ORIGINS OF PREDICATES:
EVIDENCE FROM PLAINS CREE

by

TOMIO HIROSE

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Abstract

This thesis advances a new perspective of predicates in natural language (e.g. *tall* in *John is tall* and *tell* in *I told Mary funnies*). I make two major claims: first, predicates are defined in terms of three properties, (i) argument-taking ability, (ii) temporality, (iii) conceptual content; second, predicates are not a lexical primitive, but a syntactic construct such that the three defining properties of a predicate "meet" one another only in the syntax. I also propose a particular set of syntactic structures that instantiate the above claims in line with Chomsky's (1995) theory of "bare phrase structure."

Data drawn from Plains Cree, an Algonquian language, play a central role in justifying the proposed view of predicates. By identifying morphological complexity of this language's "verbal complexes"—word-like morphological units that are semantically equivalent to propositions—with syntactic complexity, I claim that morphemes internal to Plains Cree verbal complexes should be interpreted as lexical items that enter into the syntax. I propose a particular distribution of these three defining properties of a predicate as a distinct set of morphemes. By demonstrating that the proposed distribution of the three defining properties of a predicate provides insights into morphosemantic and morphosyntactic properties of Plains Cree verbal complexes, I argue for the proposed analysis of natural language predicates.

Morphosemantically, the fact that the combination of a root and appropriate agreement morphology fails to form a proposition in Plains Cree (contrary to many other "polysynthetic" languages) follows from the claim that Plains Cree roots are not predicates, and bear only conceptual content. I also argue that identification of temporality as the "dynamicity" of Verkuyl (1972, 1993) specified on transitivitiy suffixes accounts for the absence of "aspectual stacking" in the language.

Morphosyntactically, I demonstrate that assignment of argument-taking ability to three sets of non-root morphemes captures properties of noun incorporation phenomena in Plains Cree. I also demonstrate that the proposed syntactic structures explain properties of two operator-like morphemes in the language. These phenomena characteristically exhibit c-command and locality effects, which otherwise must be simply stipulated in a-syntactic terms.

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List of Abbreviations and Symbols

Abbreviations Used for Plains Cree Data

1	first person
2	second person
21	inclusive *we* (i.e. you (guys) and me/us)
3	third person
0	inanimate
A.TH	animate theme sign
APPL	applicative
CAUS	causative
CONJ	conjunct
EPEN	epenthetic
FUT	future
G.OBJ	generic object
INCH	inchoative
INTR	intransitive
INV	inverse (direction)
I.TH	inanimate theme sign
LCAL	local
LOC	locative
MDRF	middle reflexive
MED	medial
NOM	nominative
NML	nominaliser
OBV	obviative
OPR	operator
PA	proto-Algonquian
PAST	past tense
PL	plural
PRES	present tense
REFL	reflexive
STAT	static
S.STAT	static (spatial)
TRAN	transitive
UP	unspecified possessor
USC	unspecified subject construction
1>3	1st person "acts on" 3rd person

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Abbreviations Used for the Data from Baker 1988

ASP	aspect or mood marker (general)
B	a noun class agreement (Southern Tiwa)
CAUS	causative morpheme
N	neuter gender
PRE	nominal inflection prefix
PRES	present tense
SUF	nominal inflection suffix (Iroquoian, Southern Tiwa)

Symbols

ADD TO	dynamicity
ARG	argument
CS	constant cognate object
F/FP	functional head/phrase
pro	phonologically-null pronominal argument
pro$_{an}$	animate phonologically-null pronominal argument
pro$_{in}$	inanimate phonologically-null pronominal argument
v/*v*P	verb head/phrase
ROOT	root
SQA	specified quantity of A
τ	temporality
π	conceptual content
θ	theta-role feature
$\exists$	existential quantification (e.g. *some*)
$\forall$	universal quantification (e.g. *every*)

I was wondering why trees grow vertically.

Why couldn't they grow crawling on the ground like their roots?

"Father, why do trees grow straight up into the sky, can't they grow crawling on the ground?"

"That would be *uncontainable*, boy!"

— *Our generation.* Kenzaburo, Oe.[1]

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[1]My translation.

Chapter 1

Introduction

1.0 Introduction

This thesis proposes a new perspective in terms of which "predicates" of natural language are to be understood. By predicate, I refer to linguistic expressions such as the English verbs *run, break,* and *tell* in (1), for instance.[1]

(1)   a.   Claudia ran
        b.   Claudia broke a dish
        c.   Claudia told Ottilie a story

It is often said that the verb *run* takes one argument expression to form a well-formed sentence, e.g. the subject *Claudia* in (1a). Likewise, the verb *break* is said to take two argument expressions, to derive a grammatical sentence, e.g. the subject *Claudia* and the object *a dish* in (1b). Predicates that take one argument expression such as *run* are called "intransitive" predicates. Those that take two argument expressions such as *break* are called "transitive" predicates. Verbs can also take three argument expressions such as *tell* in (1c). This sentence has three argument expressions: the subject *Claudia*; the indirect object *Ottilie*; and the direct object *a story*. Predicates that take three arguments are called "ditransitive" predicates.[2]

Verbs or predicates such as *run, break,* and *tell* are regarded as "words" in English in the sense that they each constitute a phonological unit to which a stress (of a varying degree of strength) is assigned.[3] A word is commonly taken as the smallest syntactic unit to which syntactic operations apply;

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[1] Thus, the notion of predicate used in this dissertation describes a linguistic expression that is conventionally defined for "valency," where valency specifies the number of argument expressions that are introduced (either zero, one, two, or three), the usage of Tesnière 1959, Gruber 1976, Stowell 1981, Grimshaw 1990, among others (i.e. the "argument structure" tradition). This usage differs from that of Williams 1980, Rothstein 1983, Déchaine 1993, among others, in which a predicate is a property-denoting expression that is associated with a single argument, i.e. the subject of predication.

[2] There are predicates that arguably do not take an argument expression at all, such as the "weather" verb *rain* in (i).
(i) It rained this morning
The subject *It* in this sentence is often called "expletive," a meaningless place-holder that fills the subject position. I do not consider "weather" verbs in this dissertation, cf. §6.2.1. For discussions of weather verbs, see Bolinger 1973 and Chomsky 1981.

[3] This is a very rough approximation that defines a "phonological" (or "prosodic") word, cf. Selkirk 1984. For a more technical definition of a phonological or prosodic word, see Nespor and Vogel 1986.

the internal structure of words, if any, is invisible to syntactic operations. In other words, words are "syntactic atoms" or X^0. Thus, the above-mentioned English verbs are syntactic atoms of the verbal category, i.e. V^0. Now, in English, the syntactic atomicity of predicates in general matches their morphological atomicity.[4] That is, one cannot break the predicates *run*, *break*, and *tell* into smaller morphological units (i.e. morphemes), as they have no internal morphological structure; they are mono-morphemic. In contrast, there are languages in which predicates have internal morphological structure. One such example is Plains Cree, an Algonquian language.[5] To illustrate, the Plains Cree equivalents of the above English sentences are given in (2).

(2) a. Claudia [pim-paht-â]-w
         C.   along-run-INTR-3
         'Claudia ran'

     b. Claudia [pîko-n-am](-w)   wiyâkan
         C.   break-by.hand-I.TH-3 dish
         'Claudia broke a dish (by hand)'

     c. Claudia [wî-ht-amaw-ê]-w   Ottilie-wa âcimowin
         C.   tell-TRAN-APPL-A.TH-3 O.   -OBV story
         'Claudia told Ottilie a story'

The bracketed portion of each example is a predicate in Plains Cree. (This point will be explicated later in Chapter 3.) Thus, *pimpahtâ* is approximate to intransitive *run*, *pîkonam* to transitive *break*, and *wîhtamawê* to ditransitive *tell*. These Plains Cree predicates take as many argument expressions as do their English correspondents. Unlike their English correspondents, which are composed of a single morpheme, Plains Cree predicates are morphologically complex: they are composed of more than one morpheme. For instance, the predicate *pîkonam* '*x* breaks *y* (inanimate)' is composed of three morphemes, the root *pîkw* 'break,' the transitive suffix *-(i)n* 'by hand,' and the inanimate "theme sign" *-am*. Such internal morphological complexity is characteristic of the majority of predicates in Plains Cree.

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[4] Verbs that end with *-ise* or *-ify*, and adjectives that end with *-ish* or *-y* have internal morphological structure, however.

[5] Plains Cree is a Cree language indigenous to the central part of Alberta and the central and southern parts of Saskatchewan. Plains Cree characteristically falls under so-called "polysynthetic" languages, in which propositions are expressed by a unit phonologically construed as a "word," a hallmark of polysynthesis. See Hale 1983 for other characteristics of polysynthetic or "non-configurational" languages, and Blain 1997 for their manifestation in Plains Cree.

The above Plains Cree data casts doubt on the commonly-practiced identification of a predicate as a syntactic atom. That is, do predicates need to be syntactic atoms? Isn't the complex morphological structure of Plains Cree predicates indicative of their having complex syntactic structure? The central aim of this dissertation is to argue on the basis of Plains Cree that natural language predicates are in fact syntactic constructs that are made of smaller syntactic objects. This aim is attained by demonstrating that the defining properties of a predicate are indeed distributed over syntactic structure. This demonstration itself is implemented by postulating a set of syntactic structures that represent natural language predicates, and showing that these syntactic structures properly capture morphosemantic and morphosyntactic properties pertaining to Plains Cree predicates. This is the enterprise that I am to undertake in this dissertation.

The ensuing portion of this introductory chapter is organised into six sections. §1.1 identifies the three properties that define a predicate as (i) argument-taking ability, (ii) temporality, and (iii) conceptual content, and clarifies what I mean by them. §1.2 demonstrates that Plains Cree verb roots are not predicates, and argues that this is because they possess only conceptual content, and crucially lack argument-taking ability and temporality. §1.3 shows that a predicate only arises subsequent to combination of a root with a transitivity suffix in Plains Cree, and proposes that this combination occurs in the syntax. This leads to the central claim of this thesis: predicates are syntactic constructs. An implementation of this idea by means of "vP syntax" is illustrated in §1.4. §1.5 in turn clarifies two auxiliary theoretical assumptions necessary for the proposed vP syntax to properly serve its function. §1.6 provides a brief grammatical description of Plains Cree to enhance the reader's comprehension of the phenomena to be discussed in later chapters. §1.7 describes the methodology that is adopted to conduct the current project. Finally, §1.8 outlines the upcoming chapters of this dissertation.

1.1 Three Defining Properties of the Predicate

What are the characteristics that define predicates in the relevant sense? As an answer to this question, I propose that predicates are characterised as having the following three properties:

(3)   *three defining properties of the predicate*

        a.   argument-taking ability
        b.   temporality
        c.   conceptual content

I will clarify what these properties refer to immediately below.

The first property, argument-taking ability, is tantamount to the fact that a predicate requires a certain number of argument expressions to give rise to a well-formed proposition.[6] For instance, the English verb *know* needs two noun phrases for a grammatical sentence to be formed.

(4) a. *knows
     b. *Claudia knows[7]
     c. *knows German
     d. Claudia knows German

(4a) has no noun phrase. (4b) and (4c) have only a single noun phrase, the subject and the object, respectively. These three "sentences" are all ungrammatical. Only (4d), which has both the subject and the object noun phrase, is a full-fledged English sentence. The requirement that the verb *know* take two arguments is often implemented in the form of the "argument structure" (or "theta grid") associated with it (Stowell 1981). Argument structure is a specification of the number of arguments that a predicate takes in the syntax. For instance, the verb *know* has the argument structure in (5).

(5) *know* $<\underline{x}, y>$

This notation indicates that the verb *know* takes two arguments x and y. The underline below x indicates that it is the "external argument" (i.e. roughly, the subject) and the lack thereof under y indicates that it is the "internal argument" (i.e. roughly, the object) in the sense of Williams 1980. Only if the two arguments, x and y, are syntactically "saturated," i.e. realised by two noun phrases in the syntax, can a sentence containing the verb *know* be grammatical.

The second defining property of a predicate is its temporality. This refers to a dimension that distinguishes *know* from, say, *learn*, for instance. Consider the sentences in (6).

(6) a. I know Cree
     b. I learn Cree

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[6] I put aside the role played by tense and "force indicator" (i.e. complementiser) here, cf. Déchaine 1993.
[7] This example is marginally grammatical, but only if an unspecified object is supplied for the transitive predicate *know*.

On the one hand, a proposition that *x* knows *y* describes *x*'s state of mind, i.e. *x*'s knowledge of *y*. Thus, (6a) talks about a cognitive *state* that holds at the moment of utterance, namely that I am in possession of (some) knowledge of Cree. On the other hand, a proposition that *x* learns *y* describes a cognitive *activity* that I am engaged in, and that requires that I be involved in acquiring (some) knowledge of Cree. Thus, whereas (6a) describes a state, (6b) describes a dynamic activity. The contrast between these static and dynamic predicates appears, for instance, in the context of the progressive construction.

(7)   a.   *I am *knowing* Cree
        b.   I am *learning* Cree

(7a) is ungrammatical, exhibiting the incompatibility of the static predicate *know* with the progressive construction, whereas (7b) is grammatical, exhibiting the compatibility of the dynamic predicate *learn* with the progressive construction. Chapter 2 argues that the static vs. dynamic contrast is the only temporal property that is intrinsic to predicates. All other aspectual distinctions (e.g. telic vs. atelic or state, process, vs. transition) are derived compositionally.

The third defining property of a predicate is its conceptual content. The conceptual content of a given predicate is the meaning that we associate with it. Two predicates may have the same argument-taking abilities, and have the same temporal properties, but nevertheless differ in their conceptual content. For illustration, compare the two English verbs *hit* and *wipe* in (8).

(8)   a.   Ottilie *hit* the table
        b.   Ottilie *wiped* the table

First, both these verbs take two arguments, as required by their respective argument structures.

(9)   a.   *hit* $<\underline{x}, y>$
        b.   *wipe* $<\underline{x}, y>$

That *hit* and *wipe* respectively have such argument structures is evident from the paradigms in (10)–(13).

(10)   a.   *hits
        b.   *wipes

(11)   a.   *Ottilie hits[8]
        b.   *Ottilie wipes

(12)   a.   *hits the table
        b.   *wipes the table

(13)   a.   Ottilie hits the table
        b.   Ottilie wipes the table

Only when a subject and an object noun phrase are both present does the sentence containing the relevant verb become grammatical. Second, the verbs *hit* and *wipe* are not contrastive with respect to temporality either. They are both dynamic predicates, as shown by the fact that they may each occur in the context of the progressive:

(14)   a.   Ottilie is *hitting* the table
        b.   Ottilie is *wiping* the table

Thus, neither argument-taking ability nor temporality distinguishes between *hit* and *wipe*; in these respects, they are identical as predicates. What distinguishes these two verbs from one another is the concept they denote. That is, the verb *hit* is appropriate to describe a situation in which, for instance, one forcefully contacts one's fist or something against a surface, whereas the verb *wipe* is appropriate to describe a situation in which, for instance, one uses a wet cloth to remove dust or a spill on a surface. Information of this sort is what makes us recognise a situation as hitting or wiping. This extra-linguistic or real-world knowledge associated with each predicate is what I call conceptual content, cf. Marantz 1997.

Suppose that the necessary and sufficient conditions for predicatehood are the three properties just discussed, namely i. argument-taking ability (θ); ii. temporality (τ); iii. conceptual content (π).

(15)   *predicate* $\wp =_{def} \{\theta, \tau, \pi\}$

If so, the absence of any one of these three properties should disqualify a linguistic expression from being a predicate. With this in mind, we can now turn our attention to Plains Cree, and ask whether the

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[8] The sentence in (11a) is grammatical in the "generic object" interpretation (i.e. 'Ottilie hits things'). This is also true of the sentence in (11b). These sentences are fine, for instance, in a context where Ottilie habitually hits or wipes things.

elements which are identified as "roots" in that language satisfy the conditions for predicatehood. We shall see that they do not.

1.2 Plains Cree Roots Are Not Predicates

Plains Cree is a polysynthetic language.[9] In such languages, a single (phonological) word can express an entire proposition.

(16)   kisâkihâw
        a.   [ki.'saː.ki.haːw]
        b.   'you (sg.) love her/him'

The linguistic expression *kisâkihâw* is pronounced as a single word, with a stress on the antepenultimate syllable (16a). Yet, it conveys the propositional meaning in (16b). I adopt the convention of referring to an expression like (16) as a "verbal complex." Now, if a verbal complex is a proposition, and if a proposition is defined as consisting of a predicate and the argument expressions associated with it, then it follows that a verbal complex must contain a predicate and its associated arguments. This then raises the question of which parts of the verbal complex correspond to the predicate, and which parts correspond to the argument expressions. For polysynthetic languages such as Plains Cree, the agreement affixes which appear in the verbal complex are generally viewed as serving the function of arguments.[10] In (16), *ki-* at the beginning of the verbal complex indicates the second person argument, whereas *-w* at the end of the verbal complex indicates the third person argument. But which part of the verbal complex fulfills the predicate function?

If the root, the core constituent or morpheme of the verbal complex (or "word"), is a predicate in polysynthetic languages, then a verbal complex that contains the root and appropriate agreement affixes is expected to be a well-formed proposition. In many polysynthetic languages, this seems to be true. However, this is not the case for Plains Cree or Algonquian languages in general. In Plains Cree, with very few exceptions, a root alone cannot give rise to a well-formed verbal complex even if it is augmented by appropriate agreement affixes. For instance, combination of the roots *kinw* 'tall, long' and

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[9] The term "polysynthetic" is used in the sense of the Americanist tradition, not in the technical sense of Baker 1996, cf. footnote 5.

[10] The theoretical incarnation of this idea is the "Pronominal Argument Hypothesis" of Jelinek 1984, cf. Hale 1983 and and Baker 1996.

âhkw 'sick' with the first person prefix *ni-* and the "local" (i.e. first or second) person suffix *-n* fails to form intransitive verbal complexes that mean 'I am tall' (17a) and 'I am sick' (17b), respectively.

(17) a. *ni-*kino*-n
          1-tall-LCAL
          'I am tall [intended]'

      b. *ni-t-*âhko*-n
          1-EPEN-sick-LCAL
          'I am sick [intended]'

Likewise, in a transitive context, the root plus appropriate agreement morphology does not constitute a well-formed verbal complex.

(18) a. *ni-*pîkw*-ê-n
          1-break-I.TH-LCAL
          'I break it [intended]'

      b. *ni-*tihk*-ê-n
          1-melt-I.TH-LCAL
          'I melt it [intended]'

In both of these verbal complexes, the roots *pîkw* 'break' in (18a) and *tihk* 'melt' in (18b) are surrounded by the first person prefix *ni-*, the inanimate object suffix (or "theme sign" in the Algonquianist terminology) *-ê*, and the local person suffix *-n*. Nevertheless, these verbal complexes are illicit and fail to convey the meanings 'I break it' and 'I melt it,' respectively. What is wrong with the verbal complexes in (17) and (18)?

Recall that a proposition is defined as consisting of a predicate and its associated arguments. The impossibility of combining a bare root directly with agreement morphology in Plains Cree indicates one of two things: either the agreement morphology in Plains Cree is somehow defective and cannot function as a full-fledged argument expression; or the root is somehow defective and cannot function as a full-fledged predicate. Close examination of the internal organisation of verbal complexes leads to the conclusion that roots are not predicates in Plains Cree. For now, suppose this to be true. (This point will be developed at length in Chapter 2.) If Plains Cree roots are not predicates, then the question is why they fail to be so. To be identified as a predicate, a linguistic expression ought to possess the following three properties: (i) argument-taking ability; (ii) temporality; (iii) conceptual content. If Plains Cree

roots are not predicates, then it must be because they lack one or more than one of these properties; the question is, which one(s)?

Judging from the gloss given to each of the roots thus far considered, one must conclude that Plains Cree roots are at least associated with conceptual content. That is, the roots clearly convey a core meaning, e.g. *kinw* is associated with the concept of longness, *âhkw* with that of sickness, *pîkw* with that of breaking, and *tihk* with that of melting. Of the two remaining properties that define a predicate—argument-taking ability and temporality—it is not immediately obvious whether Plains Cree roots lack one or both of these properties. We shall see that Plains Cree roots are devoid of both argument-taking ability and temporality. But even if one accepts this claim, it immediately raises a question: if a root is not a predicate in Plains Cree, then what is?

1.3 Proposal: Predicates Are Syntactic Constructs

To derive a well-formed verbal complex, one needs to attach an appropriate suffix to the root. This suffix is called a "final" in the Algonquianist tradition. For reasons that shall become obvious, I refer to it as a "transitivity suffix." For instance, the presence of the intransitive suffix *-(i)si* or of the transitive suffix *-(i)n* 'by hand' results in the well-formed verbal complexes in the (a) examples of (19)–(22), respectively.

(19)　a.　　ni-*kino-si*-n
　　　　　　1-tall-STAT-LCAL
　　　　　　'I am tall'

　　　b.　　*ni-*kino*-n　　　　　　　　　[= (17a)]
　　　　　　1-tall-LCAL
　　　　　　'I am tall [intended]'

(20)　a.　　ni-t-*âhko-si*-n
　　　　　　1-EPEN-sick-STAT-LCAL
　　　　　　'I am sick'

　　　b.　　*ni-t-*âhko*-n　　　　　　　　[= (17b)]
　　　　　　1-EPEN-sick-LCAL
　　　　　　'I am sick [intended]'

(21) a.   ni-*pîko-n*-ê-n
             1-break-by.hand-I.TH -LCAL
             'I broke it (by hand)'

      b.   *ni-*pîkw*-ê-n   [= (18a)]
             1-break-I.TH-LCAL
             'I break it [intended]'

(22) a.   ni-*tihk-in*-ê-n
             1-melt-by.hand-I.TH-LCAL
             'I melted it (by hand)'

      b.   *ni-*tihk*-ê-n   [= (18b)]
             1-melt-I.TH-LCAL
             'I melt it [intended]'

Traditionally, the root and the transitivity suffix are considered to form a morphological unit called a "stem." Thus, *kinosi* '*x* is tall' and *âhkosi* '*x* is sick' are intransitive stems, whereas *pîkon* '*x* breaks *y*' and *tihkin* '*x* melts *y*' are transitive stems.

As the grammatical (a) examples in (19)–(22) demonstrate, the combination of a stem with pronominal agreement yields a well-formed verbal complex. This indicates that, in Plains Cree, while the root has conceptual content, it is the stem unit—the root plus transitivity suffix—that has the two other properties necessary to form a complete predicate, namely argument-taking ability and temporality. This further implies that the three properties necessary for predicatehood are not localised in a single element, as they are in languages like English. Rather, the root encodes conceptual content, while the transitivity suffix encodes argument-taking ability and temporality; together they form a complete predicate. This much accounts for the morphological structure of the intransitive predicates in (19a) and (20a). In addition, transitive predicates also have object-marking morphology; we will return to this in Chapter 3.

Thus, stem formation, which concatenates a root and a transitivity suffix, derives a predicate in Plains Cree. There remains the question of where in the grammar this derivation occurs. There are two alternatives to consider in answering this question: it may be that Plains Cree predicates are derived in the lexicon; or it may be that they are derived in the syntax. The first alternative represents the traditional view: stem/predicate formation is a morphological process and morphology is pre-syntactic. On this view, stems/predicates are derived in the lexicon, and they are expected to have the properties of

a single unitary X^0.[11] The second alternative claims that stem/predicate formation is a syntactic process. On this view, a stem/predicate has internal structure: it consists of (at least) two X^0s, and is expected to have phrasal structure.

Although the second alternative, namely that stem/predicate formation is syntactic, departs from the traditional view, it is arguably the null hypothesis if one accepts the claim that propositions are syntactic objects. In a polysynthetic language like Plains Cree, propositions are expressed by complex words. If propositions are syntactic objects, then these complex words must be formed in the syntax. If so, the elements that combine to form a verbal complex can be identified as syntactic objects. The claim that stems/predicates are derived in the syntax is intended to be a general one: it holds not only of Plains Cree, but is a property of Universal Grammar (UG). One of the primary goals of this thesis is to motivate this claim on the basis of Plains Cree data.

If one accepts that predicates are formed in the syntax, this raises the question of exactly how the surface ordering of morphemes is derived in Plains Cree. For now, it is sufficient to recognise that it is Plains Cree roots (and not stems) which are single unitary X^0s, i.e. syntactic atoms.

In sum, I am claiming that a predicate is a syntactic object, and that all predicates have the following three properties: (i) argument-taking ability; (ii) temporality; (iii) conceptual content. I now turn to the question of how to implement these general claims in a particular syntactic framework.

1.4 An Implementation: *v*P Syntax

The syntactic structures in (23) are the ones that will be adopted in this thesis to account for the properties of intransitive, transitive, and ditransitive predicates. Notice that all three structures have a root component: this is the syntactic correlate of the requirement that a predicate possesses conceptual content. Also note that all three structures have a τ element; this is the syntactic correlate of temporality. And finally, all three structures introduce argument positions, but differ in the actual number of arguments introduced.

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[11] This is not true of the "l-syntactic" approach to predicate formation of Hale and Keyser 1993.

(23) a. *intransitive*

$$vP_1$$
$$ARG_1 \quad v_1 \quad ROOT$$
$$\{\tau\}$$

b. *transitive*

$$vP_2$$
$$ARG_2 \quad v_2 \quad vP_1$$
$$ARG_1 \quad v_1 \quad ROOT$$
$$\{\tau\}$$

c. *ditransitive*

$$vP_3$$
$$ARG_3 \quad v_3 \quad vP_2$$
$$ARG_2 \quad v_2 \quad vP_1$$
$$ARG_1 \quad v_1 \quad ROOT$$
$$\{\tau\}$$
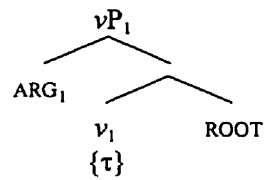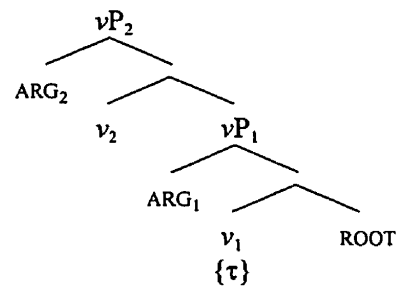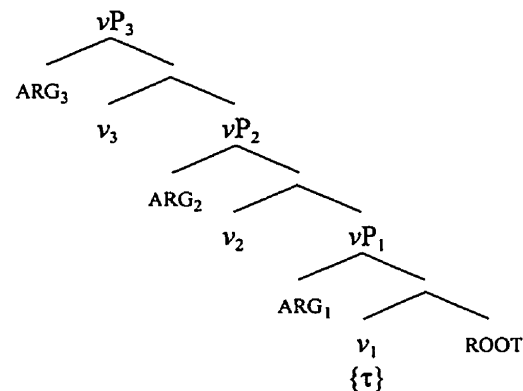
By postulating these syntactic structures, I distribute the three defining properties of a predicate in the way summarised in (24).

(24) *syntactic distribution of the three defining properties of a predicate*

predicate-defining property	syntactic correlate
a. argument-taking ability (θ)	theta-role feature θ on each v
b. temporality (τ)	semantico-syntactic feature τ on v_1
c. conceptual content (π)	ROOT

Let us consider how the architecture of the syntactic structures in (23) instantiates my claim that natural language predicates are syntactic constructs by clarifying the three correspondence relations in (24).

Consider (24a) first. The argument-taking ability of a predicate is formalised as the theta-role feature θ (which is suppressed in (23) for ease of exposition) on each v (which may be identified with Chomskyan light v, cf. Chomsky 1995).[12] This gives rise to the effect that each v introduces one and only one syntactic argument (symbolised as ARG) in its specifier position (i.e. a position that is sister to a non-X^0 syntactic object).[13] This means that intransitive predicates, which introduce one argument, require one v (23a); transitive predicates, which introduce two arguments, require two vs; and ditransitive predicates, which introduce three arguments, require three vs (23c). While v introduces an argument expression, it is not a predicate itself because it lacks the other two defining properties of a predicate, namely temporality and conceptual content.

Second, (24b) designates v_1, the light verb sister to ROOT, as the locus of temporality τ. (Chapter 2 clarifies the nature of temporality τ as a semantico-syntactic feature, and empirically justifies its locus on v_1.) While v_1 has both argument-taking ability and temporality, it is not a predicate, as it still lacks the third defining property of predicatehood, i.e. conceptual content.

