihshiino- <b>w</b> -aapit-e<br>1- many- w-tooth-e.AI<br>'I have many teeth.' | w-epenthesis, word internal |
|-------|----|---|-----------------------------|
|       | b. | Nitoshkahsapii / *nitoshki-ahsapii<br>ni-oshk-ahsap-ii<br>1-new-net-e.AI<br>'I have a new net.'         | truncation                  |
|       | C. | Nitoshkihkwewe / *nitoshki-ihkwewe<br>nitoshki-ihkwe-e<br>1-new-woman-e.AI<br>'I have a new wife.'      | truncation                  |

<sup>&</sup>lt;sup>81</sup> One exception to this group of exceptions is the body part medial *eshkan* 'horn'. In some cases truncation is not possible with this noun, as in (i), which might be due to the fact that *e* is a long vowel. In other cases, as in (ii), hiatus resolution is obligatory as with other body part medials. Interestingly, however, in these instance hiatus can optionally be resolved, not with truncation but with a *t*-epenthesis, a very uncommon strategy of hiatus resolution in such contexts (cf. Piggott and Newell 2006).

- (i) Nit-oshki-eshkan-e / \*nitoshkeshkane
  1- new- horn-e.AI
  'I have new horns.'
- (ii) Nipiiw-eshkan-e / nipiiwiteshkane / \*nipiiwi-eshkane wet-horn-e.AI 'His/her horns are wet.'

| d. | Nikakiipaatihkwewe / *Nikakiipaaci-ihkwewe<br>ni-kakiipaat-ihkwew-e | truncation |
|----|---|------------|
|    | 1- silly- woman-e.AI  |            |
|    | 'I have a silly wife.'  |            |
| e. | Nimankahkisine / *Nimanki-ahkisine                                  | truncation |
|    | ni-mank-ahkisin-e   |            |
|    | 1- big- shoe-e.AI   |            |
|    | 'I have big shoes.'   |            |
| f. | Niwii- naatahkisine / *Niwii-naaci-ahkisine                         | truncation |
|    | ni-wii-naat-ahkisin-e   |            |
|    | 1-VOL-fetch-shoe-e.AI   |            |
|    | 'I'm going to bring (my) shoes.'                                    |            |
| g. | Ninanaantawahkisine / *Ni-nanaantawi-ahkisin-e                      | truncation |
|    | ni-nanaantawi-ahkisin-e   |            |
|    | 1-look.for-shoe- e.AI   |            |
|    | 'I am looking for shoes.'   |            |

To sum up, except for a small group of lexically specified nouns, the boundary between the nominal and the left-edge constituent in *e*-stems behaves like a syntactic boundary. For the purposes of palatalization it behaves like the corresponding boundary within a complex stem which in turn behaves identically to the preverb-stem (stem-external) boundary. For the purposes of hiatus resolution, the boundary in question in *e*-stems behaves like a stem-external boundary. The question that remains unanswered here is the different different patterning of hiatus resolution on the three types of boundaries. Hiatus is obligatorily resolved in complex stems, but can be (and sometimes must be) preserved on the preverb-stem boundary and in *e*-stems. If all these three boundaries are syntactic boundaries, as I argue here, what accounts for the different treatment of hiatus? This question must be left for another study.

### 5.4 e-verbs and the LER

I have shown that (i) e-verbs are formed in syntax, and (ii) possessive and incorporative e-stems share many structural properties that suggest a common analysis. However, it remains to be established exactly how these verbs are formed, and whether it is indeed possible to provide a single analysis of incorporative and possessive stems. In this section I tackle these questions.

Recall that two common ways to analyze these verbs in the literature are (i) as an instance of classical NI in the sense of Baker 1988, 1996 (e.g. Rhodes 1976, Lochbihler and Mathieu 2007, Mathieu to appear) with the suffix *-e* acting as a detransitivizer, or (ii) specifically for possessive stems, as an instance of DNV-formation from a compound nominal (Wolfart 1971). I propose an altogether different solution.

I will argue that *e*-stems have a more dynamic structure than previously assumed. Specifically, I will argue that the suffix *-e* selects for a small clause complement and relates the proposition in the small clause to the animate argument in its specifier. I will also show that the structure of *e*-stems is somewhat similar to that of complex stems advanced in the previous chapter. In *e*-verbs, the nominal appears instead of a weak root. As in complex stems, the left-edge element in *e*-stems merges low in the structure and moves to the specifier of the Event Phrase.

I begin by arguing against a compound-nominal DNV analysis (Wolfart 1971) and demonstrate that in fact, the nominal has a tighter connection with the suffix than with the element on the left edge (§5.4.1). In §5.4.2, I argue for a common analysis of possessive and incorporative stems. Finally, in §5.4.3, I introduce a new crucial piece of data and develop a syntactic analysis of these stems.

#### 5.4.1 Against the compound nominal DNV analysis

Wolfart (1971) proposes to treat possessive e-verbs as denominal verbs formed from a compound noun. Thus, as the bracketings in the following examples indicate, the complex nominal is formed first and then the suffix -e is added to this nominal.

- (314) tahkisite [tahki-sit]-e cold-foot-e.AI 'S/he has cold feet.'
- (315) oshki-ahpihkwehshimone
   [oshki-ahpihkwehshimon]-e
   new- pillow- e.AI
   'S/he has a new pillow.'

There are two immediate problems with this view. The first and most obvious problem, noticed by Wolfart himself, is that in many cases the corresponding compound nominal does not exist on its own. This is true of many body-part nominals (316), but the absence of the compound nominal in these cases might have to do with their special status as dependent nouns. However, the same problem arises with many independent nominals. Thus, the compound noun in (317)b does not appear independently even though the verb in (317)a is perfectly well-formed and the nominal in question is an independent nominal *aanahkonaa* 'bannock'.

- (316) a. tahkisite tahki-sit-e cold-foot-e.AI 'S/he has cold feet.'
  - b. \*nitahkisitan ni-tahki-sit-an 1-cold-foot-PL intended: my cold feet

- (317) a. Nipakone-aanahkonaawe.
   ni-pakone-aahahkonaaw-e
   1-hole-bannock-e.AI
   'My bannock has a hole in it.'
  - b. \*pankone-aanaohkonaa pakone-aanahkonaa hole-bannock intended: 'a bannock with a hole.'

The second problem with Wolfart's approach is that it is not clear why the nominal element in these stems must be a compound. Certainly, other DNV-forming suffixes in Ojibwe do not impose such a requirement. Thus, both 'big rabbit' and the simple noun 'rabbit' can join with the suffix *-wi* 'be' to form a denominal verb:

- (318) a. kihci-waapoosiwi kihci-waapoosi-wi big-rabbit-be.AI 'It is a big rabbit.'
  - b. waapoosiwi waapoosi-wi rabbit-be.AI 'It is a rabbit.'

Thus, there is no strong evidence that the nominal forms a constituent with the left-edge element other than the intuition that together they describe the subject and therefore should be treated as endo-centric compounds.

By contrast, there is strong evidence that the combination of the nominal plus the suffix acts as a unit, to the exclusion of the left-edge element. The first piece of evidence comes from the nature of the left-edge constituent and what it can refer to. It appears that in some cases, the left-edge constituent does not have anything to do with the nominal but clearly refers to the constituent formed by merging the nominal with the suffix *-e*. For instance, to express age, an everb is build by incorporating the noun *ahkiiwin* 'year', with the numeral occupying the left edge

slot, as in (319)a. However, if one's age is above ten, then the numeral cannot appear inside the stem. Instead it stands independently, while the left-edge slot of the verb is occupied by the relative preverb *tahso-* 'so many', referring to that numeral, as in (319)b. Similarly, to enquire about someone's age, the same construction is used with the wh-element replacing the numeral, as in (319)c.

- (319) a. Nininnkotwaahsoahkiwine ni-ninkotwaahso-[ahkiwin-e] 1-six-year-e.AI 'I am six years old.'
  - b. Niishitana nitahso-ahkiwine niishitana ni-tahso-[ahkiwin-e] twenty 1-so.many-year-e.AI 'I am twenty years old.'
  - c. Aan eh-tahso-ahkiwineyan? aan eh-tahso-ahkiiwin-e-yan how COMP-so.many-year-e.AI-2.CONJ 'How old are you?'

Importantly, the complex nominal \**tahso-ahkiiwin* does not exist.<sup>82</sup> Moreover, it is clear that in the cases above *tahso-* 'so many' does not simply refer to the nominal but to the constituent meaning 'have X years', that is, the combination of the nominal with the suffix *-e*.

The construction with *tahso-* is not specific to the noun 'year'. It is productively used with any nominal, such as the noun 'cup' below. In this case also *tahso-* has to join with the

- (i) tahso-ahkiiwin-k every-year-CONJ
  - 'every year'

<sup>&</sup>lt;sup>82</sup> It should be noted here that *ahkiiwin* 'year' belongs to a class of nominals that are ambiguous in their status as nouns or verbs, and can be used as either. For instance, in (i) it is a verb, confirmed by the fact that it bears conjunct morphology. As (i) the combination of *tahso-* 'so many' and *ahkiiwin* 'year' is possible if *ahkiiwin* is used as a verb in a conjunct mode. In that case, the resulting clause means 'every year', so it is clear that it is not the same thing as what is incorporated in (319) above.

Importantly, *tahso*- can be used with the meaning 'every' only with impersonal (II) verbs that denote temporal units Thus, as shown in (320)d it is ungrammatical with 'cup' because 'cup' can never be used as a verb. See also Valentine 2011 that lists *tahso*- for various Ojibwe dialects only as a preverb, not a prenoun.

combination of the noun and the suffix, not with the nominal, because the corresponding compound nominal does not exist, as shown in (d).

- (320) a. Niniisho-minihkwaakane ni-niisho-minihkwaakane 1-two-cup-e.AI 'I have two cups.'
  - b. Niishitana nitahso-minihkwaakane niishitana ni-tahso-minihkwaakan-e twenty 1-so.many-cup-e.AI 'I have twenty cups.'
  - c. Aan eh-tahso-minihkwaakaneyan? aan eh-tahso-minihkwaakan-e-yan what COMP-so.many-cup-e.AI-2.CONJ 'How many cups do you have?'
  - d. \*tahso-minihkwaakan tahso-minihkwaakan so.many-cup

Another element that commonly appears on the left edge but does not refer to the nominal is *kiki*- 'with, including' (Valentine 2011), which productively appears in e-verbs and denotes something like 'immediate possession', 'have on one's self'.

- (321) a. kiki-taahse kiki-taahs-e with-pants-e.AI 'S/he has pants on.'
  - b. nikikitaapaane
    ni-kiki-taaapaan-e
    1-with-car-e.AI
    'I have a car (on me, right now).'
  - c. nikikitehsapiwine ni-kiki-tehsapiwin-e 1-with-chair-e.AI
    'I have a chair (on me, right now).'

- d. nikikinaakane
  ni-kiki-naakan-e
  1-with-dish-e.AI
  'I have a plate (on me, right now).'
- e. nikiki-ahpihkwehshimone.
  ni-kiki-ahpihkwehshimon-e
  1-with-pillow-e.AI
  'I have a pillow (on me, right now).'

As in the case of *tahso-* above, *kiki-* here does not refer to the nominal, but rather to the constituent formed by merging the noun and the suffix *-e*.