Finally, (24c) stipulates that the syntactic object ROOT conveys conceptual content, but not argument-taking ability or temporality.[14] Hence, ROOT is not a predicate either. Thus, all lexical primitives occurring in the proposed vP structures (i.e. vs and ROOT, excluding specifier elements) are not predicates; rather it is the entire vP that represents a predicate, containing all three defining properties of a predicate. This is the sense in which natural language predicates are syntactic constructs.

Although previous proposals in the literature contain some of the ingredients of the present account, none of them adopts the syntactic tripartition of the predicate advocated here. For example, the claim that each syntactic argument is introduced by a v is prefigured in Larson 1988, and has been

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[12] The theta-role feature must not be taken to imply the presence of a theta-role label such as agent or theme. I assume, along with Hale and Keyser (1993), that the approximate theta-role of each argument expression is structurally determined.

[13] Thus, no subject vs. object asymmetry, such as the *wh*-extraction contrast illustrated by (i), can be reduced to the specifier vs. complement distinction in their base-generated configuration.

(i) a. Who$_i$ did you hear [a story about t$_i$]?

    b. ?*Who$_i$ did [a story about t$_i$] amuse you?   (Lasnik & Saito 1992:42)

However, the *wh*-extraction that involves passive in (ii) shows that what matters is the derived configuration, not the base-generated configuration.

(ii) ??Who$_i$ did you say that [pictures of t$_i$]$_j$ were stolen t$_j$?   (Kitahara 1997:29)

Therefore, whatever condition would ultimately capture the observed contrast must make use of the asymmetry between the subject and the object in terms of the derived context, e.g. the timing of their movement to a Case position. If so, having all argument expressions uniformly in specifier positions for theta-assignment may not be so much of a problem.

adopted and extended by Hale and Keyser (1993), Chomsky (1995), Ura (2000). And, the idea that temporality is a distinct property is recognised by Borer (1994); however, she still retains valency as an inherent property of predicates. And the distinct status of the root constituent as the locus of conceptual content is recognised by Marantz (1997), but he assumes that roots also encode valency, i.e. that they have argument-taking ability. Thus, the claim that the notion of predicate can be deconstructed into three types of syntactic elements is novel: v encodes valency, τ (on v_1) encodes temporality, and ROOT encodes conceptual content. The remaining chapters of the dissertation will provide empirical justification for this idea. I now introduce the theoretical assumptions within which the proposed analysis is embedded.

1.5 Two Essential Theoretical Assumptions

The vP structures introduced above are to be interpreted in terms of the general framework of the "principles and parameters" approach of Chomsky 1981, 1986, whose most recent version is the "minimalist program" explicated by Chomsky (1995, 1998, 1999). The following introduces the two theoretical assumptions that will be crucial to the analyses developed in later chapters. First, the notion that phrase structure is derived by means of successive applications of the operation of *Merge*. Second, the claim that theta-role assignment reduces to the operation of feature-checking.

1.5.1 Bare Phrase Structure

The phrase-structure theory adopted in Chomsky 1995 is strictly derivational in the sense that all phrase structure configurations arise via application of the operation *Merge*, defined as follows (see Chomsky 1995:226, 243):

(25)   *Merge*
        Concatenate two syntactic objects α and β, and project a syntactic object γ with either α or β specified as the label for γ.

A syntactic object is defined as follows (see Chomsky 1995:226–7, 243):

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[14] By choosing the label ROOT, I take this syntactic object to be category-neutral (as opposed to v, which is verbal, or to nominal arguments), a hypothesis that may or may not be valid for a given language. See §6.2.2 for a discussion.

(26)　*Syntactic Object*
　　　A syntactic object is a lexical item or the output of Merge.

If the syntactic objects α and β merge, thereby projecting the syntactic object γ, and if α is specified as the label for γ, this would yield the following structure for a determiner-noun combination such as *the piano*:

(27)　　　　　　　　the
　　　　　　　　 ╱‾‾╲
　　　　　　　the　　piano
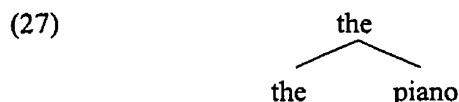
In (27), Merge applies to the two syntactic objects or lexical items *the* and *piano*, and forms a projection of *the*. Since lexical items themselves are syntactic objects (i.e. no lexical insertion), to which operations such as Merge apply, categorial labels (e.g. D, N, v, etc.) and bar-level notations (X^0, X', and XP) are only mnemonic (Chomsky 1995:246). However, for ease of exposition, conventional categorial labels and bar-level notations will be used throughout this dissertation. Thus, the representation in (27) is mnemonically expressed as (28).

(28)　　　　　　　　DP
　　　　　　　　 ╱‾‾╲
　　　　　　　 D　　NP
　　　　　　the　　△
　　　　　　　　　　piano
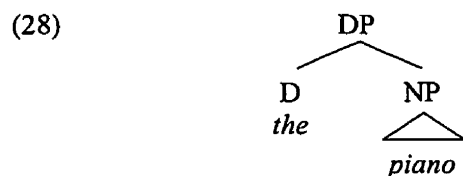
The lexical items are italicised to indicate that they are treated as syntactic objects in and of themselves.

One consequence of this strictly derivational view of phrase structure is that there is no inherent distinction between head/X^0 and phrase/XP. Rather, it is contextually determined. A syntactic object that lacks internal structure and fails to project is structurally ambiguous: it may be a head/X^0 or a phrase/XP. Thus, *piano* in (27) above is ambiguous between a head/X^0 (i.e. N^0) or a phrase/XP (i.e. NP).[15] The structural ambiguity of a simplex syntactic object means that when it occupies a specifier position, it may be parsed as a head/X^0 or phrase/XP. In the former case, this predicts that it will sometimes be possible to move a head/X^0 from a specifier position to adjoin to another head, as illustrated in (29).

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[15] Chomsky (1995:249) argues that clitics are determiners that can be analysed as bearing XP and X^0 properties simultaneously.

(29)   *movement of Y^0 to Z^0*

```
            ZP
           /  \
        Z⁰     XP
       /      /  \
   Y⁰/YP     X'
```
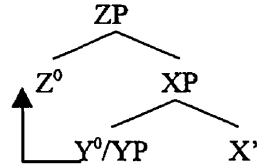
The simplex syntactic object that is mnemonically represented as Y^0/YP is moved in accordance with the definition of the operation *Move*, defined as follows (see Chomsky 1995:250):

(30)   *Move*
        Concatenate two syntactic objects α and β, taken from within α or the complement of α, and project a syntactic object γ with α specified as the label for γ.

In (29), Z^0 corresponds to α, and Y^0/YP corresponds to β, contained within the complement of Z^0, namely XP. The outcome of Move is represented in (31).

(31)
```
                   ZP
                  /  \
              Z⁰      XP
             /  \    /  \
        Y⁰/YPᵢ  Z⁰ tᵢ    X'
```
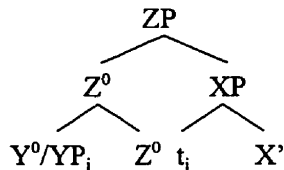
The chain CH = (Y^0/YP$_i$, t_i) formed by Move also conforms to the "Uniformity Condition" (Chomsky 1995:253):

(32)   *Uniformity Condition*
        A chain is uniform with regard to phrase structure status.

The chain in (31) is uniform because the moved syntactic object has the identical phrase structure status before and after the Move; both members of the chain are structurally ambiguous (i.e. Y^0/YP$_i$).

Thus, in the "bare phrase structure" theory, a simplex object in a specifier position is allowed to move to a higher head/X^0 position (subject to a locality condition to be discussed later). This aspect of the theory provides some insight into the morphosyntax of Plains Cree noun incorporation, which will be treated in Chapter 4.

1.5.2 Theta-Role Assignment as Feature-Checking

The claim that predicates are syntactic objects makes the notion of argument structure as an ordered list of theta-roles superfluous. Since predicates are not, strictly speaking, in the lexicon, it follows that there cannot be predicate argument structures in the lexicon either. Following Hale and Keyser (1993), I claim that it is the *v*P structures themselves that constitute the argument structure of the predicate. This has the consequence that grammatical phenomena which in previous analyses would refer to argument structure will in the present analysis refer to *v*P structure.

If argument structure information is purely syntactic in the form of *v*P structure, then this means that theta-role assignment—understood as the saturation of an argument of a predicate by a syntactic object—must also be a syntactic operation. I propose that theta-role assignment is achieved by means of formal-feature checking, an operation that is independently motivated. Although Chomsky (1995:§4.6) explicitly rejects such a possibility, Lasnik (1995), Bošković and Takahashi (1998), Manzini and Savoia (1998), and Hornstein (1999) argue that the logic of the minimalist framework forces theta-role assignment to be treated as a kind of feature-checking.

In the minimalist framework, formal features on X must be checked by an appropriate syntactic object for a syntactic derivation to converge at the interface levels. A convergent derivation is one that gives rise to a well-formed representation, and a representation is well-formed if it is interpretable at the interface levels. There are two interface levels: the conceptual-intentional interface (Logical Form/LF), and the articulatory-perceptual interface (Phonetic Form/PF).

Formal features can be checked via either Merge or Move. For illustration, consider (33).

(33)   a.   [$_{IP}$ [$_I$ {FF}] [$_{VP}$ arrived [$_{SC}$ an ICE train at the Hauptbahnhof]]]
       b.   [$_{IP}$ There [$_I$ {FF}] [$_{VP}$ arrived [$_{SC}$ an ICE train at the Hauptbahnhof]]]
       c.   [$_{IP}$ An ICE train$_i$ [$_I$ {FF}] [$_{VP}$ arrived [$_{SC}$ t$_i$ at the Hauptbahnhof]]]

(33a) illustrates a derivational stage at which the formal feature of the matrix Infl is left unchecked.[16] This formal feature, whatever it is, can be checked in either one of two ways. It can be checked by inserting the expletive *there* in the matrix Spec, IP (33b). This is an instance of checking a formal

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[16] This is called the "EPP" (i.e. "Extended Projection Principle") feature in Chomsky 1995.

feature via Merge. Or it can be checked by moving the subject of the "small clause" *an ICE train* to the matrix Spec, IP (33c).[17] This is an instance of checking a formal feature via Move. Either way, the formal feature of the matrix Infl is properly checked and the derivation converges, giving rise to a grammatical English sentence.

If theta-role assignment is a species of formal-feature checking, then it should be possible for it to take place either via Merge and Move. This means, for instance, that as a continuation of (34a), where the formal feature of v_1—call it the "theta-role feature"—is already checked by ARG$_1$, one can either insert another argument ARG$_2$ in Spec, vP_2 (34b) or move ARG$_1$ to Spec, vP_2 for the purpose of checking $\{\theta\}$ (i.e. the theta-role feature) on v_2 (34c).

(34) a.

```
                    vP₂
                   /  \
                  /    \
                 /      \
               v₂       vP₁
              {θ}       /  \
                     ARG₁   \
                           /  \
                          v₁   ROOT
                         {θ}✓
```

b. *checking via Merge*

```
                 vP₂
                /  \
               /    \
            ARG₂     \
                    /  \
                   /    \
                 v₂     vP₁
                {θ}✓    /  \
                     ARG₁   \
                           /  \
                          v₁   ROOT
                         {θ}✓
```

c. *checking via Move*

```
                vP₂
               /  \
              /    \
          ARG₁ᵢ    \
           ▲      /  \
           |    v₂    vP₁
           |   {θ}✓   /  \
           |_____ tᵢ /    \
                    /  \
                   v₁   ROOT
                  {θ}✓
```

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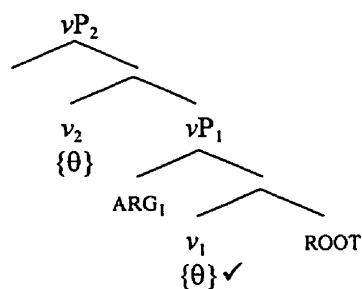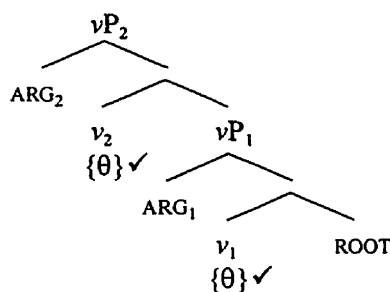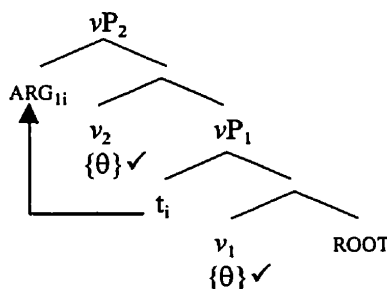
[17] Small clauses are clauses without their own tense or force.

Thus, (34b) satisfies feature-checking via Merge, whereas (34c) satisfies feature-checking via Move. The *v*P structure (34b) represents the syntactic structure of an ordinary transitive verb, with two theta-role features checked by two argument expressions. As for (34c), notice that the same argument expression checks two distinct theta-role features. At first glance, this is a violation of the Theta Criterion (Chomsky 1981, 1986), which requires a one-to-one correspondence between argument expressions and theta-roles (Chomsky 1981:36):

(35)   *Theta Criterion*
        Each argument bears one and only one theta-role, and each theta-role is assigned to one and only one argument.

(34c) violates this because there is a one-to-many correspondence between an argument expression and theta-role features, in particular, one argument expression checks two theta-role features. However, I will propose in §3.2.4 that this type of derivation gives rise to what I call "dynamic unaccusatives" in Plains Cree. (Its theoretical and empirical justification is given in Chapter 7.) There is nevertheless a sense in which the Theta Criterion is respected in (34c): there is a one-to-one correspondence between *v* positions and theta-role features. From this, I conclude that, in an analysis in which theta-roles have the status of formal features, the Theta Criterion is to be understood as enforcing a one-to-one correspondence between *v* positions and theta-role features:

(36)   *Relativised Theta Criterion*
        Each *v* bears one and only one theta-role feature, and each theta-role feature is borne by one and only one *v*.

This relativised Theta Criterion rules out a situation in which a *v* bears more than one theta-role feature. It also excludes the possibility that more than one *v* co-assigns a theta-role. Consequently, it derives the effect that there are always as many *v*s as theta-role features in phrase structure.

Finally, I propose that whether the theta-role feature on a *v* is checked via Merge or Move is a property of the *v*. Specifically, I claim that certain *v*s require that the theta-role feature be checked by Move; otherwise it is checked by Merge. This amounts to saying that as far as the theta-role feature is concerned, checking by Merge is the default, unmarked option, whereas checking by Move is the marked option, which occurs only if it is lexically specified. Languages may differ as to whether they contain such marked *v*s in their vocabulary.

I now introduce the reader to some basics of Plains Cree grammar as a guide to the phenomena to be discussed in the upcoming chapters.

1.6 A Mini-Grammar of Plains Cree

This section provides information about several aspects of Plains Cree that is intended to enhance the reader's understanding of the discussions in the ensuing chapters. Accordingly, the descriptions of the language to follow are by no means exhaustive, and somewhat simplified. The interested reader is invited to consult descriptive work on Plains Cree such as Wolfart 1973, 1996, and Ahenakew 1987. Here, I touch upon four topics: the notion of lexical categories/verb types, that of "order," that of "direction," and that of "obviation."

1.6.1 Two Lexical Categories and Four Morphological Verb Types

Plains Cree has two major lexical categories, nouns and verbs. Nouns are subcategorised in terms of "animacy." Thus, there are animate nouns (e.g. *kinosêw* 'fish') and inanimate nouns (e.g. *wiyâkan* 'dish') in Plains Cree. Verbs are subcategorised into four types according to the animacy of the argument that they categorically select, and form four different inflectional categories. Two verb types categorically select the subject argument. The majority of these verb types are intransitives. Conventionally, those that select an animate subject are called "animate intransitive verbs," and those that select an inanimate subject are called "inanimate intransitive verbs." The other two verb types categorically select the object argument. Those that select an animate object are called "transitive animate verbs," and those that select an inanimate object are called "transitive inanimate verbs." The majority of these verbs are transitives, but the class of transitive animate verbs subsumes ditransitive and applicative verbs. Chapter 3 identifies five different verb types, distinguished from one another in terms of the *v*P structure with which they are associated.

1.6.2 Order: Independent vs. Conjunct

Verbal complexes come in two "orders," "independent" and "conjunct." Independent and conjunct verbal complexes take different sets of inflectional morphology. Verbal complexes can occur in either

order (37) unless they are embedded; embedded clauses are expressed only by conjunct verbal complexes (38).

(37) a.   ki-sâk-ih-â-w   *independent*
             2-love-TRAN-A.TH-3
             'you love her/him'

     b.   ê-sâk-ih-at   *conjunct*
             CONJ-love-TRAN-2>3
             'you love her/him'

(38) a.   *ni-kisk-êyiht-ê-n   ki-sâk-ih-â-w
             1-know-by.mind-A.TH-LCAL 2-love-TRAN-A.TH-3

     b.   ni-kisk-êyiht-ê-n   ê-sâk-ih-at
             1-know-by.mind-A.TH-LCAL CONJ-love-TRAN-2>3
             'I know you love her/him'

Notice that person prefixes such as *ni-* and *ki-* occur only in independent verbal complexes. In conjunct verbal complexes, one of the "conjunct markers" occurs instead, and all agreement morphology is suffixal; *ê-* is the default conjunct marker in Plains Cree.

1.6.3 Direction: Direct vs. Inverse

The grammatical category "direction" concerns only verbs that categorically select an animate object, i.e. transitive animate verbs. Transitive animate verbs take two forms, the "direct" and "inverse" forms, which are exemplified by (39).

(39) a.   ni-sâk-ih-*â*-w   *direct*
             1-love-TRAN-A.TH-3
             'I love her/him'

     b.   ni-sâk-ih-*ik*(*w*-w)   *inverse*
             1-love-TRAN-INV-3
             's/he loves me'

The verbal complex *nisâkihâw* 'I love her/him' is in the direct form, whereas the verbal complex *nisâkihik(ww)* 's/he loves me' is in the inverse form. Which direction a verbal complex takes is

determined by interaction between the hierarchy between persons and their predicate-argument relation. The generalisation is the following:

(40) In the context in which person α is higher in the "person (or animacy) hierarchy" than person β,
    a.   if person α is the subject argument, and person β is the object argument of the predicate, then the verbal complex is in the direct form;
    b.   if person β is the subject argument, and person α is the object argument of the predicate, then the verbal complex is in the inverse form.

A person (or animacy) hierarchy referred to in (x) is a ranking between different persons (e.g. 1st, 2nd, 3rd, and inanimate persons). For instance, in Plains Cree's person (or animacy) hierarchy, first person is ranked higher than third person.[18] Thus, in (39a) above, where the subject argument is first person and the object argument is third person, the verbal complex is in the direct form in conformity to (40a). Likewise, in (39b), where the subject argument is third person and the object argument is first person, the verbal complex is in the inverse form in conformity to (40b). Notice that the direct vs. inverse distinction is made only by means of "theme signs." The direct verbal complex in (39a) has the direct theme sign -*â*, whereas the inverse verbal complex in (39b) has the inverse theme sign -*ik(w)*; everything else is identical between the two verbal complexes (save the deletion of two adjacent *w*s in the inverse verbal complex). In particular, the first person prefix *ni-* and the third person suffix -*w* remain constant between the two verbal complexes in (39), despite the fact that *ni-* identifies the subject (or external) argument and -*w* identifies the object (or internal) argument in (39a), whereas their roles are swapped in (39b). In this dissertation, direct theme signs are called "animate theme signs," whereas inverse theme signs are called "inverse markers" unless otherwise indicated.

1.6.4 Obviation: Proximate vs. Obviative

"Obviation" as a grammatical category is a way to manage the salience of third person arguments in a discourse or a series of discourses. In this dissertation, however, obviation concerns only single clauses in which several third person arguments co-occur. In terms of obviation, the more salient argument is "proximate," whereas the less salient argument is "obviative." In unmarked situations, the subject argument of a transitive verb is more salient than the object argument, and thus proximate. The object argument is less salient than the subject argument, and thus obviative. In (41a), for instance, *John* is the

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[18] See Blain 1997:§2.1 for a concise exposition of the full-fledged Plains Cree person (or animacy) hierarchy and a discussion thereof.

subject, and thus the proximate argument, whereas *Mary* is the object, and thus the obviative argument. The obviative argument *Mary* is marked with the obviative suffix *-wa* in (41a).[19]

(41) a. John sâk-ih-ê-w   Mary-*wa*
J. love-TRAN-A.TH-3 M. -OBV
'John loves Mary'

b. ni-sâk-ih-â-w   Mary
1-love-TRAN-A.TH-3 M.
'I love Mary'

In contrast, when a transitive clause contains only one third person argument, it is the proximate argument (again, in unmarked situations). Although *Mary* is the object argument in (41b) too, it is the only third person argument; the subject argument is first person. Hence, it is a proximate third person argument, and thus occurs without the obviative suffix *-wa*. Obviation comes into play to demonstrate that the incorporated noun found within Plains Cree transitive verbal complexes is the internal argument, not the external argument (see §4.2.2).

1.7 Methodology

Unless otherwise indicated, the Plains Cree data presented in this thesis originate from two Plains Cree speakers, Pauline Christensen and Wally Awasis. Pauline was born in Wabasca-Desmaris, Alberta.[20] She is in her 60s. Wally was born in Thunderchild, Saskatchewan. He is in his 40s. The initial phase of my work on Plains Cree also benefitted from consultation with Mary Ann Palmer, who is originally from Little Pine, Saskatchewan. She is in her 40s. All three speakers are fluent and speak Plains Cree as their first language.

The data provided by my Plains Cree consultants were elicited in a series of person-to-person interview sessions, which were conducted from the summer of 1997 through the summer of 2000. The data elicited from each speaker was confirmed with the others. Where disagreement arises between speakers, it is so indicated. Furthermore, unless otherwise indicated, the data elicited during the sessions is fully consonant with evidence provided from textual sources. In some cases, my morphological

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[19] The glide [w] occurs when obviative nouns end with a vowel; otherwise the obviative suffix is *-a*.

[20] In Pauline's pronunciation, [ê] oftentimes surfaces as [î]. This is a trait of Plains Cree speakers from northern Alberta. I abstract away from this property in my transcription.

analyses depart from the conventional Algonquianist tradition. Where a particular analysis is non-standard or controversial, I have indicated so in the text.

1.8 Outline of the Thesis

In addition to this introductory chapter, there are six other chapters. They are organised as follows.

Chapter 2 presents evidence for the claim that Plains Cree roots are devoid of temporality (dubbed the "Zero Eventuality Hypothesis"). It is proposed that temporality τ is a semantico-syntactic feature [$\pm$ADD TO] in the sense of Verkuyl 1972, 1993, which captures the static vs. dynamic dichotomy of "eventualities." It is shown that the identification of temporality τ as dynamicity not only accounts for the "telicity" dichotomy at the sentential or vP level (which arises from its interaction with the quantificational property of argument expressions), but also accounts for a morphological property of Plains Cree verbs (which all other theories of eventualities but one fail to do). An empirical argument for localisation of temporality τ on v_1 is also provided. Further, an additional proposal is made to the effect that dynamic predicates necessarily have a transitive (i.e. double-layered vP) structure.

Chapter 3 shows that Plains Cree possesses a set of roots that are referentially dependent. On the assumption that referential dependency is a syntactic property (Postal 1969), I argue that the existence of such roots motivates a syntactic treatment of the verbal complexes which contain these roots. It follows from this that morphemes internal to verbal complexes are syntactic objects. I then introduce a (language-particular) linearisation mechanism of predicate-internal morphemes which provides a syntactic alternative to templatic analyses. The rest of the chapter introduces the syntactic structures which are the basis of Plains Cree verbal complexes. It is proposed that static unaccusatives are analysed by means of a single-layered vP structure; transitives, unergatives, and dynamic unaccusatives are analysed by means of a double-layered vP structure (with auxiliary mechanisms for the latter two); and applicatives/ditransitives are analysed by means of a triple-layered vP structure.

Chapter 4 examines two kinds of nominals that occur within verbal complexes in Plains Cree, incorporated nouns and "medials." These vP-internal nominals are both analysed as syntactic objects that undergo syntactic movement (i.e. incorporation). It is demonstrated that Plains Cree noun incorporation which results from movement of a noun to a v head applies or fails to apply according to the structure that hosts the nominal, revealing c-command and locality effects. It is also argued that a

treatment of medials as nominal ROOT-adjuncts (as opposed to argumental incorporated nouns) undergoing movement to v_1 accounts for the modification functions they serve. In particular, a syntactic analysis of medial incorporation captures the absence of medials modifying the external argument as a locality effect. Exhibiting c-command and locality effects, the two noun incorporation phenomena support a syntactic treatment of verbal complexes. More specifically, they are consistent with the postulated vP structures in which an argument expression is introduced in the specifier position of v.

Chapter 5 probes into two phenomena that are claimed to involve a syntactic operator that functions as a local binder, the Generic Object Construction (GOC) and the Unspecified Subject Construction (USC) in Plains Cree. I argue that the scope difference between the two constructions—GOC affects the object and USC affects the subject—follows from the different syntactic positions that the two operators occupy. Occupying two different syntactic positions implies, unless there is reason that suggests otherwise, that these two constructions can simultaneously apply to a single predicate. It is shown that this prediction is borne out, and the resultant operator scopes and morpheme order, which otherwise (e.g. in templatic terms) must be stipulated, are exactly what a vP syntax predicts. This lends further support to a syntactic treatment of Plains Cree verbal complexes.

Chapter 6 concludes the thesis by summarising the results of the preceding chapters, and by addressing several issues that arise from the general proposal as implications for the analysis of natural language predicates.

Chapter 7 is a supplement to this dissertation, and provides empirical and theoretical justification of the analysis of Plains Cree dynamic unaccusatives introduced in Chapter 3. Implications of the proposed analysis of dynamic unaccusatives has for "causative-inchoative alternation" are briefly discussed as well.

We now turn to Chapter 2, which examines the morphosemantic properties of Plains Cree predicates.

Chapter 2

The Zero Eventuality Hypothesis

2.0 Introduction

The previous chapter introduced the idea that a predicate consists of three ingredients: (i) argument-taking ability, (ii) temporality, and (iii) conceptual content. This further implies that a predicate is not a lexical primitive, but a syntactic construct. Specifically, I hypothesise that the three defining properties of a predicate are not localised in a single syntactic head, but are distributed in syntactic structure in the manner described by the following double-layered vP structure:

(1)
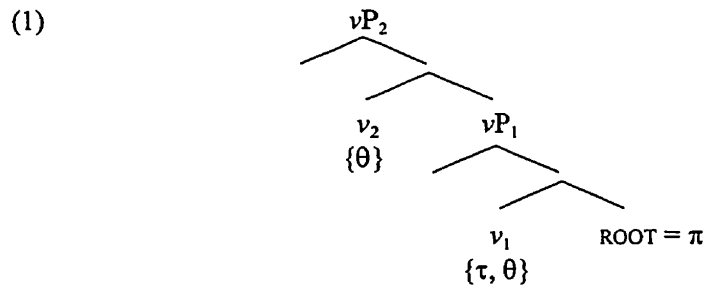
Each of v_1 and v_2 has the ability to introduce an argument expression in its specifier position. This is indicated by θ on v. Temporality τ is a property of v_1. Neither of these properties belongs to ROOT, but only conceptual content π. (More precisely, ROOT itself is the syntactic realisation of conceptual content π.) Here, I single out the claim that ROOT lacks temporality, and advance it as an independent hypothesis:

(2) *The Zero Eventuality Hypothesis (ZEH)*
     A root (i.e. ROOT) is devoid of temporality.

This hypothesis is called the "Zero Eventuality Hypothesis," abbreviated as the ZEH. "Zero" because ROOT lacks a temporal property. "Eventuality" because temporality τ is later identified as *dynamicity* in the sense of Verkuyl 1972, 1993; dynamicity is a species of aktionsart or "eventuality" (Bach 1986), which is the temporal property of a situation, cf. Smith 1991:3. The goal of this chapter is to motivate, on the basis of Plains Cree data, the ZEH and the theory of eventualities that it is based on.

The chapter is organised as follows. In §2.1, morphological evidence is invoked to argue that ROOT is temporality-free. An apparent problem concerning the ambiguity of temporality τ on v_1 (i.e. whether it is dynamic or static) is also discussed in this section. §2.2 identifies temporality τ with dynamicity, a dimension of eventuality (Bach 1986), which is understood as the syntactic (and semantically formalisable) feature [±ADD TO] of Verkuyl 1972, 1993. It is demonstrated that this feature enters into semantic composition, interacting with the quantificational feature of argument expressions. This eventuality composition gives rise to a telicity, another dimension of eventuality, at the vP level. Localisation of temporality τ on v_1 (i.e. the transitivity suffix) is empirically justified in this section as well. In §2.3, I clarify why other eventuality theories are not appropriate to describe Plains Cree data. §2.4, introduces a structural distinction between dynamic and static intransitive predicates. §2.5 concludes the chapter. Finally, §2.6, the appendix to this chapter, explains why eventuality dimensions other than dynamicity and telicity are irrelevant to compositional semantics.

2.1 Evidence for the ZEH

We have observed in Chapter 1 that the Plains Cree verbal complexes in (3) are ill-formed.

(3)   a.   *ni-kino-n
               1-tall-LCAL

       b.   *ni-pîkw-ê-n
               1-break-I.TH-LCAL

These verbal complexes consist of a root and appropriate pronominal agreement morphology. In many other polysynthetic languages, this is a morphological construct that would derive a well-formed verbal complex. To improve grammaticality, the roots must be followed by an appropriate *final*, or what I call transitivity suffix.

(4)   a.   ni-kino-*si*-n
               1-tall-STAT-LCAL
               'I am tall'

       b.   ni-pîko-*n*-ê-n
               1-break-by.hand-I.TH-LCAL
               'I break it (by hand)'

Suffixation of *-(i)si* to the root *kinw* 'tall' gives rise to the static intransitive verbal complex *nikinosin* 'I am tall' (4a). Likewise, suffixation of *-(i)n* 'by hand' to the root *pîkw* 'break' gives rise to the dynamic transitive verbal complex *nipîkonên* 'I break it (by hand)' (4b).

I hypothesised in Chapter 1 that the verbal complexes in (3) are illicit because a root itself is not a predicate in Plains Cree. A root is minimally not a predicate because the position that a root occupies is reserved for a syntactic object that lacks temporality, as per the ZEH. Temporality is one of the three defining characteristics of a predicate, along with argument-taking ability and conceptual content. This section provides morphological evidence that motivates the ZEH. First, §2.1.1 submits data that favour the ZEH. Then in §2.1.2, I will discuss treatment of data that appears to disfavour the ZEH.

2.1.1 Paradigmatic Cases

This subsection demonstrates that Plains Cree verbal morphology verifies the ZEH: roots lack temporality (as well as argument-taking ability). This verification comes from observation of two example paradigms of "verb stems" that vary not only in transitivity, but also in dynamicity, a dimension of eventuality to be identified as temporality τ. In the Algonquianist tradition, a "verb stem" is defined as morphological unit that consists of a root and a transitivity suffix (or *final* in the conventional terminology). The overwhelming majority of verb stems in Plains Cree have this morphological structure, regardless of dynamicity. (5) and (6) contain static and dynamic verbal stems, respectively. Each verb stem is identified by the square brackets around it. The lefthand morpheme of a verb stem is the root, and the righthand morpheme, which is boldfaced and italicised, is the transitivity suffix.

(5)   *static verb stems*

      a.   [âhko-*si*]-w
              sick-STAT-3
              's/he is sick'

      b.   [mihkw-*â*]-w
              red-S.STAT-0
              'it is red'

      c.   [miyw-*êyiht*]-am(-w)
              good-by.mind-I.TH-3
              's/he likes it'

(6)   *dynamic verb stems*

    a.   [pâhp-*i*]-w
            laugh-INTR-3
            's/he laughs'

    b.   [tihk-*ipayi*]-w
            melt-INCH-0
            'it melts (suddenly)'

    c.   [ocê-*m*]-ê-w
            kiss-by.mouth-A.TH-3
            's/he kisses her/him'

That these two sets of verb stems differ in dynamicity can be illustrated by the different interpretations they receive in the context of what Ahenakew and Wolfart (1983) call "light reduplication."[1] Light reduplication adds [a] as the nucleus of the prefixal reduplicant, and copies the initial consonant of the stem as its onset. If the stem begins with a vowel, then [y] is inserted to avoid hiatus.

(7)   *light reduplication applied to static verb stems*

    a.   *ay*-[âhko-*si*]-w
            RED-sick-STAT-3
            's/he is very sick'

    b.   *ma*-[mihkw-*â*]-w
            RED-red-S.STAT-0
            'it is very red'

    c.   *ma*-[miyw-*êyihi*]-am(-w)
            RED-good-by.mind-I.TH-3
            's/he really likes it'

---

[1] Different interpretations, not because of different sets of algorithms, but because of differing temporal properties of the verb stems.

(8)   *light reduplication applied to dynamic verb stems*

    a.   *pa*-[pâhp-*i*]-w²
              RED-laugh-INTR-3
              's/he is snoozing'

    b.   *ta*-[tihk-*ipayi*]-w
              RED-melt-INCH-0
              'it is starting to melt'

    c.   *ay*-[ocê-*m*]-ê-w
              RED-kiss-by.mouth-A.TH-3
              's/he is kissing her/him'

On one hand, application of light reduplication to a static verb stem gives rise to a degree-augmentative interpretation (7). That is, (7a)–(7c) are translated as 's/he is *very* sick,' 'it is *very* red,' and 's/he *really* likes it,' respectively.³ On the other hand, if applied to a dynamic verb stem, a progressive or on-going interpretation emerges, as indicated by the English translations in (8).

Notice that the static verb stems in (5) and the dynamic verb stems in (6) contain a different set of transitivity suffixes from one another. The suffix *-(i)si* in (5a) is what Denny (1984:261) identifies as denoting a 'state' of the animate subject. Denny (1984:269) also identifies *-â* in (5b) as denoting a 'spatial state' of the inanimate subject. The transitive suffix *-êyiht* 'by mind' in (5c), which agrees with the inanimate object, occurs in verb stems that describe situations in which consciousness is invoked. As being conscious is not usually considered a dynamic state of mind, situations described by means of the transitive suffix *-êyiht* 'by mind' are static. Turning to the dynamic verb stems, the intransitive suffix *-i* in (6a) is identifiable as denoting a 'process' (Denny 1984:262). The intransitive suffix *-payi* in (6b), which is treated as the inchoative (i.e. change-of-state) suffix in this thesis, is glossed as 'move' in Wolfart 1973:71.⁴ The transitive suffix *-(a)m* 'by mouth' in (6c), which agrees with the animate object,

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²The speaker found (8a) slightly odd, perhaps due to the inherent semelfactive nature of the root *pâhp* 'laugh,' cf. §2.6.2.
³ This diverges from the description of light reduplication by Ahenakew and Wolfart (1983:370), who claim that the progressive, ongoing interpretation is also available with static verb stems. In fact, Ahenakew and Wolfart (1983:374) associate the degree-augumentative (i.e. their "intensitive") interpretation with the function of heavy reduplication (described in §2.6.2) applied to static verb stems. This degree-augumentative interpretation is available only with one speaker, but not with the other. This second speaker constantly produces the ongoing interpretation regardless of the dynamicity of the verb stem. As far as the first speaker is concerned, she allows for the interpretation that contains the adverb *still*, instead of *very*, for (7a). This is true of (7b) too, but to a lesser degree of acceptability. I suspect that these are instances of the progressive, ongoing interpretation, and acceptability is subject to the interpretability of the verb stem as a "stage-level" predicate in the sense of Carlson 1977.
⁴ For Denny (1984:265), *-payi* consists of the suffix *pay-* 'go, become' and the process-denoting suffix *-i*.

occurs in such verb stems as denoting kissing, biting, and so on which are usually considered dynamic. The table in (9) summarises these transitivity suffixes in terms of dynamicity.

(9) *transitivity suffixes and dynamicity*

static	dynamic
-isi	*-i*
-â	*-payi*
-êyiht 'by mind'	*-am* 'by mouth'

From the above facts, one could conclude that the dynamicity of verb stems is determined by the transitivity suffix, rather than the root. Since dynamicity is temporality τ, this conclusion supports the ZEH, which proposes that a root (i.e. ROOT) lacks temporality.

That the above conclusion is not far-fetched is evidenced by paradigms of verb stems in which the root remains the same, but the transitivity suffix alters depending on dynamicity (as well as transitivity). In Plains Cree, it is not difficult to construct many such verb stem paradigms (although it is not always the case that each paradigm is complete in the sense that there is no gap[5]). The two paradigms given in (10) and (11) contain the roots *tahk* 'cold' and *sêk* 'scare,' respectively.

(10)   *tahk* 'cold'

       a.   [tahk-*â*]-w   *static intransitive*
              cold-s.STAT-0
              'it is cold'

       b.   [tahk-*ipayi*]-w   *dynamic intransitive*
              cold-INCH-0
              'it gets cold'

       c.   [tahk-*in*]-*am*(-w)   *dynamic transitive*
              cold-by.hand-I.TH-3
              's/he cools it by hand'

---

[5] In particular, many roots that occur in unergative stems seem to be restricted to that context. Idiosyncrasy of this kind, however, is not necessarily a property of the lexicon in the sense of a level of grammar. See Di Sciullo and Williams 1987 for discussion.

(11)   *sêk* 'scare'

        a.   [sêk-*isî*]-w   *static intransitive*
              scare-STAT-0
              's/he is scared'

        b.   [sêk-*ipayî*]-w   *dynamic intransitive*
              scare-INCH-0
              's/he gets scared (suddenly)'

        c.   [sêk-*ih*]-*ê*-w   *dynamic transitive*
              scare-TRAN-A.TH-3
              's/he scares her/him'

(10) shows that the root *tahk* 'cold' recurs in the three verb stems differing in dynamicity (as well as transitivity): in the static intransitive verb stem *tahkâ* 'x (inanimate) is cold;' in the dynamic intransitive verb stem *tahkipayi* 'x (inanimate) gets cold;' and in the dynamic transitive verb stem *tahkin* 'x cools y (inanimate) by hand.' Likewise, (11) shows that the root *sêk* 'scared' recurs in the static intransitive verb *sêkisi* 'x (animate) is scared,' in the dynamic intransitive verb stem *sêkipayi* 'x (animate) gets scared,' and in the dynamic transitive verb stem *sêkih* 'x scares y.'

What does it mean that the identical root can occur in verb stems that vary from one another in terms of dynamicity? I suggest that it is to be interpreted in two ways: that the root is devoid of information pertaining to dynamicity, and that it is instead the transitivity suffix that conveys dynamicity information. The first statement is the claim of the ZEH. The second statement identifies a transitivity suffix as occupying v_1, the locus of temporality τ (i.e. dynamicity) by hypothesis. In terms of the syntactic structure under which the ZEH is embedded, the static intransitive verb stem (10a) and the dynamic transitive verb stem (10c), for instance, are represented in (12a) and (12b), respectively.

(12)   a.   *tahkâ*   *'x (inanimate) is cold'*

static → {τ}

b. *tahkin 'x cools y (inanimate) by hand'*

$$\begin{array}{c}
vP_2 \\
\diagup\!\diagdown \\
\diagup\!\diagdown \\
v_2 \quad vP_1 \\
\diagup\!\diagdown \\
\diagup\!\diagdown \\
v_1 \quad \text{ROOT} \\
\textit{-in} \quad \textit{tahk} \\
\textit{dynamic} \rightarrow \{\tau\}
\end{array}$$
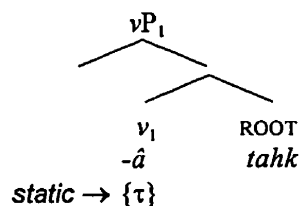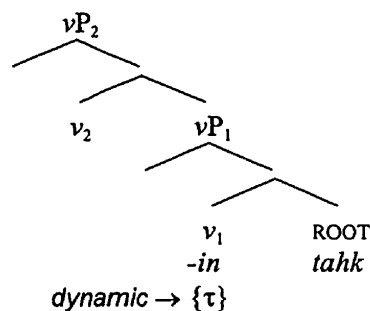
The intransitive suffix *-â* and the transitive suffix *-in* 'by hand' are both identified with v_1, the locus of temporality τ; they are static and dynamic, respectively.[6]

In sum, the morphological structure of Plains Cree verb stems lends empirical support to the ZEH: a root, the syntactic object ROOT, does not convey temporality τ. It is rather a transitivity suffix (i.e. v_1) that conveys this defining property of a predicate. We now turn our attention to data that appear to contradict this conclusion.

2.1.2 Problematic Cases

Unlike the paradigms discussed in the previous subsection, there are cases where the transitivity suffix appears to be ambiguous as to dynamicity information. Compare the verbal complexes in (13).

(13) a. [sâk-*iht*]-â-w   *static*
          love-TRAN-I.TH-3
          's/he loves it'

      b. [kanâc-*iht*]-â-w   *dynamic*
          clean-TRAN-I.TH-3
          's/he cleans it'

Both of these verb stems contain the identical transitive suffix *-iht*. Nevertheless, the two verb stems differ in dynamicity: the verb stem *sâkiht* 'x loves y (inanimate)' describes a static situation, whereas the verb stem *kanâciht* 'x cleans y (inanimate)' describes a dynamic situation. That these verb stems differ

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[6] The mechanism by which the surface morpheme order obtains is discussed in §3.1.2. Discussion of what morpheme fills the temporarily open position v_2 in (12b) is deferred until §3.2.2.

in dynamicity is evident from the interpretive difference between them in the context of light reduplication.

(14) a.   *sa*-[sâk-*iht*]-â-w   *static*
           RED-love-TRAN-I.TH-3
           's/he really loves it'

      b.   *ka*-[kanâc-*iht*]-â-w   *dynamic*
           RED-clean-TRAN-I.TH-3
           's/he is cleaning it'

On one hand, (14a), the reduplicated version of (13a), receives a degree-augmentative interpretation (i.e. 's/he *really* loves it'). On the other hand, (14b), the reduplicated version of (13b), receives a progressive, ongoing interpretation instead. These interpretations are characteristic of a static and a dynamic nature of the base verb stem, respectively.

The fact that the transitive suffix -*iht* is able to occur either in static or in dynamic verb stems prima facie suggests that it is not the transitive suffix -*iht*, but rather the root *sâk* 'love' or *kanât* 'pure, clean,' that determines the dynamicity of the verb stem, and thus is the locus of temporality τ. If true, this contradicts the claim of the ZEH. To maintain the ZEH, we need to avoid this conclusion. There are two factors to consider.

First, if the root *kanât* 'pure, clean' is specified as dynamic, as it might be in the verb stem *kanâciht* '*x* cleans *y* (inanimate),' then the static nature of the intransitive verb stem *kanâtan* '*x* (inanimate) is clean' in (15) cannot be straightforwardly explained. The static nature of this verb stem is verified by the degree-augmentative interpretation that is assigned to the verbal complex that has undergone light reduplication (15b).

(15) a.   [kanât-*an*](-w)   *static*
           clean-STAT-0
           'it is clean'

      b.   *ka*-[kanât-*an*](-w)
           RED-clean-STAT-0
           'it is very clean'

Thus, at least, one cannot say outright that the root *kanât* 'pure, clean' is either dynamic or static.

Second, one must consider the nature of the transitive suffix *-iht*. This is one of a handful of transitive suffixes in Plains Cree that lack a manner specification. Manner specification is an instrumental meaning associated with many other transitive suffixes.[7] For instance, the transitive suffixes *-êyiht* and *-in* in (16) are specified as 'by mind' and 'by hand,' respectively.

(16) a. [kisk-*êyiht*]-am(-w)   *static*
     know-by.mind-I.TH-3
     's/he knows it'

   b. [pîko-*n*]-am(-w)   *dynamic*
     break-by.hand-I.TH-3
     's/he breaks it'

As discussed in the previous subsection, these manner specifications strongly imply static and dynamic situations, respectively. The lack of a manner specification on the transitive suffix *-iht*, then, is interpretable as its lack of dynamicity implication. If so, it becomes possible to hypothesise that this transitive suffix carries temporality τ, but its value—whether static or dynamic—is underspecified. Then, one can attribute the varying dynamicity of the above verb stems, *sâkiht* '*x* loves *y* (inanimate)' and *kanâciht* '*x* cleans *y* (inanimate),' which contain the manner-neutral transitive suffix *-iht*, to the nature of this suffix *-iht*.

The remaining question is how exactly the unspecified value of temporality τ on the transitive suffix *-iht* is determined. Since dynamicity is fixed at the stem level, it is clear that the root with which the transitive suffix *-iht* is combined plays a role in setting an appropriate value. A root, by hypothesis, carries conceptual content. Thus, it is conceptual content that helps determine the value of temporality τ on the transitive suffix *-iht*. Notice this is different from claiming that a root itself determines dynamicity by bearing temporality τ.[8] Which root chooses which value, however, seems idiosyncratic. When the root *sâk* 'love' concatenates with *-iht*, temporality of the transitive suffix is set for static (17). When the root *kanât* 'pure, clean' concatenates with *-iht*, temporality of the transitive suffix is set for dynamic (18).

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[7] See §3.2.2.2 for a survey of Plains Cree transitive suffixes.
[8] Therefore, I am claiming that even if a root has some temporal effect, it should differ in nature from the temporality τ encoded on v_1.

(17) a. v_1 +   ROOT   b. vP_1
              -iht   *sâk*   ⌃

              {τ}   'love'   → v_1 ROOT
              underspecified   *-iht*   *sâk*
                                                      static →   {τ}   'love'

(18) a. v_1 +   ROOT   b. vP_1
              -iht   *kanât*   ⌃

              {τ}   'pure, clean' → v_1 ROOT
              underspecified   *-iht*   *kanât*
                                                   dynamic →   {τ}   'pure, clean'

There may be a factor that controls the value-determination pattern, but I do not know what the determinant is at this point.

In sum, I have argued that the cases in which the root appears to carry temporality τ are restricted only to manner-neutral transitive suffixes such as *-iht*. Unlike many other manner-specified transitive suffixes such as *-êyiht* 'by mind' and *-in* 'by hand,' these suffixes are underspecified for dynamicity value. Only when a root is combined with such a manner-neutral transitive suffix does conceptual content of the root determine the dynamicity value of temporality τ on the transitive suffix. A root is not the locus of temporality τ. Consequently, the ZEH is maintained in its strongest form. The next section justifies temporality τ as a syntactic feature by identifying it with the dynamic feature [±ADD TO] of Verkuyl 1972, 1993, which enters into eventuality composition. Further, an empirical argument is given which favours v_1 (as opposed to v_2, for instance) as the locus of temporality.

2.2 Semantic/Syntactic Effects of τ

Temporality τ is postulated as a syntactic feature. As such, it is expected to interact with (a feature or features of) other syntactic objects to give rise to both syntactic and semantic effects. Following Verkuyl 1972, 1993, I propose that this is a feature that capitalises on the dynamicity of a situation, which is identified as [±ADD TO]. This section first demonstrates that this feature in fact interacts with the quantification feature [±SQA] (SQA = "specified quantity of A") to yield a semantic or aspectual effect in terms of telicity at the vP level. The second half of the section argues that there is reason to believe that temporality τ (i.e. the dynamicity feature [±ADD TO]) resides in v_1, not in other vs.

2.2.1 The Role of τ in Eventuality Composition

Verkuyl 1993, a refinement of Verkuyl 1972, demonstrates that dynamicity is the eventuality dimension at the V^0 level—the v_1 level in my theory—that effects the eventuality distinction in terms of telicity at the level of S(entence)—the level of (topmost) vP in my theory—as a result of semantic composition with the quantificational property of its argument(s). The ZEH-based eventuality theory argues, following Verkuyl (1972, 1993), that dynamicity and telicity are the only eventuality dimensions that are syntactic in nature. Other dimensions of eventuality such as the accomplishment (e.g. *John built a house*) vs. achievement (e.g. *John reached the summit*) distinction assumed in Vendler 1967 are lexical, in the sense that they are irrelevant to semantic composition. (This claim is motivated in §2.6) Before going into empirical discussions pertaining to eventuality composition, a brief description of its three ingredients—dynamicity, telicity, and nominal quantification—is in order, which is followed by an overview of patterns of eventuality composition.

First, dynamicity concerns whether a verb implies a sense of progress, addition, or (literal or figurative) movement. If it does, the verb is dynamic. If it does not, the verb is static. Verkuyl (1972, 1993) uses the feature [±ADD TO] to informally represent dynamicity. Thus, dynamic verbs such as *wash*, *sing, eat*, etc. are [+ADD TO], whereas static verbs such as *want, know, like*, etc. are [–ADD TO] in Verkuyl's terminology. In the ZEH framework, this is a property of v_1 of each predicate, viz. temporality τ. Second, telicity concerns whether a situation is described in such a way that it ends (or begins) at a certain (literal or figurative) spatio-temporal point. If it does, the situation is telic. If it does not, the situation is atelic.[9] In the ZEH framework, this is a semantic interpretation arrived at at the topmost vP. Third, the quantificational property of a nominal argument relevant to eventuality composition is whether it denotes a bounded/delimited set. In Verkuyl 1972, 1993, the feature [±SQA] is informally used. On the one hand, plural nouns with a definite article or numeral (e.g. *the dishes* or *three dishes*) and singular "count nouns" (e.g. *an apple*) have a bounded/delimited quantity. These nominals are [+SQA]. On the other hand, nominal expressions such as "bare plurals" (e.g. *dishes*) and "mass nouns" (e.g. *milk*) have no bounded/delimited quantity. Similarly, negatively quantified nominal expressions (e.g. *no dish*) lack a quantity, denoting an empty set, which is not bounded/delimited. Hence, they are also [–SQA]. (19) provides an overview of the eventuality composition envisaged in Verkuyl 1993. v_1 and vP eventualities are the terminology of the ZEH-based approach.

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[9] Verkuyl (1993) uses "terminative" for telic and "durative" for atelic.

(19)   *eventuality composition (informal) à la Verkuyl 1993*

	[–ADD TO] (static)	[+ADD TO] (dynamic)	
a. v_1 eventuality			
b. argument(s)	[±SQA]	∃[–SQA]	∀[+SQA]
c. vP eventuality	atelic	atelic	telic
	‖	‖	‖
d. "ontological" eventuality	state	state/process	transition
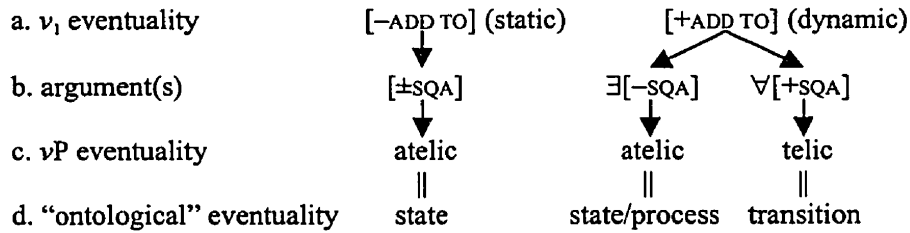
First, if the v_1 eventuality is static/[–ADD TO], the vP eventuality is atelic, regardless of the quantificational property of the verb's argument(s). This is what the leftmost eventuality composition shows. Second, if the v_1 eventuality is dynamic/[+ADD TO], either a telic or atelic eventuality can result at the vP level. On the one hand, as the rightmost eventuality composition shows, only if every argument expression is [+SQA] (i.e. ∀[+SQA]) will a telic vP eventuality obtain.[10] On the other hand, if there is at least one [–SQA] argument expression (i.e. ∃[–SQA]), then an atelic vP eventuality results. This is what the middle eventuality composition shows. The two vP-eventualities are divided into three "ontological"—as Verkuyl (1993) puts it—eventualities (19d). If the situation described by vP is a situation that fails to occur, no matter whether the v_1 is static or dynamic, it is a "state." If the situation described is dynamic, but open-ended, it is a "process." These are atelic vP eventualities. Telic vP eventualities are ontologically called "transitions."[11]

That the eventuality composition illustrated in (19) is correct is evidenced both by English and Plains Cree. First, consider the following English sentences that contain the static, [–ADD TO] verb *want*.

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[10] Necessary, but not sufficient. This is because of the existence of verbs like *push*. Those verbs are dynamic or [+ADD TO], but fail to give rise to a telic vP eventuality even if all its arguments are [+SQA]. See §14.1 of Verkuyl 1993 for a solution.

[11] Verkuyl (1993) uses "event" for transition. The terms *state*, *process*, and *transition* are from Pustejovsky (1991, 1995).

(20) *English*

a.	I [+SQA]	wanted [–ADD TO]	this candy [+SQA]	*atelic (state)*
b.	I [+SQA]	wanted [–ADD TO]	candies [–SQA]	*atelic (state)*
c.	Nobody [–SQA]	wanted [–ADD TO]	this candy [+SQA]	*atelic (state)*
d.	Nobody [–SQA]	wanted [–ADD TO]	candies [–SQA]	*atelic (state)*
e.	I [+SQA]	wanted [–ADD TO]	nothing [–SQA]	*atelic (state)*

If Verkuyl is correct, whenever the verb is static [–ADD TO], the *v*P eventuality is atelic, and ontologically a state, regardless of the quantificational property of argument nominals. That this is so is evidenced by compatibility with durative temporal adverbials such as *for a year*, a diagnostic of atelic eventualities.

(21) a. I wanted this candy *for a year*
      b. I wanted candies *for a year*
      c. Nobody wanted this candy *for a year*
      d. Nobody wanted candies *for a year*
      e. I wanted nothing *for a year*

A similar set of examples can be replicated in Plains Cree. All the sentences in (22) contain a static, [–ADD TO] verb stem *nitawêyiht* '*x* wants *y* (inanimate).' Its static [–ADD TO] status is confirmed by the obligatory appearance of the past-denoting prefix *kî-* (or *ohci-* when in the negative context) in the verbal complexes. (This prefix is not necessary with [–ADD TO] verb stems, as will be seen later.) In (22), I associate the quantificational property of the first person singular subject tentatively with the first person prefix *ni-*, and indicate this accordingly.[12]

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[12] The negatively quantified pronominals *mâwiyak* 'nobody' and *makkway* 'nothing' appear at the beginning of the sentence, which appears to be the rule. Incidentally, *mâwiyak* is an abbreviated form of *nama awiyak* with *nama* as a negatively quantifying particle and *awiyak* as the animate indefinite pronominal 'some/anybody,' whereas *makkway* is an abbreviated form of *nama kîkway* with *nama* as a negatively quantifying particle and *kîkway* as the inanimate indefinite pronominal 'some/anything.'

(22)   *Plains Cree*

a.   ni-kî-n(i)taw-êyiht-ê-n   ôma maskihkîs   *atelic (state)*
     1-PAST-want-by.mind-I.TH-LCAL   this candy
     [+SQA]-[–ADD TO]   [+SQA]
     'I wanted this candy'

b.   ni-kî-n(i)taw-êyiht-ê-n   maskihkîs-a   *atelic (state)*
     1-PAST-want-by.mind-I.TH-LCAL   candy-PL
     [+SQA]-[–ADD TO]   [–SQA]
     'I wanted candies'

c.   mâwiyak   ohci-n(i)taw-êyiht-am(-w) ôma maskihkîs[13]   *atelic (state)*
     nobody   PAST-want-by.mind-I.TH-3 this candy
     [–SQA]   [–ADD TO]   [+SQA]
     'nobody wanted this candy'

d.   mâwiyak   ohci-n(i)taw-êyiht-am(-w) maskihkîs-a   *atelic (state)*
     nobody   PAST-want-by.mind-I.TH-3 candy-PL
     [–SQA]   [–ADD TO]   [–SQA]
     'nobody wanted candies'

e.   makkway   ni-[t]ohci-n(i)taw-êyiht-ê-n[14]   *atelic (state)*
     nothing   1-PAST-want-by.mind-I.TH-LCAL
     [–SQA]   [+SQA]-[–ADD TO]
     'I wanted nothing'

These Plains Cree sentences are all atelic—in particular, states—regardless of the choice of [+SQA] (pro)nominals (the first person singular subject (indicated by the prefix *ni-*), and *ôma maskihkîs* 'this candy') or [–SQA] (pro)nominals (*maskihkîsa* 'candies,' *mâwiyak* 'nobody,' and *makkway* 'nothing') as argument nominals. This is confirmed by compatibility with a durative adverbial *pêyak-askiy* 'for a year,' which is required to precede any other constituents in the sentence for well-formedness.