Another argument that the nominal is semantically closer to the suffix than to the leftedge element comes from doubling. Recall from §5.2.6 that Gerdts (2008) identify two types of noun doubling in DNV constructions: true doubling (the free-standing noun is identical to the incorporated one and refers to the same set of entities), and hyponymic doubling, when the freestanding noun provides more specific information about the entity that the incorporated noun refers to, thus restricting the set of entities that the incorporated noun refers to. We have determined that only hyponymic doubling is available in Ojicree e-stems. This is illustrated in (322), with the incorporative stem, where the NP *kihci-moos* 'big moose' refers to a specific kind of moose, and the incorporated noun *moos* refers to the more general kind.

(322) Ninanaantawi-mooswe kihci-moos. ni-nanaantawi-moosw-e kihci-moos 1-look.for-moose-e.AI big-moose 'I am looking for a big moose.'

With this in mind, and assuming that incorporative and possessive stems are subject to the same constraint, consider the case of doubling in the possessive stem below. If the e-verb were a DNV verb incorporating the complex noun 'big pillow' then the discourse below would be odd, because it would not be a case of hyponymic doubling (nor a case of true doubling either). The free standing NP 'new pillow' does not refer to a subset of 'big pillows' but to a different (although potentially overlapping) set of entities. This suggest that the nominal is closer to the suffix and the left-edge element operates independently, the sentence can be straightforwardly understood as its English translation, 'my new pillow is big', with the left-edge element being added later.

(323) Nimankahpikwehshimone nitoshki-ahpihkwehshimon ni-mank-ahpihkwehshimon-e ni-oshki-ahpihkwehshimon 1- big- pillow-e.AI 1-new-pillow
'My new pillow is big.'

Thus, there is clear evidence that in the formation of e-stems the nominal has a closer semantic or structural relationship with the suffix, while the left-edge element takes scope over the constituent formed by merging the nominal and the suffix. As a first approximation, I propose the structure in (324) to account for these observations:

(324) oshki-ahpihkwehshimone
[oshki- [ahpihkwehshimon- e ]]
new- pillow- e.AI
'S/he has a new pillow.'



In this structure, the suffix -e is a *v*-head that introduces an internal argument in its specifier. Assuming, consistent with the proposal advanced in the previous chapters, that every stem is an EP, I propose that the left-edge element appears in Spec, EP position, as does the left-edge element in complex stems. This structure allows the constituent formed by a merger of the nominal and the suffix -e to act as a unit, and for the left-edge element to take scope over this constituent. I will update this structure later in this chapter (§5.4.3), arguing that, as with complex stems, that the left-edge element does not merge at Spec, EP but moves there from a lower position. However, before proceeding with the analysis, I will argue that possessive and incorporative stems should have the same analysis.

## 5.4.2 In favor of a common analysis of incorporative and possessive -e-stems

I have already demonstrated in §5.2 above that the two types of e-stems share many properties. This suggests, but does not demonstrate conclusively, that they have the same structure. In what follows I present more definitive evidence.

Most e-verbs considered so far can be clearly identified as belonging to one of the two classes, possessive or incorporative. For instance, (325) is unambiguously a possessive e-stem, while (326) is unambiguously an incorporative e-stem.

- (325) Nitoshkinaakane ni-oshki-naakan-e 1-new-dish-e.AI 'I have a new plate.'
- (326) Ninanaantawinaakaneni-nanaantawi-naakan-e1-look.for-dish-e.AI'I am looking for a plate.'

There is, however, a large number of forms that cannot be clearly put in one class or the other, and in fact, are ambiguous. For instance, the verb *piikw-ahcaanihshiw-e* can mean 'break a/one's ring' or 'have a broken ring'. Under the eventive reading it is compatible with a phrase 'using an axe' in the same sentence, as in (327), confirming that it does not mean 'have' here.

(327) Nikii-piikwahcaanihshiwe waakaahkwat e-aapacihtooyaan.

ni-kii-piikw-ahcaanihshiw-e waakaahkwat e-aapacihtoo-yaan 1-PAST-break-ring-e.AI axe COMP-use.TI-1.CONJ 'I broke my ring using an axe.'

On the other hand the same form can be used in a context where it is unambiguously stative, meaning 'have a ring'. Consider the following scenario: Kids are playing treasure hunt outside, collecting various pieces of garbage as their 'treasures'. At the end everybody brings their trophies and shows them to the others. In this context, (328) is grammatical, confirming that *piikw-ahcaanihshiw-e* can be stative.

(328) Piikwahcaanihshiwe Aya ekwa akwaakihshi-aswacikane Martin piikw-ahcaanihshiw-e aya ekwa akwakihshi-aswacikan-e martin break- ring-e.AI aya and rusty- container- e.AI martin 'Aya has a broken ring and Martin has a rusty container.'

Another group of ambiguous stems are those that contain the stem-internal modifier

tahki- 'cold'. In this chapter, verbs such as (329) and (330) were grouped with possessive e-

stems. Indeed, the stativity of these stems is confirmed by the presence if maawac 'very' in

(330).

- (329) tahkisite tahki-sit-e cold-foot-e.AI 'His/her feet are cold.'
- (330) Maawac nitahkaapihkinaakane. maawac ni-tahk-aapihk-i-naakan-e very 1-cold-metal-i-dish-e.AI 'My plate is very cold.'

However, they can also be interpreted as incorporative. The following examples show that they can be used as an answer to a question 'What are you doing?' confirming that here they denote activities, and cannot have the meaning 'have'. This is true of stems with either independent (a, b) or dependent (c, d) nouns.