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[13] In the negative context, the past-denoting prefix (or "preverb" in the Algonquianist terminology) can be either *ohci-* or *kî-*, the latter of which is also used in the non-negative context. I have given the *ohci* forms in the main text. However, (22c), for instance, alternates with (i).

(i)   mâwiyak kî-n(i)taw-êyiht-am(-w) ôma maskihkîs
      nobody PAST-want-by.mind-I.TH-3 this candy
      'nobody wanted this candy'

In the non-negative context, the prefix *ohci-* serves a variety of semantic functions that are performed by English *for* and *from*.

[14] An epenthetic consonant [t] emerges between the 1st person prefix *ni-* and the past-denoting prefix *ohci-* to break a potential vowel hiatus.

(23) a.   *pêyak-askiy* ni-kî-n(i)taw-êyiht-ê-n   ôma maskihkîs
           one-earth   1-PAST-want-by.mind-I.TH-LCAL this candy
           'I wanted this candy for a year'

      b.   *pêyak-askiy* ni-kî-n(i)taw-êyiht-ê-n   maskihkîs-a
           one-earth   1-PAST-want-by.mind-I.TH-LCAL candy-PL
           'I wanted candies for a year'

      c.   *pêyak-askiy* mâwiyak ohci-n(i)taw-êyiht-am(-w) ôma maskihkîs
           one-earth   nobody PAST-want-by.mind-I.TH-3 this candy
           'nobody wanted this candy for a year'

      d.   *pêyak-askiy* mâwiyak ohci-n(i)taw-êyiht-am(-w) maskihkîs-a
           one-earth   nobody PAST-want-by.mind-I.TH-3 candy-PL
           'nobody wanted candies for a year'

      e.   *pêyak-askiy* makkway ni-[t]ohci-n(i)taw-êyiht-ê-n
           one-earth   nothing 1-PAST-want-by.mind-I.TH-LCAL
           'I wanted nothing for a year'

Thus, both English and Plains Cree confirm that the *v*P eventuality is atelic, and ontologically a state, when v_1 eventuality is static/[−ADD TO], irrespective of the quantificational feature [±SQA] of argument expressions.

Next, consider sentences that contain a dynamic [+ADD TO] verb. The English sentences in (24) share the verb *wash*.

(24)   *English*

a.	I [+SQA]	washed **[+ADD TO]**	this dish [+SQA]	*telic (transition)*
b.	I [+SQA]	washed **[+ADD TO]**	dishes [−SQA]	*atelic (process)*
c.	Nobody [−SQA]	washed **[+ADD TO]**	this dish [+SQA]	*atelic (state)*
d.	Nobody [−SQA]	washed **[+ADD TO]**	dishes [−SQA]	*atelic (state)*
e.	I [+SQA]	washed **[+ADD TO]**	nothing [−SQA]	*atelic (state)*

Only the first sentence (24a), which has the [+SQA] subject *I* and the [+SQA] object *this dish*, is telic (i.e. transition). The situation comes to an end when the relevant dish is washed. All the other sentences in (24) are atelic. Among these atelic sentences, (24b) is a process, with the internal argument being a bare plural (i.e. *dishes*). The relevant dynamic situation could have continued forever because of the unbounded quantity of the internal argument. (24c)–(24e) are states, with either one of the two arguments being negatively quantified (i.e. *nobody* or *nothing*). These are washing situations that fail to take place; thus they are are states. That (24a) is telic is evidenced by the "iterative" and "prolonged" situation interpretations it receives with the durative adverbial *all day* (which is indicated with '#'); it cannot receive the single, non-prolonged situation interpretation that all the other atelic sentences in (24) allow for.

(25) a. #I washed this dish *all day*
      b. I washed dishes *all day*
      c. Nobody washed this dish *all day*
      d. Nobody washed dishes *all day*
      e. I washed nothing *all day*

For (25a) to be properly interpreted, it must be either that I washed the same dish referred to as *this dish* repeatedly all day long (i.e. the iterative situation interpretation) or that it took me all day long to wash the relevant dish (i.e. the prolonged situation interpretation). In other words, a little imagination external to the given linguistic expression is required to interpret the sentence. This is characteristic of a telic sentence occurring with a durative adverbial. No iterative or prolonged situation interpretation obtains with (25b)–(25e) because iteration or prolongation presupposes a telic, bounded situation, and each contains an atelic, unbounded sentence.

The same results obtain with Plains Cree. The dynamic, [+ADD TO] verb stem used in the sentences in (26) is *kisîpêkin* '*x* washes *y*.' The dynamic, [+ADD TO] status of this verb stem is confirmed by the absence of the past-denoting prefix *kî-* (or *ohci-* when in the negative context) in the verbal complexes, despite the past interpretation. (In fact, if *kî-* is present, the verbal complex is interpreted as in the pluperfect.)

(26) *Plains Cree*

a.	ni-kisîpêk-in-ê-n		ôma wiyâkan	*telic (transition)*
	1-wash-by.hand-I.TH-LCAL		this dish	
	[+SQA]-[+ADD TO]		[+SQA]	
	'I washed this dish'			

b.	ni-kisîpêk-in-ê-n		wiyâkan-a	*atelic (process)*
	1-wash-by.hand-I.TH-LCAL		dish-PL	
	[+SQA]-[+ADD TO]		[−SQA]	
	'I washed dishes'			

c.	mâwiyak	kisîpêk-in-am(-w)	ôma wiyâkan	*atelic (state)*
	nobody	wash-by.hand-I.TH-3	this dish	
	[−SQA]	[+ADD TO]	[+SQA]	
	'nobody washed this dish'			

d.	mâwiyak	kisîpêk-in-am(-w)	wiyâkan-a	*atelic (state)*
	nobody	wash-by.hand-I.TH-3	dish-PL	
	[−SQA]	[+ADD TO]	[−SQA]	
	'nobody washed dishes'			

e.	makkway	ni-kisîpêk-in-ê-n		*atelic (state)*
	nothing	1-wash-by.hand-I.TH-LCAL		
	[−SQA]	[+SQA]-[+ADD TO]		
	'I washed nothing'			

Only the first sentence is telic; all the other sentences are atelic. In fact, (26a) is the only example in which both the subject (i.e. first person singular pronominal argument) and the object nominal (i.e. *ôma wiyâkan* 'this dish') are [+SQA]. (26b) is a process due to the internal argument being a bare plural (i.e. *wiyâkana* 'dishes'). (26c)–(26e) are states because one of the two arguments is negatively quantified (i.e. *mâwiyak* 'nobody' or *makkway* 'nothing'). The durative adverbial test confirms this telic vs. atelic distinction. Containing the durative adverbial *kapê-kîsik* 'all day,' (27a) must be interpreted as either an iterative or prolonged situation, which is not the case with (27b)–(27e).

(27) a. *kapê-kîsik* ni-kisîpêk-in-ê-n ôma wiyâkan
        all-day   1-wash-by.hand-I.TH-LCAL this dish
        '#I washed this dish all day'

      b. *kapê-kîsik* ni-kisîpêk-in-ê-n wiyâkan-a
        all-day   1-wash-by.hand-I.TH-LCAL dish-PL
        'I washed dishes all day'

      c. *kapê-kîsik* mâwiyak kisîpêk-in-am(-w) ôma wiyâkan
        all-day   nobody wash-by.hand-I.TH-3 this dish
        'nobody washed this dish all day'

d.   *kapê-kîsik* mâwiyak kisîpêk-in-am(-w)   wiyâkan-a
           all-day   nobody   wash-by.hand-I.TH-3 dish-PL
           'nobody washed dishes all day'

e.   *kapê-kîsik* makkway ni-kisîpêk-in-ê-n
           all-day   nothing   1-wash-by.hand-I.TH-LCAL
           'I washed nothing all day'

On par with the English equivalent, (27a) means either that John washed the same dish repeatedly all day long (i.e. the iterative situation interpretation) or that John washed such a huge dish, for instance, that it took him all day long to finish doing so (i.e. the prolonged situation interpretation).

In sum, both English and Plains Cree confirm the validity of the eventuality composition illustrated in (19), repeated here as (28).

(28)   *eventuality composition (informal) à la Verkuyl 1993*

    a. v_1 eventuality   [−ADD TO] (static)   [+ADD TO] (dynamic)

    b. argument(s)   [±SQA]   ∃[−SQA] ∀[+SQA]

    c. vP eventuality   atelic   atelic   telic
                          ‖   ‖   ‖
    d. "ontological" eventuality state   state/process transition
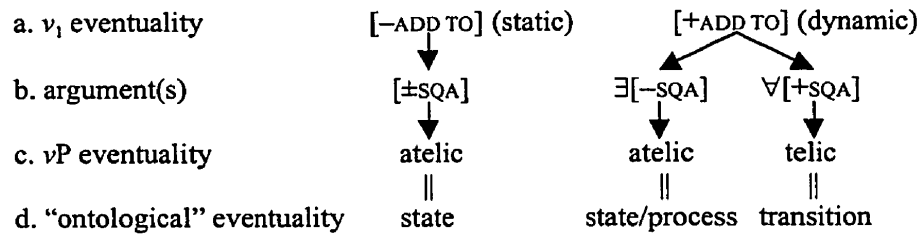
According to this view, dynamicity and telicity are the two eventuality dimensions that are syntactic, rather than lexical, in the sense that they participate in semantic composition interacting with the quantificational property of argument expressions in the syntax. Identification of temporality τ with the dynamicity feature [±ADD TO], therefore, establishes its status as a syntactic feature. In the vP structures under which the ZEH is embedded, the eventuality features, the dynamicity feature [±ADD TO] (i.e. temporality τ), and the quantificational feature [±SQA] are distributed in the following way:

(29)   *syntactic distribution of the eventuality features*

$$vP_2 \leftarrow \text{telic or atelic}$$

[±SQA]

$$v_2 \qquad vP_1$$

[±SQA]

$$v_1 \qquad \text{ROOT}$$

[±ADD TO] = τ
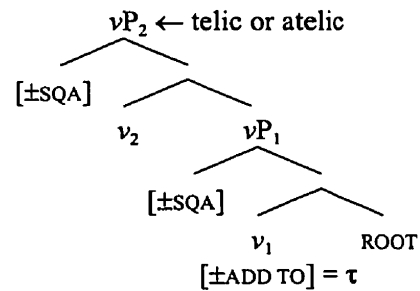
The quantificational feature [±SQA] occupies specifier positions because it is a property of argument expressions, and argument expressions are syntactic objects that occupy specifier positions in the vP structure. The dynamicity feature [±ADD TO] is temporality τ specified on v_1, the claim that has been morphologically motivated on the assumption that transitivity suffixes occupy v_1. However, there is no a priori reason that prevents transitivity suffixes from occupying the v_2 position, rather than the v_1 position. The aim of the next subsection is, therefore, to build an empirical argument that confirms my postulation of v_1 as the host of temporality τ.

2.2.2 The Position of τ

The ZEH claims that ROOT does not accommodate temporality τ, which is now identified as the dynamicity feature [±ADD TO]. But the hypothesis is silent about what syntactic object *is* the locus of temporality τ. In Chapter 1, I postulated temporality τ as a syntactic feature on v_1. The claim in §2.1 that it is transitivity suffixes that determine the dynamicity of a verb stem and the fact that the transitivity suffix is combined with the root to form a verb stem together suggest that temporality τ is hosted by the transitivity suffix as the syntactic object that occupies v_1. Now I will justify this conclusion by examining a subject-object asymmetry in "measuring out" a situation, the asymmetry that manifests itself in the *halfway* test (Tenny 1987, 1994).

In the ZEH-based approach, there are two potential loci of temporality τ in the double-layered vP structure I adopt, namely v_1 and v_2.

(30) a. *τ on* v_2

```
              vP₂
             /    \
            /      \
          v₂       vP₁
          {τ}     /    \
                 /      \
               v₁      ROOT
```

b. *τ on* v_1

```
              vP₂
             /    \
            /      \
          v₂       vP₁
                  /    \
                 /      \
               v₁      ROOT
               {τ}
```
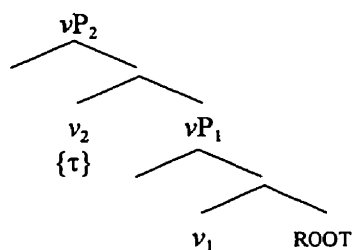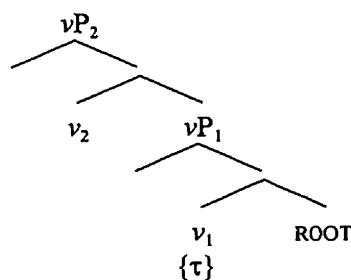
In these two alternatives, temporality τ enters into the local, specifier-head relation with a different argument expression. In the first alternative, temporality τ, localised on v_2, is in the specifier-head relation with the subject/external argument. In the second alternative, τ, localised on v_1, is in the specifier-head relation with the object/internal argument. Suppose an argument expression being in a local relationship with temporality τ implies that they interact with one another in an aspectual manner. If so, in the first alternative, it is the subject/external argument that is expected to interact with temporality τ. In the second alternative, it is the object/internal argument. The question is whether there is any phenomenon that points to such interaction. One such phenomenon is the *halfway* test of Tenny 1987, 1994, which is a manifestation of the "measuring-out" function served by the object/internal argument.

Dynamic (i.e. [+ADD TO]) verbs are those that convey a sense of progress, addition, or movement in a certain semantic domain. An argument expression interacting with this temporal property can be regarded as constituting a scale in terms of which the relevant progress, addition, or movement is measured. Tenny (1987, 1994) most clearly identifies this "measuring-out" function as a property of the object/internal argument. Tenny demonstrates this by means of the *halfway* test, which reveals an asymmetry between the internal and the external argument with respect to the measuring-out function (Tenny 1987:169).

(31)	a.	The lake froze *halfway*	*unaccusative*
	b.	The candle melted *halfway*	*unaccusative*

(32)	a.	*Martha danced *halfway*	*unergative*
	b.	*Thomas ate *halfway*	*unergative*

As per the Unaccusative Hypothesis (Perlmutter 1978, cf. Hall 1979), the sole argument of "unaccusative" verbs such as *freeze* and *melt* is the internal argument, whereas that of "unergative" verbs such as *dance* and *eat* is the external argument.[15] The use of the adverb *halfway* is felicitous with the unaccusative verbs (31), whereas it is not with these unergative verbs (32). According to Tenny (1987:170), the adverb *halfway* "explicity means covering half the distance on some sort of a scale." If so, the naturalness of the unaccusative sentences in (31) suggests the presence of such a scale. In contrast, the oddity of the unergative sentences in (32) is attributed to the absence of an appropriate scale against which the adverb *halfway* is to be interpreted.[16] In (31), the internal arguments *The lake* and *The candle* constitute an appropriate scale, serving their measuring-out function. The sentence *The lake froze halfway* amounts to saying that the half of the lake froze.[17] Likewise, *Half of the candle melted* can be an approximate paraphrase of the sentence *The candle melted halfway*. The awkwardness of the sentences in (32) correlates with the nonsense of *Half of Martha danced* and *Half of Thomas ate*. In other words, these external arguments fail to constitute an appropriate scale. A similar pair of examples that demonstrate the same contrast can be replicated in Plains Cree.

---

[15] Phenomena that are argued to derive from the asymmetry between the two sets of intransitive verbs with respect to the structural position of their sole argument that the Unaccusative Hypothesis advances are numerous. One such phenomenon is the possibility of the resultative interpretation of the italicised adjectives in (i).

(i) a. The ice froze *hard*   *unaccusative*
     b. The student ran *tired*   *unergative*

Occurring with the unaccusative verb *freeze*, the adjective *hard* in (ia) describes the resultant state of the ice arising from its freezing. In (ib), however, occurring with the unergative verb *run*, the adjective *tired* does not describe the resultant state of the student after running; the student was tired all through his running.

[16] To the extent that the unergative sentences are interpretable, the adverb *halfway* is operative on a scale supplied by an unexpressed internal argument. For instance, (32a) could be interpreted to mean Martha danced halfway through a (unidentified) waltz or over the (unidentified) stairs of a stage, predicting the well-formed status of (ia) and (ib).

(i) a. Martha danced *Swan Lake* halfway
     b. Martha danced off the stage halfway

See §3.2.3 for discussions pertaining to the implicit internal argument of unergative verbs.

[17] Matthew Ritchie (personal communication) informs me that (31a) has another (perhaps, more natural) reading that the lake was half-frozen, but half-liquid (i.e. slushy).

(33) a.   *âpihtaw* tihk-ipayi-w   maskwamiy   *unaccusative*
           halfway melt-INCH-3   ice
           'the ice melted halfway'

      b.   *âpihtaw* pîko-payi-n   wâpamon   *unaccusative*
           halfway break-INCH-0 mirror
           'the mirror broke halfway'

(34) a.   **âpihtaw* pim-ohtê-w Claudia   *unergative*
           halfway   along-walk-3 C.

      b.   **âpihtaw* nip-â-w   Ottilie   *unergative*
           halfway   sleep-INTR-3 O.

The adverbial expression (or "particle" in the Algonquianist terminology) *âpihtaw* 'halfway' is compatible with unaccusative sentences (33), whereas it is incompatible with unergative sentences (34). The nouns *maskwamiy* 'ice' and *wâpamon* 'mirror' each constitute a scale, giving rise to the approximate interpretations 'the half of the ice melted' and 'the half of the mirror broke' for (33a) and (33b), respectively. Approximation of this sort is not available with unergative sentences, as 'the half of Claudia walks (along)' (34a) and 'the half of Ottilie sleeps' (34b) are nonsensical.

In sum, the above contrast between the sole arguments of unaccusative and unergative verbs demonstrates that there is an asymmetry between the internal and the external argument in terms of the measuring-out function. The internal argument measures out the progress, addition, or movement described by the verb, whereas the external argument does not. Now, if the measuring-out argument must be in a local, specifier-head relation with the *v* that bears temporality τ (with [+ADD TO]), in order to serve its function properly, then the locus of temporality τ is v_1. This is because it is the internal argument that measures out a situation, and the *v* that enters into a specifier-head relation with the internal argument is v_1. In fact, in the formalisation adopted in Verkuyl 1993, [+ADD TO] constitutes a set of spatio-temporal indices i (borne by V^0 in his syntactic structure) that interacts with the quantificational property (i.e. [±SQA]) of the internal argument, not the external argument. Given these considerations, I conclude that Tenny's *halfway* test supports my designation of v_1, not v_2, as the host of temporality τ.

2.3 Why Other Eventuality Theories Are Inappropriate for Plains Cree

If the Zero Eventuality Hypothesis (ZEH), which is repeated here as (35), is on the right track, no temporality is grammatically relevant at the root level.

(35)   *The Zero Eventuality Hypothesis (ZEH)*
         A root (i.e. ROOT) is devoid of temporality.

It is only at the level of the stem—consisting of a root and a transitivity suffix—that temporality is fixed. This is because transitivity suffixes occupy v_1, and v_1 is the locus of temporality τ, identified as the dynamicity feature [±ADD TO] of Verkuyl 1972, 1993. This localisation of temporality τ accounts for verb stem paradigms such as (10), repeated here as (36) in a straightforward fashion.

(36)   *tahk* 'cold'

    a.   [tahk-*â*]-w   *static intransitive*
          cold-S.STAT-0   *-â* = [−ADD TO]
          'it is cold'

    b.   [tahk-*ipayi*]-w   *dynamic intransitive*
          cold-INCH-0   *-payi* = [+ADD TO]
          'it gets cold'

    c.   [tahk-*in*]-*am*(-w)   *dynamic transitive*
          cold-by.hand-I.TH-3   *-in* = [+ADD TO]
          's/he cools it by hand'

Despite the fact that these three verb stems contain the common root *tahk* 'cold,' the intransitive verb stem *tahkâ* '*x* (inanimate) is cold' is static, whereas the intransitive verb stem *tahkipayi* '*x* gets cold' and the transitive verb stem *tahkin* '*x* cools *y* by hand' are dynamic. This situation makes sense if the root does not contribute to temporality, as the ZEH claims, and if the intransitive suffix *-â* provides static [−ADD TO], whereas the inchoative suffix *-payi* and the transitive suffix *-in* 'by hand' provide dynamic [+ADD TO]. Notice that in this view, static and dynamic predicates exclude one another because [−ADD TO] and [+ADD TO] compete for the value of temporality τ on v_1. Thus, it is impossible for a static predicate to form part of a dynamic predicate, for instance. This correctly predicts that there is no morphological stacking of the type shown in (37).[18]

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[18] The situation is a little more complicated than the ungrammatical verbal complexes in (37) suggest. I will discuss this complexity in §2.3.5, the summary of this subsection.

(37) a. *[[tahk-*á*]-*payí*]-w
          cold-s.STAT-INCH-0

      b. *[[tahk-*á*]-*n*]-*am*(-w)
          cold- s.STAT-by.hand-I.TH-3

Bearing this prediction of the ZEH-based eventuality theory in mind, we turn out attention to other eventuality theories. It turns out that, assuming a transparent relationship between event structure and morphology, all existing eventuality theories but one incorrectly predict morphological stacking of this sort.

First, in §2.3.1, I examine "lexical-semantic" approaches represented by Dowty 1979 (also Chierchia and McConnell-Ginet 1990, Levin and Rappaport Hovav 1995, among others). Second, §2.3.2 evaluates "event structure" approaches represented by Pustejovsky 1991 (also Pustejovsky 1995 and van Hout 1996, among others). Third, in §2.3.3, syntactic approaches of Hale and Keyser 1993, McClure 1995, and Borer 1994 are investigated. It is revealed that among the eventuality theories to be scrutinised here, only Borer's (1994) syntactic approach is appropriate for Plains Cree. §2.3.4 examines the ZEH-based eventuality theory in the face of the data from O'odham (Uto-Aztecan) that apparently supports stacking theories of eventualities. The last section, §2.3.5, summarises the section by briefly discussing Cree-internal counterexamples to the anti-stacking theory of eventualities that I am proposing.[19]

2.3.1 Lexical-Semantic Approaches

Theories of eventualities whose mechanism is advanced by Dowty (1979), and is adapted by authors such as Chierchia and McConnell-Ginet (1990), Levin and Rappaport Hovav (1995), among others, are called "lexical-semantic" approaches here. These approaches are lexical-semantic because they represent eventualities as a property of a predicate—call them "predicate eventualities." Here, I examine only Dowty's (1979) model-theoretic representation of eventualities because in variants of Dowty 1979 the prediction about morphological stacking obtains.

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[19] Throughout the remaning part of this section, I retain the eventuality names the cited authors use. Only state is static, and every other eventuality is dynamic.

Dowty (1979) adopts Vendler's (1967) four eventualities—state, activity, achievement, and accomplishment—as predicate eventualities, and gives them Montagovian formal semantic interpretations. (38) contains the model-theoretic representations of the four eventualities (Dowty 1979:123–4):[20]

(38)　　*Dowty's (1979) model-theoretic representations of Vendler's (1967) four eventualities*

a.	*state*	$\pi_n (\alpha_1, ..., \alpha_n)$
b.	*activity*	$DO(\alpha_1, [\pi_n (\alpha_1, ..., \alpha_n)])$
c.	*achievement*	$BECOME[\pi_n (\alpha_1, ..., \alpha_n)]$
d.	*accomplishment*	$[[DO(\alpha_1, [\pi_n (\alpha_1, ..., \alpha_n)])]CAUSE[BECOME[\rho_m (\beta_1, ..., \beta_m)]]]$

First, the symbols used here need explanation: π and ρ represent state predicates; α and β are their arguments, respectively; subscripts m and n on π and ρ respectively stand for the cardinality of the argument(s) associated with them; DO, BECOME, and CAUSE are operators that take one or more than one eventuality and give rise to another. Second, the representation of each eventuality needs to be explained. State (e.g. *know*) is the eventuality that has the simplest lexical representation (38a). It comprises one state predicate with one or more than one argument. Activity (e.g. *sing*) consists of a DO operator, which relates an argument α_1 to a state predicate $\pi_n (\alpha_1, ..., \alpha_n)$ (38b). The argument α_1 of the DO operator is interpreted as agentive. Achievement (i.e. instantaneous transition/change of state, e.g. *break*) is the product of applying a BECOME operator to a state predicate $\pi_n (\alpha_1, ..., \alpha_n)$, the result of which is a change of state (38c). Accomplishment (i.e. time-taking transition/change of state, e.g. *build*) is the eventuality that has the most complex representation (38d). It comprises a CAUSE operator that relates an activity $DO(\alpha_1, [\pi_n (\alpha_1, ..., \alpha_n)])$ to an achievement $BECOME[\rho_m (\beta_1, ..., \beta_m)]$ as a causal relation: an activity brings about an achievement.

The fact that the representation of a state constitutes part of the representations of all the other three dynamic eventualities—call it "aspectual stacking"—implies that, ceteris paribus, Dowty's theory of eventualities should allow for morphological stacking in Plains Cree. For instance, the verbal complex (37a), which is repeated here as (39a), is expected to be well-formed as an achievement verbal complex, with *tahkâ* 'x is cold' as a state predicate and the inchoative suffix *-payi* as a realisation of the BECOME operator.

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[20] I abstract away from the representational ramifications of each eventuality type that Dowty (1979) argues for as its subtypes. These ramifications are not relevant to the ensuing arguments.

(39)   a.   *[[tahk-*â*]-*payi*]-w
              cold-S.STAT-INCH-0

       b.   [tahk-*ipayi*]-w   *dynamic intransitive (achievement)*
              cold-INCH-0
              'it gets cold'

Given this incorrect prediction, lexical-semantic approaches represented by Dowty 1979 are not appropriate to describe Plains Cree.

2.3.2 Event Structure Approaches

The mechanism of representing eventualities called "event structure" advanced by Pustejovsky (1991), adopted and developed by Pustejovsky (1995) and van Hout (1996), among others, is another mode of representing predicate eventualities. Event structure is a configurational representation that encodes the aspectual information of a predicate. In this subsection, I illustrate how three eventualities—state, process, and transition—are represented in terms of the event structure used in Pustejovsky 1991. It will be seen that event structure approaches also imply morphological stacking.

Pustejovsky (1991) entertains three eventualities—state, process, and transition—in harmony with Verkuyl 1993 and the ZEH. These three eventualities are informally defined in the following way (Pustejovsky 1991:56):

(40)   *definitions of state, process, and transition à la Pustejovsky 1991*

a.	*state:*	a single event, which is not evaluated to any other event
b.	*process:*	a sequence of events identifying the same semantic expression
c.	*transition:*	an event identifying a semantic expression, which is evaluated relative to its opposition

It is not entirely clear exactly what sort of entity is referred to by "event" in (40), but following these definitions, the three eventualities are represented as follows:

(41)   *event structures of state, process, and transition à la Pustejovsky 1991*

a.   *state*   e.g. *know, like, tall,...*

$$S$$
$$|$$
$$e$$

b.   *process*   e.g. *laugh, sing, wipe,...*

$$P$$
$$e_1........e_n$$
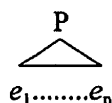
c.   *transition*   e.g. *break, build, clean,...*

$$T$$
$$E_1 \qquad \neg E_2$$
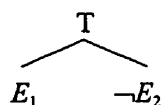
S, P, and T represent state, process, and transition, respectively. The symbol *e* used in (41a) and (41b) stands for "event" used in (40). The symbol E used in (41c) is a variable ranging over the three eventualities; E_1 and $\neg E_2$ form an opposition to one another. These event structure representations read in the following way: (41a) reads that a state exclusively consists of a single "event"; (41b) reads that a process exclusively consists of a sequence of "events" with e_{n-1} temporally preceding e_n; and (41c) reads that a transition exclusively consists of two eventualities E_1 and $\neg E_2$ with E_1 temporally preceding $\neg E_2$.

The transition event structure given in (41c) is rather schematic in that it does not specify what eventuality occupies E_1 and $\neg E_2$ positions, respectively. The actual event structure representation that Pustejovsky (1991) gives to transition verbs is (42), where E_1 is P and $\neg E_2$ is S.