- (331) a. Aan entootaman? Nitahkaapihkipimpanihcikane
  aan en- tootam- an? ni-tahk-aapihki-pimpanihcikan-e
  what COMP-do.AI-2.CONJ 1-cold-metal-engine-e.AI
  'What are you doing?' 'I am cooling the engine.' / # 'My engine is cool.'
  - b. Aan entootaman? Nitahkaapihkinaakane.
    aan en-tootam- an? ni-tahk-aapihki-naakan-e
    what COMP-do.AI-2.CONJ 1-cold-metal-dish-e.AI
    'What are you doing?' 'I am cooling the plates.' / # 'My plate is cold.'
  - c. Aahte pinamaa, nika-tahkiyinkwe.
    aahte pinamaa ni-ka- tahki-yinkw-e
    please wait 1-FUT-cold- face- e.AI
    'Wait, I will cool my face (e.g. after a run).'
  - d. Aahte pinamaa, nika-tahkiikitaahse.
    aahte pinamaa ni-ka- tahk- iik- i-taahs-e
    please wait 1-FUT-cold-cloth-i-pant-e.AI
    'Wait, I will cool my pants (e.g. after taking them out of a drier).'

Given these ambiguities, it would be preferable if the same analysis could be given for possessive and incorporative stems. Because incorporative stems clearly cannot be given Wolfart's analysis, I will assume that it is not right for possessive stems either.

Another argument that points to the same analysis comes from modification. As noted above, there is no limit to the number of pronominal modifiers that can be incorporated together with the nominal, just as there is no limit to the number of preverbal modifiers that can precede the verb stem. Consider the stems in (332). The first one (a) is unambiguously incorporative, because of the initial *nanaantawi-* 'look for'. The second one (b) is unambiguously possessive, because of the adjectival element *oshaawashko-* 'blue'. The third one (c) has both these elements, and can be interpreted in two ways. First, it can be interpreted as an incorporative stem, a version of (a), except that in this case the incorporated nominal *-taahs* 'pants' is incorporated together with its modifier *oshaawashko-* 'blue'. Second, it can be interpreted as a possessive stem (as in (b)) preceded by the preverb *nanaantawi-* 'look for', in which case the

verb would literally mean 'S/he is looking to have blue pants', with *nanaantawi*- adjoining to EP (a full stem).

- (332) a. Nanaantawitaahse anaantawi-taahs-e look.for-pants-e.AI 'S/he is looking for pants.'
  - b. Oshaawashkotaahse oshaawashko-taahs-e blue- pants-e.AI 'S/he has blue pants.'
  - c. Nanantawi-oshaawashkotaahse nanaantawi-oshaawashko-taahs-e look.for-blue-pants-e.AI 'S/he is looking for blue pants'

An approach that treats incorporative and possessive stems differently would have to choose between the two possible analyses of the verbal complex in (c). However, there is no particular reason to have to decide between them, as they are both equally adequate. It is much more reasonable to conclude that the two kinds of e-stems are built with the same suffix and have the same structure.

## 5.4.3 The source of the LER in e-stems

The two major properties of e-stems that were argued for in the course of this chapter are (i) the incorporated nominal is an nP, not a bare root; (ii) the left-edge element takes scope over the the constituent formed by combining the nominal and the suffix -e. In the latter property, in particular, these stems are strikingly similar to complex stems, with the nP acting in place of a weak root. Recall that in Chapter 4 I argued for a semantic view of the LER in complex stems, proposing that the left-edge element merges as a complement of the weak root and then raises to

Spec, EP. In what follows, I argue that *e*-verbs are parallel to complex stems in that as well. In this section, I introduce some new data that further shed light on the relation between the nominal and the left-edge element in these verbs. Based on that, I develop the final structures for these stems.

As in the case of complex stems, the left-edge element is obligatory with e-verbs. Thus, (333)a, but not (333)b, is a well-formed stem.

- (333) a. Nitoshki-ahpihkwehshimone ni-oshki-ahpihkwehshimon-e 1-new-pillow-e.AI
  'I have a new pillow.'
  - b. \*Nitahpihkwehshimone ni-ahpihkwehshimon-e 1-pillow-e.AI intended: 'I have a pillow.'

In the case of complex stems, I argued that the requirement is semantic: the weak root has a gap in its meaning. An obligatory complement fills this gap and then moves to Spec, EP. For *e*-verbs, the same explanation cannot hold. Here, what the verbal head combines with is an *n*P and not a bare root. Indeed, a bare root cannot appear with *-e*, as the following examples indicate. The noun *nipewikamik* 'bedroom' is complex noun consisting of the root *-kamik* 'place/room' preceded by the noun *nipewin* 'bed'. Example (a) illustrates how this noun could be incorporated without any additional material on the left-edge: the root *-kamik* here would merge with the suffix and the noun *nipewin* 'bed' would occupy the position of the left-edge element. The resulting stem is ungrammatical. By contrast, when the whole noun *nipewikamik* is incorporated, with another element occupying the left-edge slot (b), the result is grammatical.

- (334) a. \*Ninipewikamikwe.
   ni-nipewi-kamikw-e
   1-bed-room-e.AI
   intended: 'I have a bedroom.'
  - b. Nitoshki-nipewikamikwe. ni-oshki-[nipewi-kamikw]-e 1-new- bed-room- e.AI 'I have a new bedroom.'

Thus, unlike the case of complex stems where a verbal head merges with a weak root, the suffix *-e* must merge with a full nP. An *n*P, as a phasal projection, cannot be said to be semantically deficient. Why, then, is the left-edge element obligatorily present in these stems? After all, if the suffix *-e* means something like 'have', why can't one say 'I have a pillow' (333)b, but only 'I have a new pillow' (333)a?