(42)   *actual representation of transition à la Pustejovsky 1991*

$$T$$
$$P \qquad S$$
$$e_1........e_n \qquad e$$
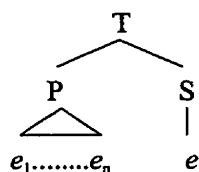
Thus, a transition is represented as exclusively consisting of a process and a state, with the former temporally preceding the latter.

The fact that a state is a constituent of a transition suggests morphological stacking. A species of transition is change of a state, which subsumes verb stems such as *tahkipayi* 'x gets cold' and *tahkin* 'x cools y by hand' discussed above. The representation in (42) permits the ill-formed morphological stacking illustrated in (43) and (44).

(43) a. *[[tahk-*â*]-*payi*]-w
    cold-s.STAT-INCH-0

  b. [tahk-*ipayi*]-w   *dynamic intransitive (transition)*
    cold-INCH-0
    'it gets cold'

(44) a. *[[tahk-*â*]-*n*]-*am*(-w)
    cold- s.STAT-by.hand-I.TH-3

  c. [tahk-*in*]-*am*(-w)   *dynamic transitive (transition)*
    cold-by.hand-I.TH-3
    's/he cools it by hand'

The static verb stem *tahkâ* 'x (inanimate) is cold' corresponds to S, with the inchoative suffix *-payi* and the transitive suffix *-in* 'by hand' arguably taken as P. The ungrammaticality of (43a) and (44a) demonstrates that Pustejovkyan event structure approaches fail to explain Plains Cree verbal morphology, once again, assuming the null hypothesis that event structure is mapped in a one-to-one fashion onto morphology.

2.3.3 Syntactic Approaches

Syntactic theories of eventualities are those that make use of syntactic structure to represent eventualities in one way or another. In this section, I examine three different syntactic systems of eventualities proposed by McClure (1995), Hale and Keyser (1993), and Borer (1994) in this order.[21] McClure 1995 and Hale and Keyser 1993 predict morphological stacking to occur, contrary to the Plains Cree situation. It turns out that Borer 1994 is the only syntactic approach that does not make such an incorrect prediction.

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[21] Hale and Keyser's (1993) primary concern is not eventuality, however.

2.3.3.1 McClure 1995

Like Dowty (1979), McClure (1995) adopts Vendler's (1967) four-way classification of eventualities and represents them in a model-theoretic fashion. The representations in (45) are adapted from McClure 1995:§§2.2–2.4.

(45)   *McClure's (1995) analysis of the four eventualities*

a.	*state*	s
b.	*achievement*	BECOME(s) = <s, s'> = c
c.	*activity*	DO(BECOME(s)) = DO(<s, s'>) = DO(c)
		= {<s_1, s_2>$_1$, <s_2, s_3>$_2$,...<s_i, s_{i+1}>$_i$,...}
d.	*accomplishment*	DO(BECOME(s)) = DO(<s, s'>) = DO(c)
		= {<s_1, s_2>$_1$, <s_2, s_3>$_2$,...<s_i, s_{i+1}>$_i$,...,<s_{n-1}, s_n>$_{n-1}$}

First, a state is defined as a particular (static) situation s in the world (45a). Second, an achievement is derived by applying the BECOME operator to a state s (45b). This operation (i.e. BECOME(s)) effects a pair of states (i.e. <s, s'>), whose final state s' is paired "with all of its possible initial states s." The outcome pair represents a change c. Third, an activity is derived by applying the DO operator to an achievement (45c). This operation (i.e. DO(BECOME(s)) = DO(<s, s'>) = DO(c)) maps an achievement (i.e. BECOME(s) = <s, s'> = c) into an open-ended sequence of achievements of the same type (i.e. {<s_1, s_2>$_1$, <s_2, s_3>$_2$,...<s_i, s_{i+1}>$_i$,...}) as the input achievement. Finally, an accomplishment (45d)—a special type of the activity eventuality—minimally differs from an activity in that the output sequence of achievements is bounded with the final achievement (i.e. <s_{n-1}, s_n>$_{n-1}$), which contains the spatio-temporal ending point s_n.

In the shift from the model-theoretic representations to the syntactic ones, McClure (1995) claims that the two operators DO and BECOME are syntactic heads, and project their own aspectual projections, AspP$_{outer}$ and AspP$_{inner}$, respectively.[22] (46) exhibits his aspectual projections.

---

[22] McClure's (1995:222) original presentation has AP$_{outer}$ and AP$_{inner}$, etc. for AspP$_{outer}$ and AspP$_{inner}$, etc.. I use the latter set for the sake of clarity.

(46)   *McClure's (1995) aspectual projections*

AspP$_{outer}$ ← *activity & accomplishment*

Asp$_{outer}$'

Asp$_{outer}$ AspP$_{inner}$ ← *achievement*

DO

Asp$_{inner}$'

Asp$_{inner}$ VP   ← *state*

BECOME   V'

V

s
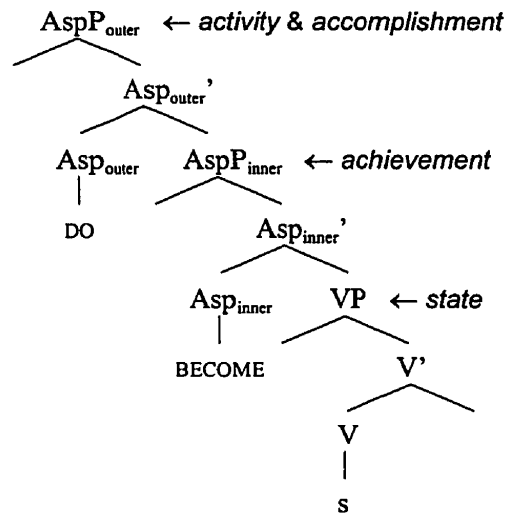
Activities and accomplishments project VP, AspP$_{inner}$, and AspP$_{outer}$. Achievements project VP and AspP$_{inner}$, but not AspP$_{outer}$. States project VP only; neither aspectual projection occurs with states. Notice, in McClure's (1995) syntactic approach, all the three dynamic eventualities—achievement, activity, and accomplishment—are built on a state as the primitive eventuality. Again, this implies morphological stacking such as (47a),

(47)   a.   *[[tahk-*â*]-*payî*]-w
              cold-s.STAT-INCH-0

        b.   [tahk-*ipayî*]-w   *dynamic intransitive (achievement)*
              cold-INCH-0
              'it gets cold'

provided that the static verb stem *tahkâ* '*x* (inanimate) is cold' is V (i.e. s), and the inchoative suffix *-payi* plays the role of the Asp$_{inner}$ head (i.e. BECOME operator) in (46). As is evident from the illicitness of (47a), the aspectual stacking illustrated in (46) fails to morphologically realise in Plains Cree, contrary to expectation. Accordingly, McClure's (1995) syntactic approach of eventualities does not straightforwardly describe Plains Cree verb stems.

2.3.3.2 Hale and Keyser 1993
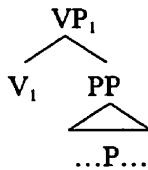
This subsection examines Hale and Keyser 1993 as an instance of syntactic approaches to eventualities. In this work, Hale and Keyser introduce the notion "l-syntax." L-syntax is a level of syntax in which the elementary semantics of a predicate takes shape through the interaction between the "notional type" of the involved lexical heads with the asymmetrical c-command relations holding between those heads. Thus, their primary concern is not with eventualities. Nevertheless, since the elementary semantics of a predicate must contain its aspectual information, it is worthwhile to see what Hale and Keyser's (1993) theory of l-syntax says about the morphological structure of Plains Cree predicates.

Hale and Keyser notionally identify the four lexical categories V, N, A, and P as "event (e)," "entity (n)," "state (s)," and "interrelation (r)," respectively. (48a)–(51a) contain four l-syntactic head-complement configurations which they discuss (Hale and Keyser 1993:68–74). What they claim is that one can translate the asymmetrical c-command relation holding between the two lexical heads in these head-complement configurations into an "implicational" relation holding between the notional types of the involved two heads. (48b)–(51b) each contain the implicational relation induced from the given head-complement configuration. In these (b) examples, the notional type on the left of the arrow "implicates" the notional type on its right.

(48)　　*V–VP complementation*

　　　a.　　　　　　　VP_2
　　　　　　　　　　／＼
　　　　　　　　V_2　　VP_1
　　　　　　　　　　　　△
　　　　　　　　　　　...V_1...

　　　b.　　　　$e_2 \rightarrow e_1$　　　*causal relation*

(49)　　*V–PP complementation*

　　　a.　　　　　　　VP_1
　　　　　　　　　　／＼
　　　　　　　　V_1　　PP
　　　　　　　　　　　　△
　　　　　　　　　　　...P...

　　　b.　　　　$e \rightarrow r$　　　*change (transition)*

(50)   *V–AP complementation*

a.

```
          VP₁
         /  \
        V₁   AP
            /△\
           ...A...
```
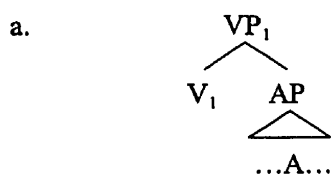
b. $e \rightarrow s$ *change (transition)*

(51)   *V–NP complementation*

a.

```
          VP₁
         /  \
        V₁   NP
            /△\
           ...N...
```
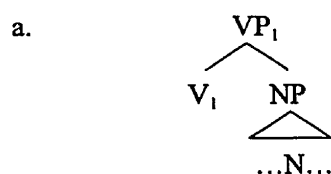
b. $e \rightarrow n$ *creation, production, realisation, etc. (process)*

In (48a), where a verb takes a VP projection as its complement, the implicational relation is $e_2 \rightarrow e_1$ (48b), i.e. an event implicates another event. This is equivalent, according to Hale and Keyser, to a causal relation. (49a) shows a case where a verb takes a PP as its complement, yielding the implication relation $e \rightarrow r$ (49b). This reads that an event implicates an interrelation; thus, a change (or transition) relation. Another change relation is obtained in (50a), where AP is complemented to a verb. This time, it is $e \rightarrow s$ (50b). Finally, (51a) represents complementation of an NP to a verb. The interpretation of this configuration is the implicational relation $e \rightarrow n$ (51b), which reads an event implicating an entity, i.e. creation, production, or realisation, as Hale and Keyser claim.

Hale and Keyser (1993) argue that the adjective heads *clear* and *thin* undergo movement to V_1 in (50a) to form the intransitive change or achievement verbs *clear* and *thin* as in (52), for instance.

(52)   a.   The sky cleared
        b.   The gravy thinned

This means that a state predicate constitutes part of intransitive transition (i.e. achievement) predicates, i.e. aspectual stacking. Aspectual stacking of this sort predicts the well-formed status of the now familiar morphological stacking example (53a), which is illicit.

(53) a. *[[tahk-*â*]-*payi*]-w
          cold-S.STAT-INCH-0

      b. [tahk-*ipayi*]-w   *dynamic intransitive (achievement)*
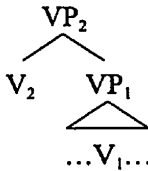   cold-INCH-0
          'it gets cold'

Therefore, Plains Cree verb stem morphology does not fit well with Hale and Keyser's (1993) l-syntactic framework.

2.3.3.3 Borer 1994

Borer 1994 is yet another syntactic approach to eventualities. It may be considered a predecessor of the ZEH framework in the sense that both assign no eventuality to the syntactic object at the bottom of the structure, V for Borer (1994) and ROOT for the ZEH-based approach. In Borer 1994, eventualities are determined by the two aspectual projections, $AspP_{OR}$ and $AspP_{EM}$.

(54)   *Borer's (1994) aspectual projections*
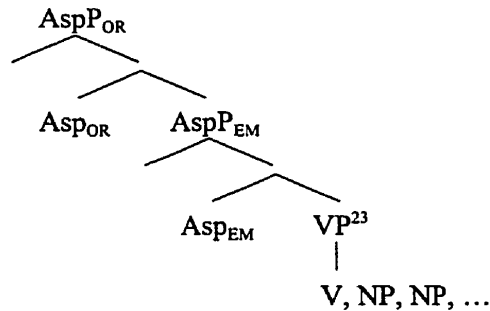
The subscripts OR and EM abbreviate the "originator" and the "event measurement." On the one hand, the notion of originator is intended to cover the semantic domain that is argued to be covered by Van Valin's (1990) "ACTOR" or Dowty's (1991) "PROTO-AGENT." If Asp_{OR} is activated (i.e. [+OR]), an argument moves to the specifier of Asp_{OR} to be interpreted as originator, whereas if Asp_{OR} is not activated (i.e. [–OR]), no argument moves to this specifier, and thus there is no originator. On the other hand, by the notion of event measurement, more relevant in the present context, Borer tries to capture the

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[23] The VP structure in (54) is flat, Borer (1994:27–8) argues, because configurationality within VP is necessary just in case the external vs. internal distinction is made in that projection. In her system, the relevant distinction is made

"measuring-out" function that Tenny (1987, 1994) associates with the internal argument. Along with Verkuyl (1972, 1993), among others, Borer (1994) acknowledges the telic vs. atelic distinction as the only eventuality that is compositionally attained at the level of sentence or vP in the ZEH framework. Moreover, Borer attributes the telicity distinction solely to the status of the aspectual head Asp_{EM}, having the quantificational effects of the argument expressions on telicity echo in this aspectual head.[24] The sentence is telic if the event measurement head Asp_{EM} is activated (i.e. [+EM]) and attracts an argument that measures the event. The sentence is atelic if this head is not activated (i.e. [–EM]) and attracts no argument. With [+EM] and [–EM] complementary to one another, no aspectual stacking is expected. Thus, if transitivity suffixes in Plains Cree are postulated as a realisation of Asp_{EM}, which seems reasonable, then no morphological stacking is predicted, in contrast to all the other eventuality theories examined above. This is an important trait of Borer's (1994) eventuality theory shared with the ZEH-based eventuality theory.

There is a crucial difference between the two proposals, however. The difference is not aspectual, though. Rather, it lies in whether the syntactic object at the bottom of the structure is hypothesised to introduce a set of arguments. For Borer (1994), the answer to this question is positive. In (54), V is postulated as a syntactic object that introduces a certain appropriate number of arguments. The vP structure that the ZEH implements gives a negative answer; it is each v that projects one (and only one) argument expression. I put an NP in each of the two specifier positions in (55) for the sake of comparison with (54).[25]

(55)

```
           vP₂
          /   \
        NP      \
               v₂   vP₁
                   /   \
                 NP      \
                        v₁   ROOT
            [±ADD TO] = {τ}
```

---
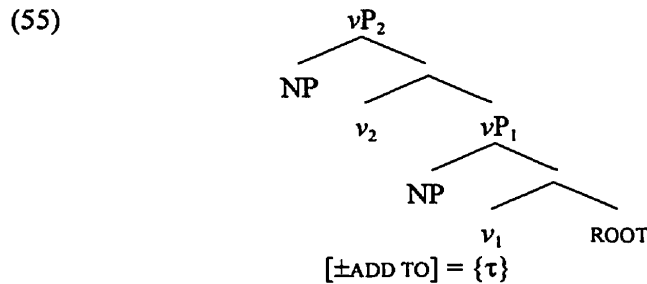
in terms of the specifier of the aspectual head to which the argument (first) moves. If it moves to Spec, Asp_{EM}, it is the internal argument, whereas it moves to Spec, Asp_{OR}, it is the external argument.

[24] These details are put aside here.

[25] Despite this difference, whether any empirical differences will emerge between the two syntactic analyses is uncertain. This is because in Borer 1994, every argument will evacuate VP in one way or another as the derivation proceeds; no argument remains within VP.

Thus, Borer 1994 and the present proposal based on the ZEH differ with respect to the argument-taking property of V and ROOT, respectively, but both correctly predict that there is no morphological stacking in Plains Cree verb stems.

2.3.4 Facing a Case for Aspectual/Morphological Stacking

Plains Cree morphology lacks aspectual stacking. This is what is predicted by the ZEH-based theory of eventualities. Cross-linguistically, however, it is not difficult to find languages whose morphology displays aspectual stacking. For instance, O'odham (Uto-Aztecan) is such a language. The illustrating examples in (56) are adapted from Hale and Keyser 1998:20.

(56)   *O'odham predicate paradigm*

	adjective '*x* is α'	inchoative '*x* becomes α'	causative '*y* makes *x* α'
a. 'red'	(s-)wegï	weg-*i*	weg-*i*-(*ji*)*d*
b. 'soft'	(s-)moik	moik-*a*	moik-*a*-(*ji*)*d*
c. 'yellow'	(s-)'oam	'oam-*a*	'oam-*a*-(*ji*)*d*

The adjectives (or states) are morphologically unmarked, consisting of one morpheme.[26] The inchoatives (or achievements) are composed of the corresponding adjective and the inchoative suffix -*i* or -*a*. The causatives (or activities/accomplishments) are composed of the corresponding inchoative and the causative suffix -(*ji*)*d*. The morphological shapes of the above O'odham predicates are straightforwardly captured, for instance, by McClure's 1995 theory of eventualities (see §2.3.3.1), which makes use of aspectual stacking, and thus predicts morphological stacking. To illustrate, in McClure's syntactic terms, the adjective *(s-)moik* '*x* is soft,' the inchoative *moika* '*x* becomes soft,' and *moika(ji)d* '*y* makes *x* soft' from the second row (56b) can be represented in the following way:

---

[26] The prefixal *s-* is a marker of "intensity", a grammatical category of the language which "applies especially in the case of stative verbs" (Mathiot n.d.:65).

(57) a. *(s)moik*   'x is soft'

```
        VP ← state
        ╱  ╲
            V'
          ╱  ╲
        V
        │
      moik = s
```

b. *moika*   'x becomes soft'

```
      AspP_inner ← achievement
      ╱   ╲
          Asp_inner'
          ╱    ╲
     Asp_inner   VP ← state
        │       ╱  ╲
  BECOME = -a      V'
                 ╱   ╲
                V
                │
              moik = s
```

c. *moika(ji)d*   'y makes x soft'

```
      AspP_outer ← activity & accomplishment
      ╱    ╲
           Asp_outer'
          ╱    ╲
    Asp_outer   AspP_inner ← achievement
       │         ╱   ╲
  DO = -(ji)d        Asp_inner'
                    ╱    ╲
              Asp_inner    VP ← state
                 │        ╱  ╲
          BECOME = -a        V'
                           ╱   ╲
                          V
                          │
                        moik = s
```
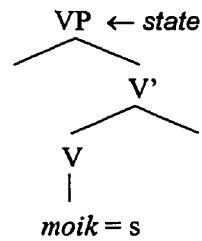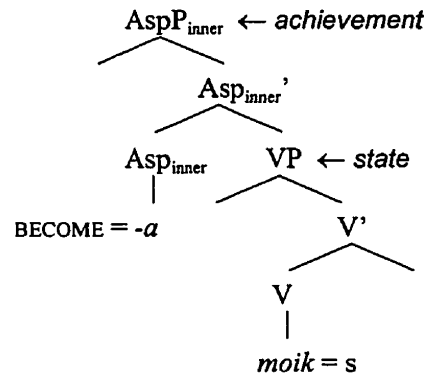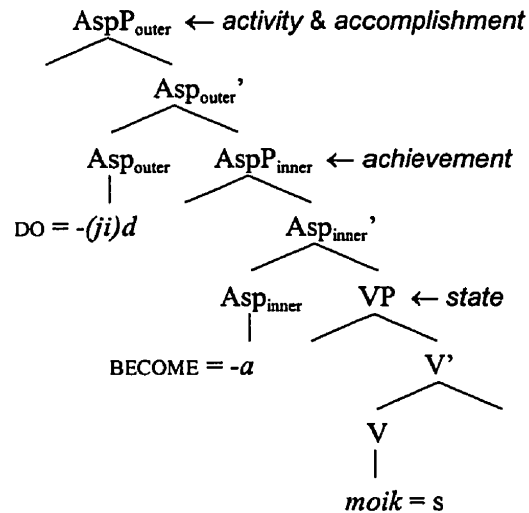
The adjectival root *moik* 'x is soft' is a state, which heads a VP (57a). (I abstract away from the categorial mismatch.) In (57b), the inchoative suffix *-a* is identified as the BECOME operator, whose syntactic realisation is as Asp_{inner}. Taking the static VP as its complement, the aspectual head projects

$AspP_{inner}$, giving rise to the inchoative *moika* 'x becomes soft.' In (57c), the causative *moika(ji)d* 'y makes x soft' is described as resulting from complementation of the inchoative $AspP_{inner}$ to the causative suffix *-(ji)d*, which is the DO operator semantically and the Asp_{outer} head syntactically.[27] The surface morpheme orders are considered to obtain after successive movement (and left-adjunction) of the syntactic heads involved in these predicates, cf. §3.1.2. In short, in terms of morphological stacking, O'odham predicates lend support to theories of eventuality that resort to aspectual stacking, such as that of McClure 1995.

However, this is not a necessary conclusion. The three vP structures in (58) represent the same set of three predicates—namely the adjective *(s-)moik* 'x is soft,' the inchoative *moika* 'x becomes soft,' and *moika(ji)d* 'y makes x soft'—in terms of the ZEH-based eventuality theory.

(58)   a.   *(s)moik*   'x is soft'

$$[-\text{ADD TO}] = \{\tau\}$$

b.   *moika*   'x becomes soft'

$$[+\text{ADD TO}] = \{\tau\}$$

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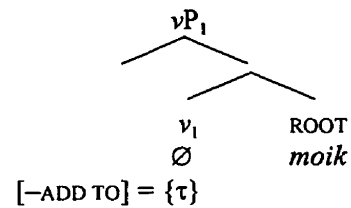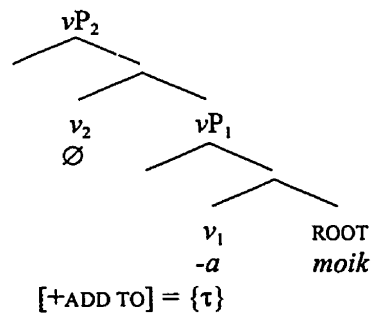
[27] The surface morpheme orders obtain after successive movement (and left-adjunction) of the syntactic heads involved in these predicates.

c.   *moika(ji)d*   'y makes x soft'

```
                vP₂
              /     \
            /    \
          v₂      vP₁
        -(ji)d   /   \
               /   \
             v₁      ROOT
             -a      moik
      [+ADD TO] = {τ}
```
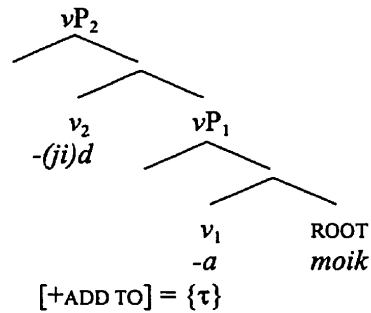
The root *moik* is postulated as ROOT. That is, unlike an analysis such as that of McClure 1995, the root here is regarded as lacking an inherent eventuality: it provides only conceptual content. In the ZEH-based eventuality theory, it is v_1 that introduces the temporal property of a predicate. The single-layered vP in (58a) represents the adjective *(s-)moik* 'x is soft.' The vP is headed by phonologically-null v_1, whose temporality is static (i.e. [–ADD TO]). On the other hand, in the double-layered vP structures in (58b) and (58c), v_1 is the inchoative suffix *-a*, which is dynamic (i.e. [+ADD TO]). In the representation of the inchoative *moika* 'x becomes soft' (58b), v_2 is phonologically null, whereas in the representation of the causative *moika(ji)d* 'y makes x soft' (58c), it is the causative suffix *-(ji)d*. Given these three vP structures, one can argue that it is the phonological nullness of [–ADD TO] v_1 in (58a) and of v_2 in (58b) that gives rise to the effect of apparent morphological stacking.

In sum, taking O'odham as an example, this subsection has demonstrated that stacking morphology does not necessarily invalidate non-stacking theories of eventualities such as the ZEH-based eventuality theory. The O'odham paradigm, however, is only one of the (potentially numerous) possible patterns of morphological stacking. Whether all remaining stacking patterns fit with the ZEH-based theory of eventualities remain to be seen. Yet, a prediction is in order with regard to the morphology of v_1, the carrier of temporality τ (i.e. [±ADD TO]). Given the grouping of inchoatives and causatives as dynamic (i.e. [+ADD TO]), excluding states as static (i.e. [–ADD TO]), it is predicted that a common v_1 morphology may be used for inchoatives and causatives, excluding states, but not either for states and inchoatives, excluding causatives, nor for states and causatives, excluding inchoatives. Further cross-linguistic research on stacking of aspectual affixes is necessary in order to evaluate these predictions.

2.3.5 Summary

This section has seen why most theories of eventualities have trouble describing Plains Cree: they postulate a state as a/the basic, primitive eventuality and build other eventualities on it. Aspectual stacking of this sort implies morphological stacking (and vice versa), which, however, is not the norm in Plains Cree. (59) and (60) repeat (43) and (44), respectively.

(59) a.   *[[tahk-$\hat{a}$]-***payi***]-w
              cold-S.STAT-INCH-0

      b.   [tahk-***ipayi***]-w   *dynamic intransitive (transition)*
              cold-INCH-0
              'it gets cold'

(60) a.   *[[tahk-$\hat{a}$]-***n***]-*am*(-w)
              cold- S.STAT-by.hand-I.TH-3

      c.   [tahk-***in***]-*am*(-w)   *dynamic transitive (transition)*
              cold-by.hand-I.TH-3
              's/he cools it by hand'

The absence of morphological stacking is predicted in the ZEH-based theory of eventualities, since eventuality information is encoded on v_1 as a static vs. dynamic contrast, rather than on a root. This precludes the possibility of a dynamic predicate containing a static predicate (and vice versa).

A further challenge to the ZEH-based theory of eventualities is found Cree-internally. Although stacking morphology is not the norm, it is not entirely unattested.[28] Consider the examples in (61) and (62).

---

[28] On one hand, it is not always the case that a stacking form is available. On the other hand, it is occasionally the case that a non-stacking form is unacceptable (ic).

(i) a. [âhko-***si***]-w
         sick-STAT-3
         's/he is sick'
    b. [[âhko-***si***]-***payi***]-w
         sick-STAT-INCH-3
         's/he (suddenly) becomes sick'
    c. *[âhko-***payi***]-w
         sick-INCH-3

The ill-formed status of (ic), whose intended meaning is that of (ib), may be attributable to the observation that it is only the stem *âhkosi* that conveys the notion of sickness. That is, it is inappropriate to gloss the root *âhkw* as 'sick.' The root rather conveys a conceptual content that approximates 'acute sensation,' according to Chris Wolfart (personal communication). However, this fails to explain why (ic) is not well-formed in some other meaning, whatever it would be.

(61) *kanât* 'pure, clean'

    a. [kanât-*an*](-w)   *static intransitive*
        clean-STAT-0   *(state)*
        'it is clean'

    b. [[kanât-*an*]-*payi*]-w[29]   *dynamic intransitive*
        clean-STAT-INCH-0   *(achievement)*
        'it becomes clean'

    c. [kanâc-*ipayi*]-w   *dynamic intransitive*
        clean-INCH-0   *(achievement)*
        'it becomes clean'

(62) *maskaw* 'strong'

    a. [maskaw-*isi*]-w   *static intransitive*
        strong-STAT-3   *(state)*
        's/he is strong or physically powerful'

    b. [[maskaw-*isi*]-*h*]-ê-w   *dynamic transitive*
        strong-STAT-TRAN-A.TH-3   *(accomplishment)*
        's/he makes her/him strong'

With the common root *kanât* 'pure, clean,' the stacking form *kanâtanipayi* 'x (inanimate) becomes clean' (61b) coexists with the non-stacking form *kanâcipayi* 'x (inanimate) becomes clean' in (61c). With the root *maskaw* 'strong,' Waugh 1998:74 contains only the stacking form *maskawisih* 'y makes x strong' (62b).[30] It is possible to maintain the ZEH-based eventuality theory by claiming that stacking forms such as (61b) and (62b) are in fact biclausal, unlike non-stacking forms such as (61c), which are monoclausal. Rather than elaborating on this claim now, I will leave these stacking examples as a problem for the ZEH-based eventuality to be resolved by future work.

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[29] Chris Wolfart (personal communication) informs me that this form is not attested in text materials.

[30] Whether the causative form without the state suffix -*isi*, as in (i), is also available needs to be checked.