As a first step towards an explanation, consider the new set of data below, which suggest that not every possible *e*-stem of the same type as in (333)a is grammatical. In each of these examples, the incorporated nominal is a full noun, and there is an overt XP on the left edge. Thus, in (335)b, the incorporated noun is *piiwaahk* 'metal, can' and the element on the left edge is *shiiwaapoo* 'juice/pop' with the intended meaning of the verb 'I have a pop can'; *shiiwaapoo-piiwaapihk* 'pop can' also exists as an independent complex noun. Similarly, in (336)b, the incorporated *nP masinahikanaahtik* 'pen/pencil/writing device' is preceded by the left-edge modifier *mihtiko-* 'wooden'<sup>83</sup>. In (337)b the incorporated noun *taapaan* 'car'<sup>84</sup> is preceded by a modifier *metawaakan* 'toy'. However, despite the fact that all the (b) examples confirm to the

<sup>&</sup>lt;sup>83</sup> Interestingly, the noun *masinahikanaatihk* already contains a medial *aatihk* 'wood' specifying that the noun refers to a writing utensil made of wood – that is, a pencil. In fact, to the best of my knowledge, other Ojibwe dialects contrast this noun with *masinahikanaapihk* that contains a medial *aapihk* 'metal' specifying that the noun refers to a 'metal writing device' – that is, a pen. In Ojicree, however, the noun *masinahikanaatihk* must have become reanalized, at least for some speakers, and now can refer to any writing device, either a pen or a pencil. To refer specifically to a pencil, these speakers add the modifier *mihtiko-* 'wood'.

<sup>&</sup>lt;sup>84</sup> The form of the free noun 'car' is *otaapaan*, but, as discussed earlier in the chapter, this noun belongs to a small group of labial-initial nouns that drop their initial labial when incorporated, so the reduced form is expected here.

predicted structure for *e*-verbs, none of them is grammatical. Notice, that they become grammatical if there is a modifier on the left edge, as in the (a) examples.

- (335) a. Nitoshki-shiiwaapoopiiwaapihkwe.
  ni-oshki-shiiwaapoo-[piiwaapihkw-e]
  1-new-sweet.liquid-metal-e.AI
  'I have a new pop can.' (e.g. I'm collecting pop cans)
  - b. \*Nishiiwaapoopiiwaapihkwe ni-shiiwaapoo-[piiwaapihkw-e] 1-sweet.liquid-metal-e.AI 'I have a pop can.'
- (336) a. Nitoshki-mihtiko-masinaahikanaahtikwe. ni-oshki-mihtiko-[masinaahikanaahtikw]-e
  1- new-wood-pen/pencil-e.AI
  'I have a new pencil.'
  - b. \*Nimihtiko-masinaahikanaahtikwe.
     ni-mihtiko-[masinaahikanaahtikw]-e
     1- wood-pen/pencil-e.AI
     intended: 'I have a pencil.'
- (337) a. Nitoshki-metawaakanitaapaane. ni-oshki-metawaakani-[taapaan]-e 1-toy-car-e.AI 'I have a new toy car.'
  - b. \*Nimetawaakanitaapaane. ni-metawaakani-[taapaan]-e 1-toy-car-e.AI 'I have a toy car.'

The answer to this puzzle is in the following set of data. It appears that when the illformed verbs above are uttered in particular contexts, they become grammatical. Thus, (336)b becomes grammatical when followed by the emphatic particle *hsha* as in (338), and (337)b is grammatical in the context such as (339).

(338) Mihtiko-masinahikanaahtikwe hsha Janet. mihtiko-masinahikanaahtikw-e hsha Janet wood-pen-e.AI EMPH Janet
'Janet has a PENCIL (e.g. as opposed to a pen).'

- (339) Q: Aahte pimihsewi-pakiciiwinink ishitaapaanihshin! aahte pimihsewi-pakiciiwin-ink ishi- taapaan- ihsh-in please plane-landing.place-LOC there-drive.TA-2>1-IMPER 'Can you drive me to the airport?
  - A: Kaawin, nimetawaakanitaapaane ehta. kaawin ni-metawaakani-taapaan-e ehta no 1- toy- car- e.AI only 'No, I only have a TOY car.'

What is common between these grammatical sentences is that the *-e* verb, or more specifically the left-edge element in the *-e* verb is in a focus position. Thus, in (338) the emphatic particle *hsha* following the *e*-verb brings the modifier *mihtiko-* 'wooden' under focus, and the reading is that Janet has a PENCIL as opposed to a pen (literally, Janet has a WOODEN writing device, not a plastic one). Similarly, the adverb *ehta* 'only' in (339) brings the modifier *metawaakan* 'toy' under focus, so that the sentence maybe appropriate in a situation where the speaker means 'I cannot drive you to a station because I only have a TOY car.'

There are more examples like these that confirm that the grammaticality contrast between the two groups of examples above is productive. In (340)a the NP with the relative clause refers to a special kind of bannock that is baked with a hole in the middle to speed up the cooking time, or to donuts. In (340)b the incorporated nominal has the modifier *pakone-* 'have a hole' which also serves as the root in (340)a. In this case the incorporated nominal cannot refer to the same thing (the specific kind of donut) as the NP in (340)a. The only thing it can mean is that the bannock I am holding happens to have a hole in it. This again suggests that *pakone-* here is new information, or under focus.

(340) a. Kaa-pakonesic aanahkonaa.
 kaa-pakone-si-c aanahkonaa
 COMP-have.a.hole-AI-CONJ bannock
 'donut' / 'a bannock made with a hole in the middle.'

b. Nah! Nipakone-aanahkonaawe nah ni-pakone aanahkonaa-e look 1-hole-bannock-e.AI 'Look! My bannock has a hole in it!' #'Look! I have a donut!'

Similarly, for some speakers the verb *mank-ahkisin-e* 'have big shoes' can be used only when the modifier *manki-* is under focus, as in the following case where it is modified by the stranded intensifier *osaam* 'too'.

(341) Osaam hsha nimankahkisine.
 osaam hsha ni-mank-ahkisin-e
 too EMPH 1-big-shoe-e.AI
 'My shoes are too big.'

This suggests that this verb does not mean 'I have big shoes' but is more appropriatedly translated as 'My shoes are big'. In the latter case, the nominal *shoes* is presupposed while the predicate 'big' is is under focus.

Extending it to all possessive e-stems, such as the ones below we can conclude that the appropriate translation for these verbs is not 'S/he has cold feet', 'I have a shy daughter', 'S/he has a big pillow', but rather 'His/her feet are cold', 'My daughter is shy' and 'His/her pillow is big.'<sup>85</sup> That is, the nominal in these constructions is presupposed information, while the left-edge constituent is the new information.

- (342) a. Tahkisite tahki-sit-e cold-foot-e.AI 'Her/his feet are cold.'
  - b. Ninanepiwitaanihsiwe ninanepiwi-taanihsiw-e shy-daughter-e.AI 'My daughter is shy.'

<sup>&</sup>lt;sup>85</sup> Valentine (2001) reflects this intuition by glossing the suffix -*e* as 'body part is...'

c. Manki-ahpihkwehshimone manki-ahpihkwehshimon-e dirty-pillow-e.AI 'His pillow is big.'

Ideally, this reading, and the focus interpretation of the left-edge element should be derived structurally. Before doing so, it is worth mentioning that the problem outlined here is not unique to *e*-stems in Ojicree.

According to some authors, the English *have* has many of the same properties described here for *e*-verbs. Several authors note that the English *have* does not really denote possession but an abstract relation between an individual and the thing/property described, while the particular relationship as well as the thematic role of the individual is determined by pragmatics (Cowper 1989, Ritter and Rosen 1997, Sæbø 2009).

In addition, it has been noticed that in the case of *existential* have, in particular, the semantic composition requires that the subject must combine with the noun before the determiner does (Sæbø 2009, his (4) and (5)):

- (343) a. The crime had two victims
  - b. America has enough enemies as it is

This intuition also parallels the evidence brought earlier that the suffix -e (that is responsible for introducing the subject) must combine with noun before the left-edge element does.

Sæbø (2009) develops an analysis of the English *have* according to which it embeds a small clause (even when on the surface it appears to embed a DP).<sup>86</sup> Thus, he argues that in English, the sentences *My hair is wet*, *I had my hair wet*, and *I have wet hair* are synonymous. I have noticed above that a similar intuition holds for *e*-verbs: they are most appropriately translated as 'My X is Y.'

<sup>&</sup>lt;sup>86</sup> Ritter (1997) also propose that at least in some cases the English *have* embeds a small clause.

With these in mind, I propose the suffix *-e* takes a small clause complement, much like the English *have* does, in Sæbø's (2009) view. Thus, I propose the structure in (344) as an updated version of (324) above. The suffix *-e* introduces an (internal) argument and takes a SC complement. The incorporated nominal is the subject of the small clause, while the left-edge element merges as the predicate of the small clause. The left-edge element then moves to Spec, EP, as does the left-edge element in complex stems. Recall from §5.4.1 that at some point the left-edge element has to appear higher and take scope over the nominal plus the suffix. Thus this movement is necessary, as it is with complex stems.

(344) oshkitaapaane oshki- taapaan- e new- car- e.AI 'S/he has a new car.'



Importantly, this structure derives the focus effect discussed earlier in this section. Subjects are commonly considered to be old (presupposed) information, while predicates are new (focused) information (e.g. Diesing 1992) Thus, positing the nominal as the subject of the small clause and the left-edge element as its predicates derives the desired focus effect. As noted above, the movement to Spec, EP is necessary in order to derive the right surfact order and also for reasons outlined in §5.4.1. As in the case of complex stems, the motivation for this movement is not clear at the moment, but might be similar to the motivation for predicate fronting in verb-initial languages (e.g. Massam and Smallwood 1997, Oda 2002).

#### 5.5 Conclusion

In this chapter I have proposed an analysis of noun-incorporating verbs formed with the suffix *-e*. The analysis presented here relies on the notion of the left-edge requirement developed in the earlier chapters.

I have argued that these stems, like complex stems, are syntactic constructs. In particular, both the incorporated nominal and the left-edge modifier are syntactic phrases; and the structure is productive and compositional, like that of a complex stem, as expected in syntactic word formation (cf. §2.2.1 for my assumptions about syntactic word formation). In addition, *e*-stems display many properties common of denominal verbs in other languages, such as referentiality, stranding of modifiers and doubling, that further suggest their syntactic nature. Further, the phonology on the boundary between the nominal and the left-edge element supports the syntactic findings and the parallel between *e*-stems and complex stems. I have also argued that the two kinds of *e*-verbs, possessive and incorporative, behave identically in all respects and should be given the same analysis.

I have proposed that the suffix *-e* introduces an internal argument, takes a small clause complement, and relates the proposition in the small clause to the animate argument that it introduces in its specifier. The predicate of the small clause then moves up to Spec, EP, similarly to the left-edge element in complex stems, to take scope over the rest of the stem. Thes structure

accounts for the focus effect observed in *e*-verb whereby the nominal is the presupposed information and the left-edge element is the new information.

The aim of this chapter was to account for this particular type of verbs but also to show how the idea of the left-edge requirement can be extended to account for various phenomena in the language. Using the notion of the LER helps view the morphosyntactic structure in a new light and shows that in line with recent views (Brittain 2001, 2003, Hirose 2003, Piggott and Newell 2006, Mathieu 2008, to appear) a large portion of word formation in Ojicree takes place in syntax.

## Chapter 6 Conclusions and further challenges

In this concluding chapter I summarize the findings of this thesis, its contribution and implications ( $\S6.1$ ), and discuss some issues for future research ( $\S6.2$ ).