(i) [maskaw-*ih*]-ê-w
    strong-TRAN-A.TH-3
    's/he makes her/him strong'

In (62b), neutralisation of morphological animacy takes place to the internal argument *x*; *x* is not necessarily animate, although -*isi* identifies the animate internal argument elsewhere.

2.4 Dynamic Intransitives Are Structurally Transitive

This section makes a syntactic proposal about intransitive predicates based on dynamicity. In particular, I propose that dynamic and static intransitives have two different syntactic structures: dynamic intransitives have a double-layered vP structure (63a), whereas static intransitives have a single-layered vP structure (63b).

(63)   a.   *dynamic intransitives*

$$v\mathrm{P}_2$$
$$v_2 \quad v\mathrm{P}_1$$
$$v_1 \qquad \text{ROOT}$$
$$[+\text{ADD TO}] = \{\tau\}$$
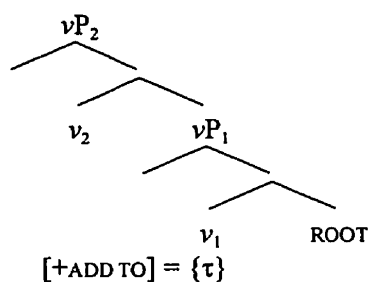
b.   *static intransitives*

$$v\mathrm{P}_1$$
$$v_1 \qquad \text{ROOT}$$
$$[-\text{ADD TO}] = \{\tau\}$$
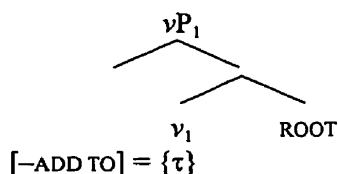
Assigned a double-layered vP structure, dynamic intransitives, which subsume both unergatives (e.g. *run, dance, sing*) and inchoatives or dynamic unaccusatives (e.g. (intransitive) *break, melt, close*), are structurally analysed as transitives. In the following, I will briefly explain why I assign a double-layered vP structure to dynamic intransitives.

Recall from §2.2.2 that the internal argument measures out a situation (Tenny 1987, 1994). In order for a situation to be measured out, it has to be dynamic (i.e. [+ADD TO]), not static (i.e. [−ADD TO]). This must be so because by its very nature the measuring-out function presupposes a situation that implies progress, addition, or movement in one (literal or figurative) form or another. Thus, measuring out presupposes dynamism. A dynamic situation, unlike a static situation, requires the existence of what I call an "energy source" that holds it true. Comrie (1976) describes the distinction between static and dynamic situations in the following way (Comrie 1976:49):

> With a state, unless something happens to change the state, then the state will continue [...]. With a dynamic situation, on the other hand, the situation will only continue if it is continually subject to a new input of energy [...] if John stops putting any efforts into running, he will come to a stop, and if the oscilloscope is cut off from its source of power it will no longer emit sound.

That is, while static situations do not require an energy source in order to continue to be true, dynamic situations do require an energy source. In Comrie 1976, the presence of an energy source essential to dynamic situations is an ontological matter. Here, I take the presence of the energy source in a dynamic situation linguistically, rather than ontologically. In particular, I propose, without discussion, that the argument expression that occupies the external argument position is interpreted as the energy source in that vP structure. Now, if we define the external argument position as the specifier position of the topmost vP, vP$_n$, where n >1, then it follows that in order to have the energy source argument, the structure must be minimally projected up to vP$_2$. Since a dynamic situation needs an energy source, it must be represented (at least) by means of a double-layered vP structure (63a), regardless of the predicate's surface intransitivity. In contrast, since a static situation does not need an energy source, a single-layered vP structure (63b) is necessary and sufficient if the predicate is intransitive.

That a dynamic predicate requires a double-layered vP structure amounts to saying that v_1 with [+ADD TO] as the value of temporality τ requires or selects v_2. The direction of selection is upward in this case. However, selection as practiced in the principles-and-parameters approach is a downward relation. For instance, the verb *wonder* selects an interrogative complementiser, not the other way around. For the moment, I will not go into the issue any further, leaving it as a problem as is.[31]

In sum, according to the proposal of this section, Plains Cree unergative and dynamic unaccusative verbal complexes such as in (64) and (65) respectively are analysed by means of a double-layered vP structure, despite their surface intransitivity.

(64)   a.   pim-ohtê-w   *unergative*
                along-walk-3
                's/he is walking'

        b.   nip-â-w   *unergative*
                sleep-INTR-3
                's/he is sleeping'

---

[31] Perhaps, the notion of "extended projections" (Grimshaw 1991) may cast light onto the issue.

(65) a. tihk-ipayi-w   *dynamic unaccusative*
          melt-INCH-0/3
          'it melted (suddenly)'

      b. pîko-payi-n   *dynamic unaccusative*
          break-INCH-0
          'it broke'

In §§3.2.3 and 3.2.4, I propose two different double-layered *v*P structures for these two verb types that differ in where the sole argument expression originates and how the surface intransitivity is attained. These two sets of dynamic intransitive verbs are treated differently from static intransitive or unaccusative verbs such as those in (66), which will be analysed by means of a single-layered *v*P structure.[32]

(66) a. kanât-an(-w)   *static unaccusative*
          clean-STAT-0
          'it is clean'

      b. kino-si-w   *static unaccusative*
          tall-STAT-3
          's/he is tall'

Here, the syntactic structure of a predicate matches its surface intransitivity. Thus, there is no further operation invoked, unlike unergatives and dynamic unaccusatives. In §3.2, Iwill discusses the *v*P structures of different verb types in Plains Cree, along with how the involved morphemes are distributed over those *v*P structures.

2.5 Interim Conclusion

This chapter singles out a property of the *v*P structures I am proposing; I call this property the Zero Eventuality Hypothesis (ZEH), repeated here as (67).

(67) *The Zero Eventuality Hypothesis (ZEH)*
      A root (i.e. ROOT) is devoid of temporality.

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[32] Gerdts (1991) argues for a split of Halkomelem (Coastal Salish) unaccusatives into those that denote a process and those that denote a state, similar to the split postulated here. According to Gerdts, process-type (or dynamic) unaccusatives are amenable to desiderative formation, but not to causative formation, whereas state-type (or static)

First, I have demonstrated that Plains Cree verbal morphology lends support to the ZEH.

Second, I have proposed an eventuality theory based on the ZEH and on the vP structures, where temporality τ resides on v_1, a syntactic feature identified with Verkuyl's (1972, 1993) dynamicity feature [±ADD TO].

(68)

```
              vP₂
            ╱     ╲
          ╱    ╲
        v₂      vP₁
              ╱    ╲
            ╱   ╲
           v₁      ROOT
    [±ADD TO] = {τ}
```
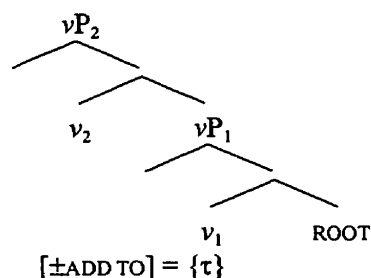
I have also shown that the ZEH-based eventuality theory differs from most other eventuality theories in that it does not postulate 'state' as a primitive eventuality on the basis of which other dynamic eventualities are constructed. Plains Cree verbal morphology supports this claim as well. To the extent that the proposed eventuality theory is on the right track, there is no such entity as primitive eventuality in the above sense; even a state is derived from combination of ROOT and v_1 with static [−ADD TO]. Conflating morphology masks this combination, and makes state predicates appear to form a primitive eventuality in many other languages.

Finally, I have introduced a structural distinction between dynamic and static intransitive predicates. At present, this is stipulative. I propose that dynamic intransitives—unergatives and dynamic unaccusatives—are assigned a double-layered vP structure, on par with transitives. It will be demonstrated in later chapters that this is the optimal hypothesis for Plains Cree unergatives and dynamic unaccusatives, with an additional mechanism introduced to attain the surface intransitivity of each type of dynamic intransitive.

The next chapter turns our attention to mapping morphemes onto vP structures of different verb types in Plains Cree (some of which are aspectually motivated). This paves the way for Chapters 4 and

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unaccusatives are amenable to causative formation, but not to desiderative formation. It remains an open question whether the structural distinction proposed here can capture this contrast in Halkomelem.

5, where phenomena that lend support to the syntactic nature of Plains Cree verbal complexes are examined.

2.6 Eventualities Which Are Irrelevant to Eventuality Composition

In the ZEH-based theory of eventualities, there is only one eventuality opposition that enters into eventuality composition as a property of a predicate, namely dynamic/[+ADD TO] and static/[−ADD TO]. This is temporality τ, a syntactic feature on v_1. [+ADD TO], interacting with the quantificational property of argument expressions (i.e. [±SQA]), giving rise to the telic vs. atelic opposition at the level of vP. [−ADD TO], failing to interact with [±SQA], yields an atelic vP eventuality. Ontologically, atelic vP eventualities are classified into the two subclasses in terms of dynamicity, and the three-way eventuality distinction emerges: state (static atelic), process (dynamic atelic), and transition (dynamic telic). This trichotomy of ontological eventualities can be traced back to Kenny 1963, and is adopted by authors such as Mourelatos (1981), and Pustejovsky (1991, 1995), among others (see (69a) below). This rather impoverished set of eventualities exhausts the input (dynamic and static) and the output (either telic and atelic or state, process, and transition) of eventuality composition, a compositional operation amenable to syntax.

If this view is correct, theories of eventualities that postulate four or more than four eventualities take into consideration one or more than one eventuality dimension irrelevant to compositional semantics. For instance, Vendler (1967), an advocate of the famous quadrichotomy of eventualies, divides what we call transitions into achievements (instantaneous) and accomplishments (non-instantaneous) (69b). Smith (1991) proposes a five-way distinction of eventualities by separating "semelfactives" from both processes and achievements (69c). Further, Carlson (1981) posits an eventuality class called "dynamic," which seems to be an aspectual hybrid of state and process (69d).

(69)   a.   *Kenny 1963*   state
                               process (i.e. his "activity")
                               transition (i.e. his "performance")

       b.   *Vendler 1967*   state
                               process (i.e. his "activity")
                               accomplishment
                               achievement

c.	*Smith 1991*	state
		process (i.e. her "activity")
		accomplishment
		achievement
		semelfactive

d.	*Carlson 1981*	state
		dynamic
		process (i.e. his "activity")
		accomplishment
		achievement
		momentaneous (i.e. more or less "semelfactive")

The goal of this appendix is to demonstrate that the dimensions which constitute these additional distinctions are irrelevant to eventuality composition, lying outside the realm of compositional semantics.

2.6.1 Achievement

Achievements and accomplishments are both telic (i.e. transitions), but they differ in that the former is instantaneous, whereas the latter is time-taking. Proposals such as Vendler 1967 make this distinction in classifying eventualities. The difference between the two eventualities is observable when they occur with so-called "frame" adverbials such as *in five minutes*.

(70)	a.	Mary walked home in five minutes	*accomplishment*
	b.	Mary reached the hotel in five minutes	*achievement*

On the one hand, in (70a), Mary's walking towards her home continues during the five-minute period; the temporal length of Mary's walking is coextensive with the five minutes. Let us call this interpretation the "coextensive" interpretation. On the other hand, in (70b), Mary's reaching the hotel happens only at the end of the interval that the frame adverbial *in five minutes* designates. This is an instance of the "ingressive" interpretation of the frame adverbial (Smith 1991:71).

Verkuyl argues for the irrelevance of the achievement vs. accomplishment distinction to event composition by means of the following sets of sentences (Verkuyl 1993:47):[33]

(71)		*processes*	*accomplishments*
	a.	She ate *sandwiches*	She ate *a sandwich*
	b.	She wrote *at the letter*	She wrote *a letter*
	c.	She ate *from the cheese*	She ate *the cheese*

(72)		*states*	*accomplishments*
	a.	She ate *no sandwiches*	She ate *a sandwich*
	b.	She wrote to *nobody*	She wrote *a letter*

(73)		*states*	*processes*
	a.	She ate *no sandwiches*	She ate *sandwiches*
	b.	She wrote to *nobody*	She wrote *to her mother*

The verbs used throughout the paradigms are *eat* and *write*, which are both dynamic (i.e. [+ADD TO]). What these paradigms demonstrate is that even if the verb is constant, depending on the quantificational property of the internal argument, a *v*P eventuality opposition arises between state, process, and accomplishment. First, the paradigm (71) demonstates that whether the internal argument identifies a bounded set (i.e. [+SQA]) or an unbounded (but non-empty) set (i.e. [−SQA]) gives rise to the activity vs. accomplishment *v*P eventuality distinction. The internal arguments of the accomplishment sentences (in the righthand column), *a sandwich, a letter*, and *the cheese* identify a bounded set. In contrast, the internal arguments of the process sentences (in the lefthand column), *sandwiches, at the letter*, and *from the cheese* identify a nonempty, unbounded set.[34] Second, the lefthand column of the paradigm (72) shows that if the quantity of the internal argument is null (i.e. an empty set) as in *no sandwiches* and *(to) nobody*, then the *v*P eventuality is atelic, specifically a state. This is in opposition to what the righthand column of the paradigm shows, where the quantity of the internal arguments *a sandwich* and *a letter* is delimited (i.e. a bounded set), contributing to a telic, accomplishment *v*P eventuality. Finally, the paradigm (73) demonstrates that the state vs. process *v*P eventuality opposition obtains whether the unbounded set that the internal argument identifies is null (as in *no sandwiches* and *(to) nobody* in the lefthand column) or not (as in *sandwiches* and *to her mother* in the righthand column).

However, no such *v*P eventuality opposition can be made between accomplishment and achievement by manipulating the quantity of the internal argument. In other words, event composition fails to make the *v*P eventuality opposition in terms of instantaneity. In this sense, the accomplishment vs. achievement distinction is external to compositional semantics; Verkuyl (1993:47) concludes "it is really the only opposition that is completely lexical."

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[33] I leave it to the reader to confirm that each of the sentences in (71)–(73) has the designated *v*P eventuality.
[34] For the function of the prepositions *at, from, to*, etc. that creates a nonempty, unbounded set, see Verkuyl 1993:§13.6.

2.6.2 Semelfactive

Semelfactives are instantaneous and atelic, according to Smith (1991:55), differing from achievements, which are also instantaneous, but telic. The class of semelfactives is exemplified by the sentences in (74).

(74)   a.   Bill *coughed*
           b.   Sue *knocked* on the door

The difference between semelfactives and achievements in terms of telicity is evident from their (in)congeniality with durative adverbials such as *for five minutes*.

(75)   a.   Sue *knocked* on the door for five minutes   *semelfactive*
           b.   #Mary *reached* the hotel for five minutes   *achievement*

(75a) reads without a forced repetitive interpretation (although the situation described by this example is full of many instances of Sue's door-knocking), but the repetitive interpretation obtained with (75b) feels forced, on par with the accomplishment sentences in (76).[35]

(76)   a.   #Mary walked home for five minutes   *accomplishment*
           b.   #Mary opened the door for five minutes   *accomplishment*

It is true that particles such as *out* (and the internal argument) alter the vP eventuality from semelfactive to accomplishement. (77a) has an ingressive reading, whereas (77b) has a coextensive reading.

(77)   a.   #Bill coughed in five minutes   *semelfactive*
           b.   Bill coughed a candy *out* (of his throat) in five minutes   *accomplishment*

However, this eventuality shift (i.e. the "resultative" formation) has no bearing on semelfactiveness per se; it is because of the verb's dynamicity. The same alternation is also obtainable between processes and accomplishments. (78a) must be interpreted ingressively, but (78b) is interpreted coextensively.

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[35] (76b) easily allows a felicitous interpretation in which *for five minutes* refers to the duration of the door being open. The availability of this interpretation is orthogonal to the current discussion.

| (78) | a. | #Bill pushed a chair in five minutes | *process* |
| | b. | Bill pushed a chair *out* (of the room) in five minutes | *accomplishment* |

Thus, semelfactivity is syntactically inert. It is not a an eventuality dimension that is comparable to dynamicity (i.e. temporality τ); it obtains no eventuality shift, interacting with other syntactic objects.

In fact, Plains Cree data in (79) suggest that semelfactivity may well be considered a piece of information that is conveyed by roots.

(79)   a.   *ostosto*-t-am(-w)
                cough-TRAN-I.TH-3
                's/he coughs'

       b.   *câhcâ*-m-o-w
                sneeze-by.mouth-INTR-3
                's/he sneezes'

       c.   *pâhp*-i-w
                laugh-INTR-3
                's/he laughs'

The boldfaced roots in these verbal complexes can be regarded as fossilised reduplicative roots.[36] The root *ostosto* 'cough' in (79a) appears to be a product of reduplication (excluding the initial or the final segment *o*, whatever that is). The roots *câhcâ* 'sneeze' in (79b) and *pâhp* 'laugh' in (79c) appear to be fossilised instances of the productive reduplication that Ahenakew and Wolfart (1983) call "heavy reduplication." This reduplication, illustrated by (80), copies the initial consonant of the stem, if any, as the onset of the prefixal reduplicant [(C)âh].

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[36] Fossilised because there are no verbal complexes in (i).
(i)   a.   **osto*-t-am(-w)
           cough-TRAN-I.TH-3
    b.   **câ*-m-o-w
           sneeze-by.mouth-INTR-3
    c.   **p*-i-w
           laugh-INTR-3
Lack of these forms may well be taken as suggesting that it is the root, not the stem, that heavy reduplication targets.

(80) a.   ni-pim-oht-â-n
               1-along-walk-INTR-LCAL
               'I walk along'

      b.   ni-*pâh*-pim-oht-â-n
               1-RED-along-walk-INTR-LCAL
               'I walk off and on'   (Ahenakew & Wolfart 1983:371)

In (80b), the root-initial [p] is copied as the onset of the reduplicant [(C)âh]. Heavy reduplication signifies an "in some way discontinuous and intermittent" situation, according to Ahenakew and Wolfart (1983:370). Thus, if heavy reduplication constitutes the original source of the alleged reduplicative roots in (79b) and (79c), their semelfactive nature (i.e. inherent repetitiveness) follows.[37] The point here is that semelfactive information is registered on roots, which the Zero Eventuality Hypothesis (ZEH) argues to have no temporality subject to eventuality composition. Thus, to the extent that the ZEH is tenable, it is concluded that semelfactivity is not a dimension of eventuality that is active in the syntax. If anything, semelfactivity is part of the conceptual content, one of the three defining properties of a predicate that roots encode as the encyclopedic, real-world knowledge pertaining to the predicate (Marantz 1997).

2.6.3 Dynamic

Carlson (1981) differentiates six eventualities.[38] In addition to the five eventualities that Smith (1991) postulates, Carlson has an eventuality called "dynamic," which differs from "dynamic" identified here as [+ADD TO], the positive value of temporality τ on v_i. Bach (1986:6) categorises it as a state which is dynamic. This class is exemplified by verbs of spatial configuration such as *sit*, *stand*, and *lie*.

(81) a.   Ken *sat on the chair*
      b.   Sue *lay down*
      c.   Two very old oak trees *stood at the gate*

The atelic nature of these sentences is confirmed by their compatibility with durative adverbials.

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[37] One may say that *pâhp* 'laugh' is a process, and argue that Plains Cree reduplication has nothing to do with semelfactiveness per se, and therefore my argument is faulty. On the contrary, I believe that this points to a unification of semelfactives and processes of a repetitive nature in the language. Coughing and sneezing can be conceptualised as consisting of several coughs or sneezes, just as laughter is often considered to be comprised of more than one sound emission at the vocal cords. The matter is nonlinguistic.

[38] Bach (1986:6) is supportive of Carlson's (1981) classification by saying that "it is necessary to have at least this much of a classification if we are to deal adequately with the syntax and semantics of English."

(82)   a.   Ken *sat on the chair* for ten minutes
        b.   Sue *lay down* for half an hour
        c.   Two very old oak trees *stood at the gate* for several hundred years

At least (82a) and (82b), the subject being animate, are given an ingressive interpretation when they occur with a frame adverbial, which suggests that they are more or less achievements.

(83)   a.   Ken *sat (down) on the chair in a moment*
        b.   Sue *lay down in a moment*

Variable behavior of this sort is a property of non-compositional semantics because there is no change in the constituents between (82a) and (83a), and between (82b) and (83b) (save the change of the temporal adverbials). They simply behave sometimes as atelic eventualities, and sometimes as telic eventualities.

I suspect that the English verb *hold* also falls into the class of dynamic eventualities in the sense of Carlson 1981. The verb exhibits a behaviour that situates it in between states such as (84a) and processes such as (84b).[39]

(84)   a.   Mary likes the door   *state*
        b.   Mary pushed the door   *process*

The sentences in (84) are both atelic. However, when an adjective such as *open* is added as secondary predicate, the sentence containing *like* remains as a state and atelic (85a), whereas the sentence containing *push* becomes an accomplishment and telic (85b). The sentence in (85b) is in the so-called "resultative" construction (Rothstein 1983).

(85)   a.   Mary liked the door *open*   *state*
        b.   Mary pushed the door *open*   *accomplishment*

This contrast demonstrates the grammatical distinction between the two verbs *like* and *push*, which are static and dynamic, respectively. Now, provided that whether addition of secondary predicate triggers a resultative interpretation is a solid diagnostic to distinguish between states and processes, the English verb *hold* belongs among states.

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[39] Verkuyl (1993:361, fn.39) treats Carlson's (1981) dynamic as "being intermediate between States and Activities."

| (86) | a. | Mary held the door for five minutes | *state* |
| | b. | Mary held the door *open* for five minutes | *state* |

(86a), which lacks the secondary predicate *open*, is aspectually no different from (86b), which contains it. This is exactly the property that states possess, as demonstrated above with the state verb *like*, cf. (84a) and (85a). In this respect, the verb *hold* finds affinity with states.

The verb is special, however, because it is "dynamic" in the sense of Carlson 1981and Bach 1986. Its "dynamicity" manifests itself in its influence on the truth of the situation that the secondary predicate and its subject describes—we will call this situation "small clause."

| (87) | a. | Mary liked [$_{sc}$ the door *open*] | *"static" state* |
| | b. | Mary held [$_{sc}$ the door *open*] | *"dynamic" state* |

In (87a), the truth of the small clause *the door open* has no bearing on the truth of the entire sentence. Even if Mary stops liking the door open, it in no way affects the situation in which the door is open. In contrast, the truth of the same small clause hinges on the truth of the entire sentence; once Mary stops holding the door open, it is the end of the door being open.[40] Thus, addition of the secondary predicate *open* reveals the sense in which static and dynamic states differ from one another. Nevertheless, it is not the case that dynamic states are derived from static states by means of a secondary predicate. Nor is it the case that dynamic states shift to telic eventualities due to addition of a secondary predicate, like static states, and unlike processes. Hence, I conclude that the static vs. dynamic distinction among states is a contrast that fails to enter into eventuality composition, but rather resides in conceptual content as a lexical idiosyncrasy.

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[40] Presumably, this difference must be reflected in their different syntactic structures, as the grammaticality contrast in (i) suggests, cf. Rothstein 1983.
(i) a. *Mary liked open the door
   b. Mary held open the door
I abstract away from the structural issue in (87). I thank Matthew Ritchie (personal communication) for bringing my attention to the issue.

Chapter 3

*v*P Structures and the Syntax of Affixation

3.0 Introduction

Chapter 2 capitalised on the absence of temporality in Plains Cree roots, and explained why it favours a particular theory of eventualities implemented in terms of *v*P structures. The crucial factors are the following: first, it is v_1 (the syntactic head to which transitivity suffixes correspond), not ROOT (the syntactic head to which Plains Cree roots correspond), that conveys temporality τ; second, temporality τ on v_1 is the binary dynamicity feature [±ADD TO] in the sense of Verkuyl 1972, 1993. These two factors together derive the empirical generalisation that there is no morphological stacking of predicates (i.e. verb stems = root + transitivity suffix) in Plains Cree; in particular, no static predicate is contained by dynamic predicates.

The essential stipulation in the above scenario is that Plains Cree verb stems (i.e. predicates) are syntactically formed (i.e. by means of the proposed *v*P structures). This is in a sense a null hypothesis that follows from the claim that it is verb stems that are predicates in Plains Cree, and that predicates are derived in the syntax. The central aim of this chapter is to argue that verb stems are in fact formed in the syntax by capitalising on another property of Plains Cree roots, referentiality. This enterprise leads us to consider how the morphemes that enter into verb-stem formation are to be distributed over the proposed *v*P structures. This issue is discussed for each of the five verb types to be identified below. This chapter lays the groundwork for the analysis of syntactic phenomena in later chapters.

The chapter is organised as follows. First, in §3.1, I argue that the referentially-dependent nature of a set of roots available in Plains Cree corroborates a syntactic treatment of verb stems (and verbal complexes in their entirety, for that matter). I also propose a way to linearise *v*P-internal morphemes. Second, §3.2 details how the morphological structure of five different verb types in Plains Cree is mapped onto the *v*P structure assigned to each verb type. It is in this section that the mechanism by which unergatives and dynamic unaccusatives attain their surface intransitivity is revealed. Third, §3.3 argues that the proposed syntactic approach is superior to traditional templatic approaches in the analysis of Plains Cree verbal complexes. Finally, §3.4 concludes the chapter.

3.1 The Syntax of Affixation

The theory of eventualities developed in Chapter 2 on the basis of the Zero Eventuality Hypothesis (ZEH) associates the bracketed verb stem in the static verbal complex in (1a) with the single-layered vP structure in (1b).

(1)   a.   ni-[kino-si]-n
                1-tall-STAT-LCAL
                'I am tall'

         b.

$$v\text{P}_1$$

$$v_1 \qquad \text{ROOT}$$
$$\textit{-isi} \qquad \textit{kinw}$$
$$[\text{--ADD TO}] = \{\tau\}$$

The root *kinw* 'long, tall' occupies the ROOT position. The static intransitive suffix *-isi* occupies v_1, carrying temporality τ. Granted that (1b) properly describes the static verb stem in (1a) from the point of view of the ZEH-based eventuality theory, two questions must be asked. First, is there independent empirical evidence that verifies my treatment of the root *kinw* 'long, tall' and the static intransitive suffix *-isi* as syntactic objects? Second, how is the surface morpheme order obtained from the structure? This section answers the first question in §3.1.1 by discussing the referential property of "relative roots" in Plains Cree. The second question is answered in §3.1.2 by proposing a linearisation mechanism by means of "movement" that gives rise to the correct surface morpheme order in (1a). Then in §3.1.3, I compare the proposed syntactic analysis of affixation with a templatic analysis of affixation in such a way that the use of the latter in regulating the shape of verbal complexes is rendered superfluous. Finally, §3.1.4 summarises this section with remarks on some implications which the syntactic analysis of affixation will have pertaining to phenomena that affect verb stems (and verbal complexes, in general).

3.1.1 Evidence for a Syntactic Treatment of Verbal Complexes

This subsection provides a piece of evidence that roots in Plains Cree are syntactic objects. If roots are syntactic objects, then larger morphological units that contain them, such as verb stems (i.e. predicates) and verbal complexes (i.e. propositions), must also be syntactic objects. Thus, to demonstrate that roots

are syntactic objects is to support my claim that stem (or predicate) formation is implemented syntactically, in particular, by means of the proposed vP structures. In doing so, I make use of the existence of so-called "relative roots" in Plains Cree and the notion of "referential islands" (Postal 1969).

According to Wolfart (1973:66), "relative roots" are characterised as roots that "require an antecedent; the antecedent may be a clause, a particle expression, directly quoted speech, etc." Wolfart cites *it* 'thither, thus,' *oht* 'thence, therefore,' and *tahto* 'so many' as the three most commonly-occurring relative roots in Plains Cree texts. The dialogue given in (3) illustrates the referentially-dependent nature of the root *oht* (as well as *it*).

(3)   a.   A: otâkosihk (kî-)*it*-ohtê-w   Claudia [amisk(o)-wâskahikan-ihk]
                      yesterday PAST-thither-walk-3 C.   beaver-house-LOC
                      'Claudia went to Beaver House (i.e. Edmonton) yesterday'

       b.   B: ni-t-[*oht*]-ohtâ-n
                      1-EPEN-thence-walk-LCAL
                      'I come from *there*'

(3a) opens up a dialogue in which the nominal *amiskwâskahikanihk* 'Beaver House (i.e. Edmonton)' is introduced as the destination of the trip made by Claudia yesterday. It is this nominal that is referred back to by the relative root *oht* 'thence' in (3b), the response to (3a).[1]

Since Postal 1969, it has been argued that referential dependency can be established only between syntactic objects. This is demonstrated by comparing the following two sentences that are modelled on the the examples in Di Sciullo and Williams 1987:50–1:

(4)   a.   John is a [*Bush* supporter] in every sense. However, he does not support Bush.
       b.   *John supports *Bush* in every sense. However, he does not support Bush.