## 6.1 Summary, contributions and implications

The central proposal of this thesis is that the surface complexity of the Ojicree verb stem can be accounted for if we distinguish between two types of roots, weak roots and strong roots, that are responsible for building two different types of stems. Strong roots combine with a verbal head to build a simple stem. Weak roots are semantically defficient elements, and their combination with a verbal head is not enough to build a full stem; additional material has to appear to the left of the root to make a complete stem (the left-edge requirement). The composition of the complex stem reflects event composition. The stem corresponds to a complete event, and the left-edge material completes the composition of that event.

In Chapter 2 I brought arguments for the distinction between simple and complex stems. I have shown that complex stems are completely syntactically and semantically transparent, while simple stems exhibit a lot of idiosyncrasy and limited productivity. I have also brought phonological evidence for this distinction: the application of the phonological process of palatalization supports the proposal that complex stems consist of two syntactic domains, while simple stems are built directly from a root. The evidence brought in that chapter suggests that complex stems are syntactic constructs. While simple stems need to be stored in the lexicon, complex stems need not be, because they are syntactically and semantically transparent.

In Chapter 3 I made a general overview of a subset of verbal heads in Ojicree. I have assumed that their primary role is to introduce arguments, and have developed a diagnostic to determine their argument position. I have also shown that although most verbal heads are not sensitive to the type of root (weak vs. strong), at least two verbal heads are.

Chapter 4 explored the nature of the left-edge requirement in complex stems. I have proposed that it is a semantic requirement that has to do with event composition. Weak roots are semantically deficient elements, missing some essential piece of event composition, such as manner, direction, result or some associated circumstance. For each weak root the exact type of semantic gap is unique, but in all cases this gap is filled by the left-edge element. I have proposed that event composition is manifested syntactically, and the stem corresponds to an E(vent)P. The left-edge element merges as the complement of the weak root and then raises to Spec, EP. Thus, the composition of the complex stem reflects event composition. I have further shown that restrictions on what can appear in the left-edge slot support this proposal: only elements that are associated with event composition can satisfy the left-edge requirement, while higher level adverbials that need to have a whole event in their scope cannot appear there.

Chapter 5 extended the idea of the left-edge requirement by focusing on a particular kind of noun incorporation. I have suggested that verbs built with the suffix *-e* and an obligatory incorporated noun have a more complex structure than previously assumed. In particular, I have proposed that the suffix *-e* is a verbal head that introduces an animate argument in its specifier and selects for a small clause complement. The main function of this suffix is to relate the proposition denoted by the small clause to the animate argument in its specifier. The predicate of the small clause raises to Spec, EP, similarly to the left-edge element in complex stems. This thesis has both empirical and theoretical contributions. Empirically, it provided an in-depth look into the stem structure of the Ojicree verb, bringing a variety of new data and positing new types of questions. The distinction between the two root types allows to view the relation between stem components in a systematic manner. What seemed random and unpredictable under the templatic approach is easily accounted for in the framework proposed here. The old question that has been asked at least since Goddard (1990) *Why do all stems have initials?* is now a clearly-defined problem that applies only to weak roots: *What is it that weak roots are lacking that require them to have something to their left?* Whether my account of this in Chapter 4 is correct, I hope it opens a new line of inquiry for investigation of the Ojicree stem.

In addition, moving away from the *initial-medial-final* template helps situate the Ojicree stem within a current syntactic framework, and to the extent that this analysis can be applied to other Algonquian languages, this is a step towards eliminating the 'special' status of these languages. This, in turn, allows asking the questions pertinent to these languages from a broader cross-linguistic perspective.

Theoretically, this thesis contributes to the long-standing debate on the domains of word formation in Algonquian languages and in polysynthetic languages in general. My analysis not only corroborates the insights in the generative Algonquian literature (Brittain 2001, 2003, Hirose 2003, Piggott and Newell 2006, Mathieu 2008, to appear) that word formation in Algonquian is a syntactic process, but also brings specific evidence of what is and what is not a product of syntax: complex stems are syntactic constructs, formed in the s-syntax, while simple stems are formed in the l-syntax and need to be stored. In a broader sense, the present analysis contributes to our understanding of how words are formed in polysynthetic languages, strengthening the view (e.g. Rice 2000) that in such languages the verb word is usually a syntactic construct.

The analysis proposed here also has important implications for language learners. If complex stems are syntactic constructs, like preverb + stem, then they don't need and cannot be memorized because their meaning is predictable and the number of combinations is potentially very large. What needs to be memorized is the meaning of the weak root, including its specific semantic gap.

Before closing the chapter, I would like to discuss some issues for future research.

## 6.2 Further challenges

This thesis proposes a new way of looking at the Ojicree verb stem, but as it is it also raises many questions some of which could not have been asked prior to this analysis. I briefly review some of these here: further challenges concerning the left-edge requirement (§6.2.1), challenges posed by verbal heads (§6.2.2) and possible ways to extend the proposed analysis (§6.2.3).

#### 6.2.1 More on the left-edge requirement

The most "burning" issue is still the question of the left-edge requirement. According to my proposal, this is a semantic requirement that has to do with event composition. Weak roots are semantically deficient, missing some essential piece of event composition. The left-edge element supplies that piece and completes event composition. Structurally, the left-edge element merges as a complement of the weak root and raises to Spec, EP. Both the semantic and the structural sides have a range of unresolved questions.