In agreement with Di Sciullo and Williams, (4a) is not a contradictory statement, but (4b) is. To replicate their argumentation, the reason that (4a) is not contradictory is that the italicised name *Bush* is not referential. This is because, they argue, *Bush* is contained within the bracketed compound *Bush supporter* in (4a), and thus it itself is not a syntactic object. In (4b), *Bush* is a syntactic object, and thus is referential, effecting a contradictory statement.

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[1] The root *it* in (3a) also takes *amiskwâskahikanihk* as its antecedent.

Given this notion that certain expressions constitute referential islands, the fact that the root *oht* 'thence' (as well as the root *it* 'thither, thus') enters into the well-formed referential dependency illustrated in (3) constitutes evidence for identifying the relative root as a syntactic object.[2] If relative roots are syntactic objects, then larger units that contain them are also syntactic objects. This parallels the fact that in (4b), *Bush* is a syntactic object, and so is the verb phrase *supports Bush*, which contains (or dominates) it. On the assumption that relative and non-relative roots constitute a uniform lexical class (i.e. roots), one can also identify non-relative roots as syntactic objects.

In sum, one need not stipulate Plains Cree roots as syntactic objects. It follows from the referential dependency in which relative roots participate and the independently-motivated condition imposed on establishing referential dependency. Consequently, now we have good reason to analyse Plains Cree verb-stem formation (and formation of verbal complexes as well) in syntactic terms.

3.1.2 A Linearisation Mechanism for *v*P-Internal Morphemes

Verbal complexes in Plains Cree are syntactically formed, as is evident, I argue, from the referentially-dependent nature of relative roots observed in the previous subsection. According to the principles-and-parameters approach, syntax not only determines hierarchical arrangement of syntactic objects, but also their linear order. Thus, syntax is responsible for linearly as well as hierarchically arranging morphemes, which are syntactic objects in Plains Cree. This subsection proposes a set of machinery to obtain the attested linear order of *v*P-internal morphemes within *v*P.[3] I focus on the linearisation only within *v*P because this syntactic projection delimits the domain of inquiry of this thesis.[4] The *v*P-internal morpheme linearisation to be proposed below hinges on the following three factors: the head-complement parameter set for Plains Cree, the application of Move, and the direction of adjunction.

First of all, I assume, along with other recent generative syntactic treatments of Plains Cree verbal complexes (Blain 1997, Déchaine 1999, among others), that Plains Cree is "head-initial" (i.e. a head precedes its complement as in English), not "head-final" (i.e. a head follows its complement as in

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[2] Goddard (1988) also makes an argument and draws a conclusion similar in spirit to mine.
[3] And perhaps a restricted range of higher functional categories dominating the *v*P projection, e.g. the suffixes involved in the "Unspecified Subject Construction" to be examined in §5.2.
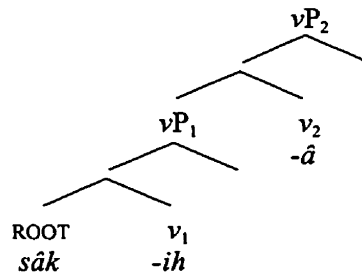[4] For a syntactic proposal on morpheme linearisation external to *v*P, see Déchaine 1999.

Japanese).[5] Thus, the verbal complex *nisâkihâwak* 'I love them' in (5a) has the head-initial double-layered *v*P structure representation in (5b), not its head-final counterpart in (5c).

(5)   a.   ni-[*ᵥ*ₚ sâk-ih-â]-w-ak
              1-love-TRAN-A.TH-3-3PL
              'I love them'

       b.   *head-initial*
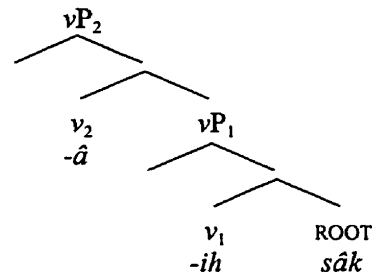
       c.   *head-final*

In (5b) and (5c), the root *sâk* 'love,' the animate transitive suffix *-ih*, and the animate theme sign *-â*, respectively occupy ROOT, v_1, and v_2.[6] The first person prefix *ni-*, and the two agreement suffixes *-w* and *-ak* fall outside the *v*P projection.

Second, I propose that Move is operative in the *v*P domain. If no movement operation applied to the relevant morphemes as syntactic objects, the head-initial *v*P structure in (5b) would give rise to the illicit verbal complex in (6a). (The parenthesised sound would delete due to one of the phonological rules postulated for Plains Cree.)

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[5] For an empirical justification of this assumption, see Hirose 2000. If Kayne (1994) is correct, the head-initial structure is the only choice available in UG.

[6] See §3.2.2.2 for a discussion of the syntactic position of Plains Cree theme signs.

(6)   a.   *ni-t-[$_{vP}$ â-(i)h-sâk]-w-ak
1-EPEN-A.TH-TRAN-love-3-3PL

      b.   ni-[$_{vP}$ sâk-ih-â]-w-ak
1-love-TRAN-A.TH-3-3PL
'I love them'

The correct shape of the verbal complex (6b) is obtained in two steps via successive applications of Move. First, Move applies to ROOT, and adjoins it to v_1 (7a). Second, the operation applies to the resultant v_1 complex, and adjoins it to v_2 (7b).

(7)   a.   *movement of ROOT to v$_1$ (left adjunction)*
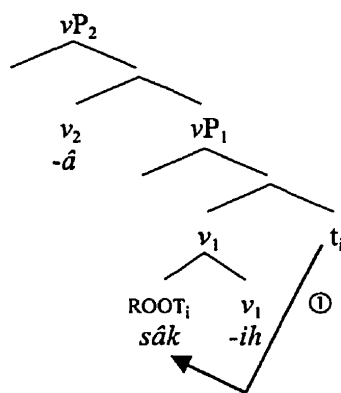
      b.   *movement of the v$_1$ complex to v$_2$ (left adjunction)*
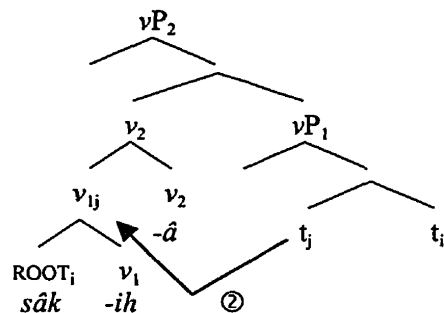
Another assumption that is crucial here is that adjunction is to the left of the target, rather than to the right.[7] If the adjunction direction is from the right of the target, we would end up with the ill-formed morpheme order of (6a). This is illustrated in (8).

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[7] This may be derivable from Kayne's (1994) "Linear Correspondence Axiom" (LCA), a general constraint that is argued to govern the linear ordering of the syntactic objects occurring in a phrase structure. Chomsky (1995) claims that the LCA is a constraint that belongs to phonology, not syntax.

(8) a. *movement of* ROOT *to* v*₁* *(right adjunction)*

$$vP_2$$

v_2 / $-\hat{a}$
vP_1

v_1
t_i

v_1 / $-ih$ ROOT$_i$ / $s\hat{a}k$ ①
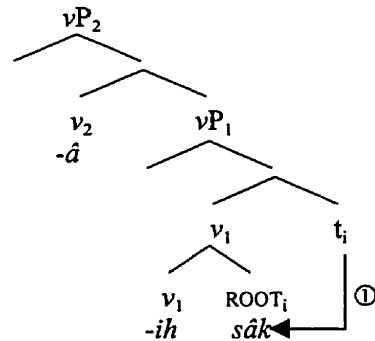
b. *movement of the* v*₁* *complex to* v*₂* *(right adjunction)*

$$vP_2$$

v_2
vP_1

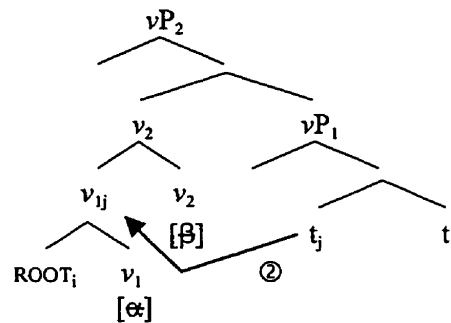v_2 / $-\hat{a}$ v_{1j} ② t_j t_i

v_1 / $-ih$ ROOT$_i$ / $s\hat{a}k$
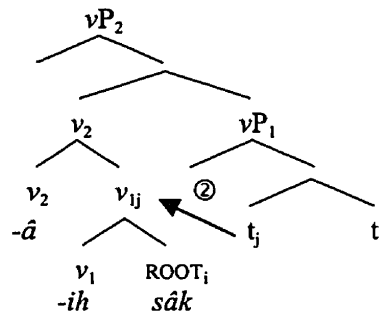
Thus, we have seen that given the head-initial vP structure, the vP-internal morpheme linearisation in Plains Cree is attained by stipulating that the operation Move applies successively to ROOT and vs, and that adjunction of a moved syntactic object is to the left of the target syntactic object. With respect to successive applications of Move, the vP-internal morpheme linearisation proposed here instantiates Baker's (1985) "Mirror Principle," to the effect that the order of syntactic operations reflects the order of morphemes and vice versa.

Before leaving this subsection, some remarks are in order on the driving force of the successive movements proposed above. In the minimalist program (Chomsky 1995), which this dissertation adopts as its general framework, Move is triggered by a (uninterpretable) formal feature on the target of movement. The moved syntactic object moves to erase the formal feature of the target syntactic object. This is illustrated in (9). ROOT moves to v_1 to erase the formal feature α on v_1, and the v_1 complex moves to v_2 to erase the formal feature β on v_2.

(9) a. *movement of ROOT to v₁ to erase α on v₁*

$$vP_2$$

$$v_2 \quad vP_1$$
$$[\beta]$$

$$v_1 \quad t_i$$

$$ROOT_i \quad v_1 \qquad ①$$
$$[\alpha]$$
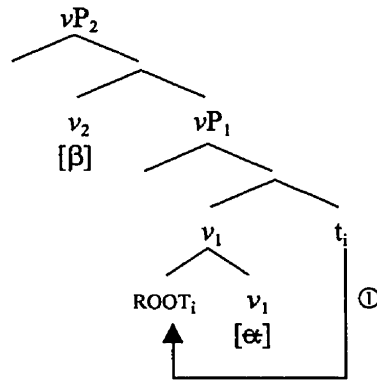
b. *movement of the v₁ complex to v₂ to erase β on v₂*

$$vP_2$$

$$v_2 \qquad vP_1$$

$$v_{1j} \quad v_2$$
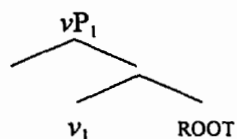$$[\beta] \quad t_j \qquad t_i$$

$$ROOT_i \quad v_1 \qquad ②$$
$$[\alpha]$$

For the moment, I leave open the exact nature of formal features α and β, and whether α and β are identical.[8] The next section turns to the task of fleshing out the three vP structures proposed in the introductory chapter with actual Plains Cree verbs.

3.2 Three *v*P Structures and Plains Cree Predicates

Recall that natural language predicates are describable by means of the three vP structures in (10).

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[8] Chomsky (1999) claims that movements of the kind discussed here—i.e. "head movements" in the traditional terminology—may not take place in the syntax, but in the phonology. Even if this turns out to be the case, I believe that phonology cannot totally disregard the structure built in the syntax. This must be so because "locality" must count in combination of morphemes; for instance, it is unlikely that the ROOT morpheme concatenates to the v_2 morpheme, skipping over its sister, the v_1 morpheme. Chomsky (1999) postulates "noun incorporation" in the sense of Baker 1988 as the only instance of syntactic head movements. See §4.4 for a related discussion.
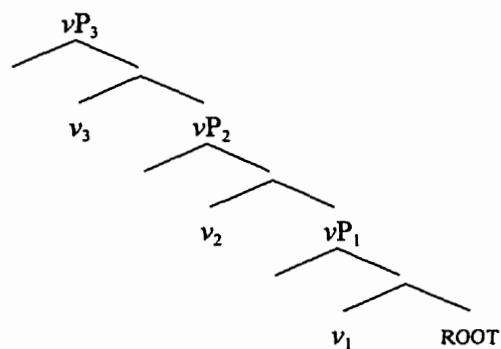
(10) a. *single-layered vP*

$$vP_1$$
$$v_1 \qquad \text{ROOT}$$

b. *double-layered vP*

$$vP_2$$
$$v_2 \qquad vP_1$$
$$v_1 \qquad \text{ROOT}$$

c. *triple-layered vP*

$$vP_3$$
$$v_3 \qquad vP_2$$
$$v_2 \qquad vP_1$$
$$v_1 \qquad \text{ROOT}$$
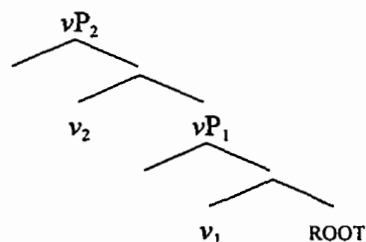
I recognise five different verb (or predicate) types in natural language—static unaccusatives, transitives, unergatives, dynamic unaccusatives, and applicatives/ditransitives. These five verb types are illustrated by the Plains Cree examples in (11)–(15).

(11) *static unaccusatives*

    a.   [$_{vP}$ kino-si]-w
            tall-STAT-3
            's/he is tall'

    b.   [$_{vP}$ mihkw-â]-w
            red-S.STAT-0
            'it is red'

(12)   *transitives*

    a.   [$_{\nu P}$ sâk-ih-ê]-w
          love-TRAN-A.TH-3
          's/he loves her/him'

    b.   [$_{\nu P}$ kip-ah-am](-w)
          close-by.tool-I.TH-3
          's/he closes it'

(13)   *unergatives*[9]

    a.   [$_{\nu P}$ nip-â]-w
          sleep-INTR-3
          's/he sleeps'

    b.   [$_{\nu P}$ pim-paht-â]-w
          along-run-INTR-3
          's/he runs along'

(14)   *dynamic unaccusatives*

    a.   [$_{\nu P}$ tako-payi]-w
          arrive-INCH-3
          's/he arrives (by conveyance)'

    b.   [$_{\nu P}$ yôhtê-payi]-w
          open-INCH-0
          'it opens (by itself)'

(15)   *ditransitives & applicatives*

    a.   [$_{\nu P}$ miy-ê]-w
          give-A.TH-3
          's/he gives it/her/him to her/him'

    b.   [$_{\nu P}$ man-is-amaw-ê]-w
          cut-by.edge-APPL-A.TH-3
          's/he cuts it/her/him for her/him'

The νP portion of each verbal complex in these examples is bracketed (which does not necessarily correspond to the stem = root + transitivity suffix). The aim of this section is to analyse each type of Plains Cree verbal predicate in terms of one of the three νP structures in (10) above. As is demonstrated

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[9] The segmentation that I assign to Plains Cree unergative verbs is highly controversial. Synchronically, the morpheme boundary between the root and the transitivity suffix of unergative verbs is in general opaque. The

below, static unaccusatives are analysed by means of a single-layered vP structure, transitives, unergatives, and dynamic unaccusatives are analysed by means of a double-layered vP structure, and ditransitives and applicatives are analysed by means of a triple-layered vP structure.

As proposed in §3.1.2, linearisation of vP-internal morphemes (i.e. the morphemes within the brackets in the above vebal complexes) results from successive applications of Move to the non-specifier syntactic objects within vP (i.e. ROOT and vs) to form a "complex v" at the topmost v. The outcomes are the complex vs given in (16).

(16)   a.   *single v*: $[_{v1}\text{ ROOT} + v_1]$
        b.   *double v*: $[_{v2}\,[_{v1}\text{ ROOT} + v_1] + v_2]$
        c.   *triple v*: $[_{v3}\,[_{v2}\,[_{v1}\text{ ROOT} + v_1] + v_2] + v_3]$

Suppose every syntactic object comprising each complex v is pronounceable. Then it is predicted that the "single v" must contain two morphemes (16a), the "double v" must contain three morphemes (16b), and the "triple v" must contain four morphemes (16c). As a brief inspection of the example verbal complexes in (11)–(15) reveals, the morphological realisation of the three complex vs is not always warranted in the language. For instance, the vP portion of the unergative verbal complex *nipâw* 's/he sleeps' in (13a) contains two morphemes, the root *nip* 'sleep' and the intransitive suffix *-â*. Likewise, both dynamic unaccusative verbal complexes *takopayiw* 's/he arrives by transportation' and *yôhtêpayiw* 'it opens (by itself)' in (14) consist of two vP-internal morphemes, the roots *tako* 'arrive' and *yôhtê* 'open,' respectively, and the inchoative suffix *-payi*.[10] The number of the vP-internal morphemes of these dynamic intransitive verbal complexes is short of the number of morphemes predicted by the double-v schema (i.e. $[_{v2}\,[_{v1}\text{ ROOT} + v_1] + v_2]$) by one. Since the root is the syntactic object ROOT, it is either v_1 or v_2 that must be phonologically null in these verbs. This section explicates which morpheme represents which vP-internal syntactic object for each verb type in accordance with the complex verb schemata in (16), and in so doing proposes a solution to the morphology-syntax mismatch problem.

The organisation of the remainder of this section is as follows. First, §3.2.1 demonstrates that verbs that are assigned a single-layered vP, namely static unaccusatives, are straightforwardly analysable by means of the single-v schema (i.e. $[_{v1}\text{ ROOT} + v_1]$). The next three subsections deal with those verbs that are assigned a double-layered vP, namely transitives, unergatives, and dynamic unaccusatives. It

proposed segmentation will be justified only if the syntactic structure that it reflects provides insight into speakers' judgements on unergatives. For the moment, such data is unavailable, and I leave the issue open for future research.

turns out that although transitives fit well with the double-v schema (i.e. $[_{v2}\ [_{v1}\ \text{ROOT} + v_1] + v_2]$), the information encoded on the transitive suffix and on the "theme sign" poses a problem for their allocation between the two v heads. It will be argued in §3.2.2 that this problem is only apparent. §§3.2.3 and 3.2.4 propose that the intransitive suffix of unergatives occupies v_2, whereas the inchoative suffix of the dynamic unaccusatives occupies v_1. The deciding factor, I claim, is in which specifier position of the double-layered vP structure the "single" argument of these dynamic verbs is introduced. §3.2.5 shows that applicatives, made of a triple-layered vP, are properly analysed by means of the triple-v schema (i.e. $[_{v3}\ [_{v2}\ [_{v1}\ \text{ROOT} + v_1] + v_2] + v_3]$). In agreement with Rhodes 1976, Plains Cree applicatives are analysed as having the same argument alignment as the "Double Object Construction" found in English and other languages, whereas the root-only ditransitive verb miy 'x gives y to z' is analysed as having the same alignment as the "Dative Construction." §3.2.6 summarises the section.

3.2.1 Single-Layered *v*P: Static Unaccusatives

A single-layered vP is appropriate to analyse static unaccusatives. If so the morphological structure of static unaccusatives is expected to be bimorphemic, conforming to the single-v schema (i.e. $[_{v1}\ \text{ROOT} + v_1]$). This prediction is indeed borne out, as the static unaccusative verbal complexes in (17) illustrate.
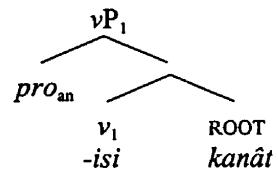
(17)   a.   [$_{vP}$ kanât-isi]-w   *animate state*
               clean-STAT-3
               's/he is clean'

       b.   [$_{vP}$ kanât-an](-w)   *inanimate state*
               clean-STAT-0
               'it is clean'

These verbal complexes share the root *kanât* 'clean, pure.' The static intransitive suffix -*isi* in (17a) occurs when the single argument is animate, whereas the static intransitive suffix -*an* in (17b) occurs when the single argument is inanimate.[11] Thus, static unaccusatives exhibit a perfect match between syntax and morphology. The vP portions of these verbal complexes are represented in (18a) and (18b).
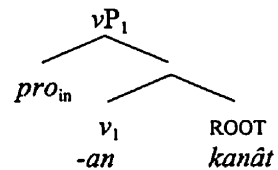
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[10] The ditransitive verb stem *miy* 'x gives y to z' is one of the exceptional root-only stems in the language, which are not accompanied by a transitivity suffix.

[11] The other inanimate static intransitive suffix -*â* occurs when the predication is spatial, whereas -*an* occurs otherwise, according to Denny (1984:269).

(18)   a.   *kanâtisiw*   'it is clean'

$$vP_1$$

$$pro_{an} \quad\quad v_1 \quad\quad ROOT$$
$$\qquad\qquad -isi \quad\quad kanât$$

b.   *kanâtan(w)*   'it is clean'

$$vP_1$$

$$pro_{in} \quad\quad v_1 \quad\quad ROOT$$
$$\qquad\qquad -an \quad\quad kanât$$

In both vP structures, the root *kanât* 'clean, pure' occupies the ROOT position. The static intransitive suffixes *-isi* and *-an* as v_1 of [−ADD TO] determine the static nature of the verbal complex. In addition, these suffixes identify the animacy of the single argument in Spec, vP_1 as animate (i.e. *pro*pro_{an}) and inanimate (i.e. pro_{in}), respectively.[12]

3.2.2 Double-Layered *v*P I: Transitives

Transitives are assigned a double-layered vP structure, and thus they are expected to be trimorphemic in conformity with the double-v schema (i.e. $[_{v2} [_{v1} ROOT + v_1] + v_2]$), provided that morphology mirrors syntax. This prediction holds true if the so-called "theme sign" is taken to be part of the double-layered vP structure as v_2.[13] The bracketing in the pairs of the transitive verbal complexes in (19) and (20) indicates this possibility.

---

[12] Along with other generative grammarians who work on Plains Cree (Blain 1997, Déchaine 1999, among others), I hereafter postulate *pro* as the phonologically-null pronominal argument in a specifier position in my vP analysis, cf. Baker 1996.

[13] Brittain (1997) treats the theme sign in Montagnais as "AgrO," a functional head that governs the Case and/or agreement of the internal argument in the version of the "minimalist program" envisaged in Chomsky (1995:Ch.3), cf. Pollock 1989.

(19)   a.   [$_{vP}$ kisk-*êyim-ê*]-w   *animate internal argument*
                   know-by.mind-A.TH-3
                   's/he knows her/him'

       b.   [$_{vP}$ pâsk-*isw-ê*]-w   *animate internal argument*
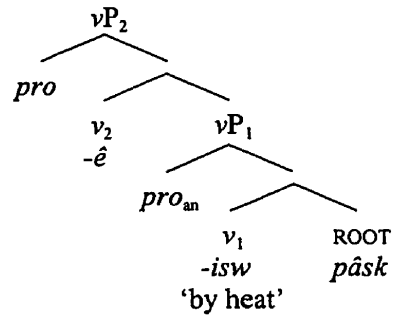   shoot-by.heat-A.TH-3
                   's/he shoots her/him'

(20)   a.   [$_{vP}$ kisk-*êyiht-am*](-w)   *inanimate internal argument*
                   know-by.mind-I.TH-3
                   's/he knows it'

       b.   [$_{vP}$ pâsk-*is-am*](-w)   *inanimate internal argument*
                   shoot-by.heat-I.TH-3
                   's/he shoots it'

The (a) examples constitute a minimal pair, sharing the ROOT *kisk* 'know.' So do the (b) examples, whose common ROOT is *pâsk* 'shoot.' The difference between the partners of each pair is the animacy of the internal argument. The internal argument is animate for the verbal complexes in (19), whereas it is inanimate for those in (20). The animacy of the internal argument is encoded in the shape of the theme sign as v_2 and of the transitivity suffix as v_1. Thus, the theme sign is -*ê* in the verbal complexes in (19), where the internal argument is animate, whereas it is -*am* in the verbal complexes in (20), where the internal argument is inanimate.[14] The transitive suffixes surface differently as -*êyim* in (19a) and -*êyiht* in (20a), but convey the same meaning 'by mind.' Likewise, the transitive suffix meaning 'by heat' is -*isw* in (19b), whereas it is -*is* in (20b). Guided by the double-*v* schema (i.e. [$_{v2}$ [$_{v1}$ ROOT + v_1] + v_2]), the bracketed portions of (19b) and (20b) are represented as (21a) and (21b), respectively.

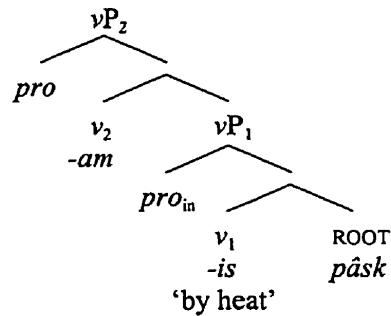[14] Also encoded on the theme sign is information about person (and order).
(i)   a.   miyw-êyim-*ê*-w
         good-by.mind-A.TH-3
         's/he likes her/him'
    b.   ni-miyw-êyim-*â*-w
         1-good-by.mind-A.TH-3
         'I like her/him'
The animate theme sign -*ê* is used when both arguments of a transitive verb are third person, and the verbal complex is in the independent order. The animate theme sign -*a* is the elsewhere form for transitive verbs whose internal argument is third person in both independent and conjunct orders. I abstract away from these details.

(21) a. *pâskiswêw* 's/he shoots her/him'

```
              vP₂
           /      \
        pro         \
                  /     \
               v₂        vP₁
               -ê       /    \
                    proₐₙ      \
                            /     \
                          v₁       ROOT
                          -isw     pâsk
                          'by heat'
```
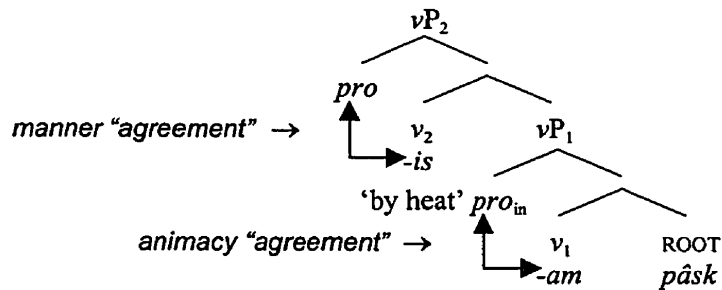
b. *pâskisam(w)* 's/he shoots it'

```
              vP₂
           /      \
        pro         \
                  /     \
               v₂        vP₁
               -am      /    \
                    proᵢₙ      \
                            /     \
                          v₁       ROOT
                          -is      pâsk
                          'by heat'
```

The internal argument in Spec, vP_1 is grammatically encoded as animate and is marked as such (i.e. *pro*ₐₙ) in (21a). Similarly, in (21b), the internal argument is grammatically encoded as inanimate and is so marked (i.e. *pro*ᵢₙ). The external argument is animate by default and thus unmarked.[15] The postulation of the transitive suffixes *-isw* and *-is* as v_1 in (21) is justified by the meaning 'by heat,' which (canonically) implies a dynamic situation (i.e. [+ADD TO]); v_1 is the locus of temporality τ. Moreover, as pointed out above, these suffixes encode the animacy of the internal argument; *-isw* identifies the animate internal argument, whereas *-is* identifies the inanimate internal argument. If the transitive suffix occupies v_1, this animacy identification can be captured as an instantiation of the agreement between a head and its specifier (i.e. "Spec-Head agreement"). At the same time, however, this "manner specification" is instrumental (i.e. '*by* heat') and as such is likely to be associated with agentivity, the hallmark of the external argument.[16] Using agentivity as a criterion, one might consider it more appropriate to have the transitive suffix as v_2, since v_2 introduces the external argument. These

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[15] In the "direct" form of the verbal complex, at least. In the "inverse" form, it is also possible for the external argument to be inanimate. For a brief description of the "direct" vs. "inverse" opposition (i.e. "direction"), see §1.6.3.