First, the relationship between the weak root and the left-edge phrase is not entirely clear yet. Although I have suggested that the type of semantic gap is unique for each weak root, and consequently the range of elements that can satisfy the LER is determined on the root-by-root basis, it is still not clear what is it each particular weak root is missing. In chapter 4 I have barely scratched the ground on this issue by reviewing a small set of weak roots and the range of left-edge elements for each. It is clear that for a deeper understanding of this relation one needs to conduct a more systematic study with much more data than is available here. What are some other possible relations between the weak root and the left-edge element? What is the system underlying these relation? Why is descriptive and resulative interpretation of verb stems in the left-edge position are not equally available? Finally, can these constructions be analyzed as serial verbs or other types of complex predicates in other languages?

Second, some aspects of structure remain unclear. For instance, I have proposed that the left-edge element originates as a complement of a weak root and then moves up to Spec, EP. The evidence that it raises comes from the scopal properties of *caaki*- 'all', but the motivation for this movement is still not clear.

Finally, as discussed in §4.3 there is sometime variation in judgement among different speakers. Can these be reconciled somehow? Does that mean that the system is not stable? Does that mean that the speakers intuitions are not always sure where the event composition boundary (EP) is?

## 6.2.2 Verbal heads

A whole range of question is raised by the discussion of verbal heads. In Chapter 3 I made a brief overview of the set of verbal heads that are used most commonly in the data in this thesis. I have assumed that verbal heads (abstract finals in the traditional terminology) are primarily argument introducers, and have developed a diagnostic to determine the position of the argument they introduce.

First of all, although I have suggested (following views such as O'Meara 1990 for Delaware, Ritter and Rosen 2010 for Blackfoot) that verbal heads to not determine event structure, no specific evidence was brought to support that. Where does event structure (lexical aspect) comes from if it is not determined by the verbal head? Does it result from the joint effort from the root and the verbal head? Are verbs underspecified as to their event structure? We have seen that at least one suffix, the inchoative *-hse* can have affect on the event structure. What does it tell about other verbal heads?

Second, the sensitivity of certain suffixes to the root type (weak/strong) remains an open question. Altough the majority of suffixes discussed in Chapter 3 are not sensitive to root type, at least two are: the transitive *-ih* and the inchoative *-hse*. Where does this sensitivity come from and how can it be reflected structuraly? Why these two suffixes and what is the implication of this? One characteristic that unites these two suffixes is that they can both participate in secondary derivation (form verbs from existing verbs). Maybe that is the beginning of the answer to the puzzle?

In general, compatibility of roots with various suffixes is a topic that warrants at least one other full thesis. We have seen that for each verbal category there is more than one verbal head. Is it predictable which particular root will combine with which suffix? What are the difference in meanings between suffixes in the same category?

However, the most important question, to my mind, is what distinguishes a verbal head from a root (in our case, a weak root). In my discussion of verbal heads and of the stem structure

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in general I have followed the intuitive division in the Algonquian literature between abstract and concrete finals. Concrete finals have lexical meaning, and have roughly equated them with my category of weak roots. Abstract finals are category-defining elements and I have treated them as verbal category-defining heads. However, as much as the distinction between abstract and concrete finals is not clean cut (these are not usually considered to be two discrete categories, as discussed in \$1.4.4), so is the distinction between verbal heads and weak roots in my analysis. The most problematic area for this topic as well as the most fruitfull ground to explore these issues is the category of instrumental transitive finals. These are finals that transitivize the verb and specify the instrument with which the event was caused. These were only mentioned in passing in Chapter 3, and only one example discussed 'by hand'. In my analysis, I treated it as a purely category-defining element, a transitive verbal head meaning something like 'exerting fine control' (following Rhodes 1980).

(345) Nikii-napakinaa aanahkonaa.
ni-kii-napak-n-aa aanahkonaa
1-PAST-flat-TA-1>3 bannock
'I have flattened the bannock.'

Whether or not my analysis of this suffix is correct, there are other instrumental suffixes that fit into the category 'instrumental finals' that are more difficult to analyze in this way. Two exemples are given below: *-shkaw* usually glossed 'by body' and *-am* usually glossed 'by mouth'.

(346) a. Nikii-napakishkawaa aanahkonaa.
ni-kii-napaki-shkaw-aa aanahkonaa
1-PAST-flat-by.body.TR-1>3 bannock
'I flattened the bannock using my body.'

b. Nikii-napakamaa aanahkonaa.
ni-kii-napak-am-aa aanahkonaa
1-PAST-flat-by.mouth.TR-1>3 bannock
'I flattened the bannock by mouth / I chewed the bannock flat.'

Without arguments, I have treated these as weak roots (see (243)d for *-shkaw* and (231)b for a TI variant of *-am*), however this choice is not uncontroversial. Considering the minimal contrast between the example in (345) the ones in (346), it is tempting to put the three finals into one category. However, I have made the decision to put them in different categories, simply based on the intuition that *-n* does not have enough specified lexical meaning to be considered a weak root, while *-am* and *-shkaw* have too much lexical meaning to be considered functional heads. This line of thinking opens an array of questions. How semantically underspecified can a morpheme afford to be to still count as a lexical morpheme? At which point do we call it a functional morpheme "with some lexical flavor"? My intuition is that the answers to these questions have to come from structure, and what this morpheme does in a verbal complex and how it interacts with other elements of the structure.

## 6.2.3 Extending the analysis

The discussion in this thesis focused strictly on the structure of the Ojicree verb stem. However, according to the view in the traditional Algonquian literature, not only verb stems but also noun are built based on the *initial-medial-final* template. One question for future research is how the proposed analysis can be extended to other domains of word formation.

In addition, there is the question of whether the findings in this thesis are applicable to other dialects of Ojibwe and to other Algonquian languages. As discussed in the introduction, Ojicree stands out from other Ojibwe dialect in that it has managed to retain a robust derivational morphology whose productivity does not only stay active, but evolves with new generations. It remains to be seen whether the analysis that I have proposed for Ojicree reflects just the specific properties of this dialect or if it could be applied to other dialects and other Algonquian languages.

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