[16] The manner specification is not so much of "instrument" as of "means" in the sense of Lasnik 1988. See Lasnik 1988:fn.5.

ambivalent properties hold true of all manner-specified transitive suffixes in the language, a partial set of which is presented in the next subsection. Thus, as far as the transitive suffix is concerned, it could be postulated either as v_1 (because of its animacy specification) or as v_2 (because of its manner specification). Turning to the theme signs -*ê* and -*am* in (21), at first glance there seems to be no justification for them to sit in v_2, as they "agree" in animacy with the internal argument, rather than with the external argument. This relation may well be visualised as an instance of Spec-Head agreement taking place between v_1 and Spec, vP_1. In sum, setting the morpheme linearisation (and temporality τ) aside, it is reasonable from the agreement perspective to replace (21b) with (22) as a structural analysis of (20b).

(22)

$$vP_2$$

manner "agreement" →

pro

v_2 vP_1

-*is*

'by heat' *pro*in

animacy "agreement" →

v_1 ROOT

-*am*   *pâsk*

The transitive suffix -*is* 'by heat' as v_2 "agrees" with the external argument in manner, whereas the theme sign -*am* "agrees" with the internal argument in animacy, both via Spec-Head Agreement.

The rest of this subsection, however, argues in favour of the picture envisaged in (21), where the morpheme distribution respects the double-v schema (i.e. $[_{v2} [_{v1} \text{ROOT} + v_1] + v_2]$). First, §3.2.2.1 demonstrates that it is not always the case that the instrumental manner specification on the transitive suffix is associated with the external argument. This argues against the base-generation of the transitive suffix as v_2. Second, §3.2.2.2 proposes that animacy agreement between the theme sign and the internal argument is mediated by movement. This movement analysis of animacy agreement reinterprets the animacy of the internal argument encoded on the transitive suffix as a result of "concord" between two local v heads. This in turn effects a possible account of the animacy neutralisation of the transitive suffix in an embedding context, such as with applicatives. §3.2.2.3 summarises the subsection with further remarks on the manner specification of transitive suffixes.

3.2.2.1 Manner Specification

The majority of the transitive suffixes in Plains Cree are specified for an instrument or manner by means of which the eventuality is accomplished. Thus, the four verbal complexes in (23) constitute a paradigm in which the root *tihk* 'melt' remains constant, and the transitive suffix alters, depending on the way *pimiy* 'lard' is melted.

(23)   a.   tihk-*is*-am(-w)   pimiy
                melt-by.heat-I.TH-3 lard
                's/he melted the lard (by heat)'

        b.   tihk-*in*-am(-w)   pimiy
                melt-by.hand-I.TH-3 lard
                's/he melted the lard (by hand)'

        c.   tihk-*isk*-am(-w)   pimiy
                melt-by.body-I.TH-3 lard
                's/he melted the lard (by body)'

        d.   tihk-*aht*-am(-w)   pimiy
                melt-by.mouth-I.TH-3 lard
                's/he melted the lard (by mouth)'

In (23a), the transitive suffix *-is* 'by heat' is used. Perhaps the verb stem *tihkis* '*x* melts *y* (inanimate),' which contains this transitive suffix, is the default way to express a transitive melting situation (with the inanimate internal argument). The presence of the transitive suffix *-in* 'by hand' in (23b) describes a situation in which s/he squeezes the lard to melt it, for instance. (23c) contains the transitive suffix *-isk* 'by foot or body,' which is used, for instance, in a situation where s/he melts the lard by sitting on it. If s/he throws the lard into her/his mouth to melt it, then the appropriate form is (23d), which contains the transitive suffix *-aht* 'by mouth.' As already pointed out above, the manner specification has a strong connection with the external argument. For instance, the hand(s), the body, and the mouth referred to in these examples are understood as belonging to the entity carrying out the action, i.e. the external argument.

It is true that the manner specified on the transitive suffix is interpreted as the manner by means of which the external argument acts on the internal argument, and if the manner involves a body part (e.g. 'by hand'), the body part belongs to the external argument. Nevertheless, there are cases in which the animate transitive suffix *-iskaw* 'by body or foot' refers to the body of the internal argument, not the external argument. This is exemplified by the verbal complexes in (24), adapted from Wolfart and

Ahenakew 1998. The parenthesised number on the right of each example indicates the page number of the dictionary.

(24)   a.   ta-maskaw-*îskâ-ko*-yahk   (80)
            FUT-strong-by.body-INV-21
            'for it to make us (inclusive) strong'

       b.   ê-kî-mây-*iskâ-ko*-t   (87)
            CONJ-PAST-bad-by.body-INV-3
            'it used to cause allergic reactions in him'

Both verbal complexes in (24) are in the "inverse" form signalled by the inverse suffix -*(i)kw*. (All the transitive verbal complexes examined so far are in the "direct" form.) The inverse form is obligatorily used when the person of the external argument is "lower" than that of the internal argument with respect to the language's "person or animacy hierarchy" (see §1.6.3). This inverse situation arises when the external argument is inanimate and the internal argument is animate, for instance. The situations described by the above verbal complexes are exactly such a context, as the use of *it* referring to the external argument in their translation suggests. The internal argument must be animate because the transitive suffix -*iskaw* (→ *iskâ* / _ *i*) takes this form when the internal argument is animate; its inanimate counterpart is -*isk*. The body referred to in (24a) is the body of the first person "inclusive" (i.e. you (guys) and me/us) plural person argument. Likewise, the body referred to in (24b) is the body of the third person singular argument. These animate arguments must be the internal argument of each verbal complex, judging from its translation and the animacy information of the internal argument encoded on the transitive suffix -*iskaw* 'by body or foot.' Thus, the manner specification of the transitive suffix in these examples is not associated with the external argument, but rather with the internal argument. Consequently, the relevant transitive suffix is better analysed as v_1 than as v_2 in these examples Therefore, the manner specification does not necessarily imply the transitive suffix's affiliation with either v_1 or v_2. Given this conclusion, I continue to postulate the transitive suffix as v_1, in accordance with the double-v schema (i.e. $[_{v2} [_{v1} \text{ROOT} + v_1] + v_2]$).

In sum, the behaviour of the transitive suffix -*iskaw* 'by body or foot' in (24) demonstrates that it is not the absolute truth that the manner specification always refers to the external argument. Nevertheless, we must admit that only rarely is the internal argument referred to by the manner specification. My impression is that the manner specification's reference to the internal argument happens only if the external argument is inanimate. If this impression is legitimate, then (25) holds true as the descriptive generalisation about the interpretive behaviour of the manner specification.

(25)   The manner specified on the transitive suffix is interpreted with the animate argument that is introduced in the highest Spec, *v*P.

This precludes the possibility that the manner specified on transitive suffixes be interpreted with inanimate arguments, as seems to be true. Also, it ensures that if there is only one animate argument in a transitive sentence, then the manner specification is interpreted with that argument, regardless of its syntactic position, as exemplified above in (24). Furthermore, if more than one animate argument appears in a sentence, then (25) requires that the manner specification be construed with the argument that is introduced in the highest specifier position. This prediction is confirmed by examples such as (26).

(26)   Claudia tahk-*iskaw*-ê-w   nâpêsis-a
        C.   kick-by.foot-A.TH-3 boy-OBV
        'Claudia kicked the boy'

The transitive suffix -*iskaw* 'by foot or body' encodes Claudia throwing her leg at the boy, not the boy's leg or body as the target of her kicking. In other words, the relevant manner refers to the external argument, not the internal argument. Although it seems appropriate as a descriptive generalisation, I have not determined why (26) obtains in the first place. Certainly, a much deeper understanding of the matter is necessary.[17]

3.2.2.2 Object Agreement

At first, it looks as though the animacy of the internal argument is redundantly determined by the transitive suffix as well as the theme sign. The (a) examples in (27) and (28) contain the theme sign -*â*, which indicates that the internal argument is animate. In contrast, the (b) examples contain the theme sign -*ê*, which indicates that the internal argument is inanimate.

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[17] §6.2.7 provides a discussion that leads to a more appropriate generalisation than (25).

(27)   a.   ni-pakam-*ahw-â*-w   *internal argument = animate*
                 1-hit-by.tool-A.TH-3
                 'I hit her/him'

        b.   ni-pakam-*ah-ê*-n   *internal argument = inanimate*
                 1-hit-by.tool-I.TH-LCAL
                 'I hit it'

(28)   a.   ni-pâsk-*isw-â*-w   *internal argument = animate*
                 1-shoot-by.heat-A.TH-3
                 'I shoot her/him'

        b.   ni-pâsk-*is-ê*-n   *internal argument = inanimate*
                 1-shoot-by.heat-I.TH-LCAL
                 'I shoot it'

The animacy of the internal argument, however, is also encoded in the form of the transitive suffixes in these examples. That is, in both (27) and (28), the relevant transitive suffix surfaces differently depending on the animacy of the internal argument. In (27), the transitive suffix that means 'by tool' surfaces as -*ahw* with the animate internal argument, whereas it surfaces as -*ah* with the inanimate internal argument. Likewise, in (28), the form of transitive suffix that means 'by heat' is -*isw* when the internal argument is animate, whereas it is -*is* when the internal argument is inanimate. This redundancy in the animacy marking of the internal argument is only apparent, however. In fact, one must conclude that it is only the theme sign that determines or "checks" the animacy of the internal argument. The transitive suffix ought not to serve the same function because there are transitive suffixes that fail to encode the animacy of the internal argument.

The transitive suffixes of Plains Cree are grouped into three different categories according to their morphological encoding of the animacy of the internal argument. First, falling into the biggest category are transitive suffixes that take an "extended" form when the internal argument is animate, but take a "unextended" form when it is inanimate (29).[18] The second biggest category is the mirror image of the first. That is, this category is made of transitive suffixes that take an extended form when the internal argument is inanimate, but take an unextended form when it is animate (30). Finally, a set of transitive suffixes that are morphologically invariant irrespective of the animacy of the internal argument constitutes the third, smallest category (31). None of these lists is exhaustive. Except for the manner-neutral pair in (30a), all the other pairs of transitive suffixes are specified for manner.

(29)   animate transitive suffix in the extended form

manner	animate	inanimate
a. 'by vision'	*-inaw*	*-in*
b. 'by hearing'	*-ihtaw*	*-iht*
c. 'by foot/body'	*-iskaw*	*-isk*
d. 'by tool'	*-ahw*	*-ah*
e. 'by stick'	*-atahw*	*-atah*
f. 'by heat'	*-isw*	*-is* (< PA **-es*)
g. 'by cutting edge'	*-isw*	*-is* (< PA **-esh*)

(30)   inanimate transitive suffix in the extended form

manner	animate	inanimate
a. ——	*-ih*	*-iht*
b. 'by speech'	*-im*	*-iht* ($m \rightarrow h /\_\_t$)
c. 'by mouth'	*-am*	*-aht* ($m \rightarrow h /\_\_t$)
d. 'by mind'	*-êyim*	*-êyiht* ($m \rightarrow h /\_\_t$)

(31)   animate and inanimate transitive suffixes identical

manner	animate	inanimate
a. 'by hand'	*-in*	*-in*
b. 'by pulling'	*-ipit*	*-ipit*

The problem lies in the third category (31), whose members are morphologically indifferent as to the animacy of the internal argument; *-in* 'by hand' and *-ipit* 'by pulling' are not informative at all about whether the internal argument is animate or inanimate. As such, one cannot claim that the transitive suffix categorically encodes the animacy of the internal argument.

Even when the transitive suffix fails to do so, the theme sign morphologically distinguishes the animate and inanimate internal arguments. This is what the pair of verbal complexes in (32) demonstrates. The internal argument in (32a) *maskwamiy* 'ice' is animate, whereas the internal argument in (32b) *pimiy* 'lard' is inanimate in Plains Cree.[19]

(32)   a.   ni-tihk-*in-â*-w   maskwamiy
             melt-by.hand-A.TH-3 ice
             'I melted the ice (by hand)'

         b.   ni-tihk-*in-ê*-n   pimiy
             1-melt-by.hand-I.TH-LCAL lard
   'I melted the lard (by hand)'

---

[18] As far as the pairs of transitive suffixes in (29) are concerned, the *-aw* extension occurs after a noncontinuant, whereas *-w* occurs elsewhere.

The verbal complex in (32a) contains the animate theme sign *-â*, whereas the verbal complex in (32b) contains the inanimate theme sign *-ê*, agreeing with the animacy of the internal argument—regardless of the morphologically invariant transitive suffix *-in* 'by hand.' Hence, it is the theme sign that categorically encodes the animacy of the internal argument.

If one wishes to respect the double-*v* schema (i.e. $[_{v2} [_{v1} \text{ROOT} + v_1] + v_2]$), and thus postulate the transitive suffix and the theme sign as v_1 and v_2, respectively, one must answer the following two issues pertaining to animacy agreement. First, how does the theme sign as v_2 categorically encode the animacy of the internal argument in Spec, $v\text{P}_1$? Second, why do the majority of transitive suffixes morphologically also encode the animacy of the internal argument? I propose the following to answer the above questions: the theme sign as v_2 agrees with the animacy of the internal argument via a Spec-Head configuration when the latter moves into Spec, $v\text{P}_2$; the animacy encoded on the transitive suffix results not from agreement with the internal argument via a Spec-Head configuration, but rather from "concord" with the theme sign, where "concord" is defined as agreement between heads. This proposal is schematically illustrated in (33).

(33) *animacy agreement and concord*

a.
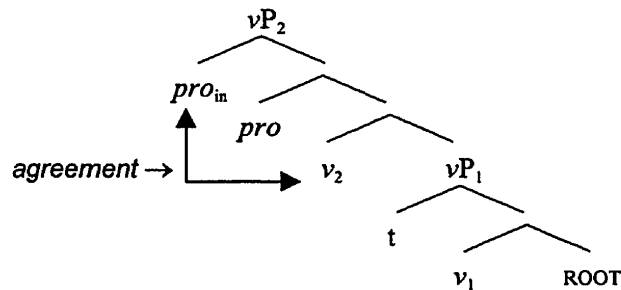
b.

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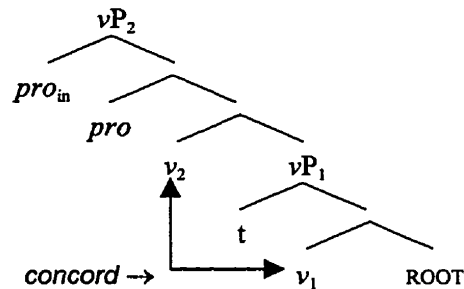
[19] The animate noun *maskwamiy* 'ice' takes *-ak* to make its plural form *maskwamiyak* 'cubes of ice.' The inanimate noun *pimiy* 'lard,' on the other hand, takes *-a* to make its plural form *pimiya* 'pieces of lard.'

The moved inanimate internal argument pro_{in} is assumed to land in the outer Spec, vP_2 (with the external argument pro in the inner Spec, vP_2) Nothing hinges on this assumption, however. In this position, pro_{in} enters into a Spec-Head configuration with v_2, and agrees with it in animacy. This is what double-headed arrow in (33a) indicates. Technically, a specifier position and Spec-Head agreement are defined as follows:

(34) *Specifier Position*
α is in a specifier position of β iff α is sister to a non-minimal projection of β.

(35) *Spec-Head Agreement*
Two syntactic objects α and β are in the Spec(ifier)-Head agreement relation with respect to a feature γ iff
a.   α is in a specifier position of β, and
b.   α and β share γ.

In (33a), in conformity with (34), the raised internal argument pro (α) is in a specifier position of v_2 (β) because pro is sister to a non-minimal projection of v_2. Further, in conformity with (35), pro (α) agrees with v_2 (β) in a Spec-Head agreement configuration with respect to animacy (γ). Pertaining to the second answer, "concord" takes place between v_2 and v_1, with v_2 being the trigger. This is what double-headed arrow in (33b) indicates. I suggest that this concord is locally implemented, and is defined as follows:

(36) *Concord*
Two heads α and β are in the concord relation with respect to a feature γ iff
a.   α, the trigger of concord, asymmetrically c-commands β,
b.   there is no head δ such that α asymmetrically c-commands δ, and δ asymmetrically c-commands β, and
c.   α and β share γ.

Satisfying this definition of concord, the two heads v_2 and v_1 in (33b) above are in the concord relation. This is because v_2 (α), the trigger of concord, asymmetrically c-commands v_1 (β), there is no head (δ) that v_2 (α) asymmetrically c-commands and in turn asymmetrically c-commands v_1 (β), and v_2 (α) and v_1 (β) share the animacy feature. Evidence in favour of the minimality constraint on concord in (36b) is given in §3.2.5, where the mapping between the morphology and the syntax of applicatives and ditransitives is examined. There, it is argued that a minimality constraint similar in its effect to (36b) is again operative with respect to animacy agreement.

3.2.2.3 Summary

The preceding subsections have defended a representation of the transitive verbal complex as a double-v schema (i.e. $[_{v2} [_{v1} \text{ROOT} + v_1] + v_2]$).

(37) a. $[_{vP}$ tihk-*am-ê*]-w   maskwamiy
            tie-by.mouth-A.TH-3 ice
            's/he melts the ice in her/his mouth'

  b.

'by mouth'
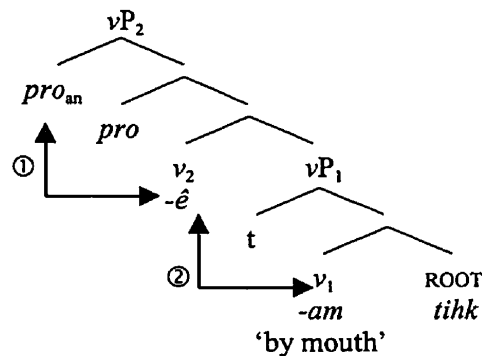
In my account, the internal argument in (37) is animate because the theme sign -*ê* as v_2 enters into a Spec-Head configuration and checks the animacy of the internal argument, after the internal argument moves into the outer Spec, vP_2 (①) The transitive suffix as v_1 meaning 'by mouth' surfaces in the animate form -*am*, not in the inanimate form -*aht*, because it enters into a concord relation, triggered by the theme sign -*ê* as v_2 (②). The transitive suffix -*am* 'by mouth' appropriately occupies v_1, conveying [+ADD TO] as the value of temporality τ.[20]

---

[20] Suppose that my postulation of the transitive suffix as v_1 is on the right track. Still remaining a mystery, however, is the fact that it is the transitive suffix, the very bottom v head in my phrase structure, that hosts the instrumental manner, which implies agentivity by default. In this regard, Mithun (1984) speculates that "instrumental affixes" such as manner-specified transitive suffixes in Plains Cree may have their origin as incorporated nouns. Since agentivity is characteristic of the external argument, the incorporated instrument must have been base-generated higher in the phrase structure to undergo noun incorporation in the syntax. Such an instrumental nominal incorporating into v_1, the syntactic position reserved for transitive suffixes in my analysis, is a patent violation of the C-Command Condition (Chomsky 1995), to the effect that syntactic objects move only upwards, not downwards, in the syntax.

3.2.3 Double-Layered *v*P II: Unergatives

Intransitives that are dynamic, namely unergatives and dynamic unaccusatives, take a double-layered *v*P structure. As such, they exhibit a discrepancy between syntax and morphology in that the number of *v*P-internal morphemes is one less than that the double-*v* schema (i.e. $[_{v2} [_{v1}$ ROOT $+ v_1] + v_2]$) predicts. Examples are given in (38).

(38)   a. $[_{vP}$ nip-â]-w   *unergative*
                 sleep-INTR-3
                 's/he sleeps'

        b. $[_{vP}$ pîko-payi]-w   *dynamic unaccusative*
                 break-INCH-0
                 'it breaks (by itself)'

Contrary to the expected three morphemes, the *v*Ps in these examples consist of only two morphemes, the root and the intransitive suffix (i.e. stem). This fact forces one of the two *v* heads (i.e. v_1 and v_2) of their double-layered *v*P structure to be phonologically null (although there is a possibility of filling the initially empty *v* head via later movement). Since the root takes the ROOT position, the question is in which *v* head the intransitive suffix is base-generated. As I cannot argue for any particular choice at this point, I stipulate (39) to serve the purpose.

(39)   The intransitive suffix is base-generated as the *v* in whose specifier position the "single" argument is introduced.

The "single" argument of unergatives is the external argument (i.e. Spec, *v*P$_2$), whereas that of dynamic unaccusatives is the internal argument (i.e. Spec, *v*P$_1$) in conformity with the Unaccusative Hypothesis (Perlmutter 1978, cf. Hall 1979). (39) then enables us to postulate the intransitive suffix -*â* in (40a) as v_2, and the inchoative suffix -*payi* in (38b) as v_1, respectively. I assume this contrast between the two types of dynamic intransitives in the ensuing sections and chapters.

In the remainder of this subsection, I examine two types of unergative and determine what kind of *v*P structure they are assigned.[21] What I call "simple unergatives" and "unergatives of movement"

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[21] The unergatives that are not discussed here are traditionally called "middle reflexives," characterised by the intransitive suffix -*o*.
(i)   a.   âc-im-*o*-w
               tell-by.speech-MDRF-3
               's/he tells a story, narrates'

constitute the topic of §3.2.3.1 and of §3.2.3.2, respectively. I argue that both types of unergatives project an internal argument of the [–SQA] type that contributes to their atelic nature, but they differ in that only v_2 is phonologically realised for simple unergatives, whereas both v_1 and v_2 are phonologically realised for unergatives of movement. §3.2.3.3 summarises the subsection by discussing a potential consequence of this proposal.

3.2.3.1 Simple Unergatives

The class of unergatives that are here called "simple unergatives" is represented by the verbal complexes in (40).

(40)   a.   [$_{vP}$ nip-*â*]-w
             sleep-INTR-3
             's/he sleeps'

          b.   [$_{vP}$ ap-*i*]-w
             sit-INTR-3
             's/he sits'

          c.   [$_{vP}$ pâhp-*i*]-w
             laugh-INTR-3
             's/he laughs'

          d.   [$_{vP}$ kimot-*i*]-w[22]
             steal-INTR-3
             's/he steals'

          e.   [$_{vP}$ atosk-*ê*]-w
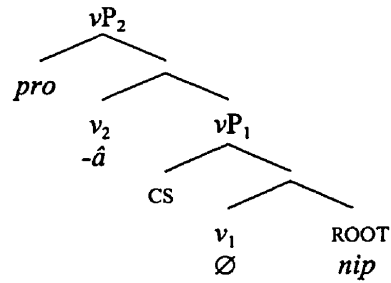   work-INTR-3
             's/he works'

The boldfaced intransitive suffixes -*â*, -*i*, and -*ê* occupy v_2 by (39). This leaves v_1 empty, or rather v_1 is occupied by a phonologically null constituent $\varnothing$. For illustration, *nipâw* 's/he sleeps' is structurally analysed in (41).

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    b.   nik-am-*o*-w
         sing-by.mouth-MDRF-3
         's/he sings'
The verbal complex in (ia) contains the animate transitive suffix -*im* 'by speech' and that in (ib) contains (what looks like) the animate transitive suffix -*am* 'by mouth.' The fact that they contain a transitive suffix justifies assignment of a double-layered vP to them.
[22] This unergative verb can be optionally used as a transitive verb.

(41)   *nipâw*   's/he sleeps'

```
                    vP₂
                  /      \
             pro          \
                    /\      \
                  v₂    vP₁
                  -â    /    \
                      CS      \
                          /      \
                        v₁      ROOT
                        ∅        nip
```

The external argument *pro* in Spec, vP_2 is the "single" argument of unergatives. But what is the internal argument in Spec, vP_1? I propose that the internal argument of simple unergatives is a phonologically-null constant (symbolised as CS). Semantically, the postulated phonologically-null constant is "meaningless" and gives rise to the effect of a [–SQA] nominal. This internal argument constant may be identified as a cognate object. Cognate objects are meaningless unless accompanied by an appropriate modifier. For instance, (42a) is ungrammatical because the cognate object *a sleep* lacks a modifier, whereas (42b) is grammatical, with the cognate object *a very peaceful sleep* containing the modifier *very peaceful*.

(42)   a.   *I slept *a sleep*
        b.   I slept *a very peaceful sleep*.

It may well be that availability of the phonologically-null meaningless cognate object constant blocks the occurrence of the phonologically-overt meaningless cognate object *a sleep* in (42a), rendering the example ill-formed. That is, the more economical the better, on the assumption that a phonologically-null syntactic object is more economical than a phonologically-overt one if they are identical in meaning.[23] It could also be conjectured that the meaninglessness of the invisible internal argument constant correlates with the phonological nullness of v_1. This remains sheer speculation at this point, however.

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[23] I leave it open how to formalise blocking by economy of this sort, cf. Chomsky 1995:Ch.2.

3.2.3.2 Unergatives of Movement

The other class of unergatives to be examined here may well be analysed as fitting the double-v schema (i.e. $[_{v2} [_{v1}$ ROOT $+ v_1] + v_2]$), a fact that lends support to my analysis of unergatives in terms of a double-layered vP structure. The three verbal complexes in (43) represent this class.

(43) a. $[_{vP}$ pim-*ohtê*]-w
           along-walk-3
           's/he walks along'

      b. $[_{vP}$ pim-*pahtâ*]-w
           along-run-3
           's/he runs along'

      c. $[_{vP}$ pim-*pihâ*]-w
           along-fly-3
           's/he flies along'

These verbal complexes share the same root *pim* 'along,' but they each denote a situation in which a particular mode of movement is involved, namely walking (43a), running (43b), and flying (43c). The source of the variation is the suffix that is conventionally taken as an intransitive suffix, -*ohtê* (43a), -*pahtâ* (43b), and -*pihâ* (43c). However, synchronic as well as diachronic evidence is available that allows us to analyse -*ohtê* 'walk' and -*pahtâ* 'run' as comprising the transitive suffixes -*oht* and -*paht* plus the intransitive suffixes -*ê* and -*â*, respectively (Denny 1984). There is no such evidence available for -*pihâ*, but I suggest a split of -*pihâ* into the transitive suffix -*pih* and the intransitive suffix -*â* by analogy.

Denny (1984:263) points out the existence of the verbal complex *nîkanohtawêw* 's/he walks ahead of her/him,' which contains -*ohtaw* as the transitive suffix. If -*oht* is a transitive suffix too, then one can obtain another transitive suffix pair whose animate member is an "extended" form with -*aw*, and whose inanimate member is an "unextended" form. Observe the parallel between -*iskaw* vs. -*isk* 'by foot, body,' on the one hand, and -*ohtaw* vs. -*oht* 'by walking,' on the other hand. Hence, it is not unreasonable to take -*oht* to be a transitive suffix that introduces the inanimate internal argument (and -*ohtaw* to be its animate counterpart).[24] As regards -*pahtâ*, Denny (1984:263) considers it to be the outcome of diachronic coalescence of the transitive suffix -*paht* and the intransitive suffix -*â* (< -*aw*), cf. Piggott 1979. The entry of verb stems that contain what can be taken as its animate counterpart -*pah*,

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[24] Denny (1984) himself rejects this as a synchronic analysis because of the rarity of the animate form.

such as *nakacipah* 'run away from' and *nâcipah* 'run to fetch, make a run for' found in Wolfart and Ahenakew 1998, suggests the correctness of this hypothesis. Again, from the viewpoint of morphological "extension" regarding transitive suffix pairs, one can draw a parallel between *-iht* vs. *-h* (no manner specification) and *-paht* vs. *-pah* 'by running.' Hence, it is feasible to revise (43) to (44), taking *-oht*, *-paht*, and *-pih* to be the manner-specified transitive suffixes meaning 'by walking,' 'by running,' and 'by flying,' respectively. Consequently, (44) conforms to the double-*v* schema (i.e. [$_{v2}$ [$_{v1}$ ROOT + v_1] + v_2]).

(44)   a.   [$_{vP}$ pim-***oht-ê***]-w
                   along-by.walking-INTR-3
                   's/he walks along'

           b.   [$_{vP}$ pim-***paht-â***]-w
                   along-by.running-INTR-3
                   's/he runs along'

           c.   [$_{vP}$ pim-***pih-â***]-w
                   along-by.flying-INTR-3
                   's/he flies along'

The verbal complex *pimohtêw* 's/he walks along' in (44a) is thus analysed as the root *pim* 'along' occupying ROOT, the transitive suffix *-oht* 'by walking' occupying v_1, and the intransitive suffix *-ê* occupying v_2.

(45)   *pimohtêw*   's/he walks along'
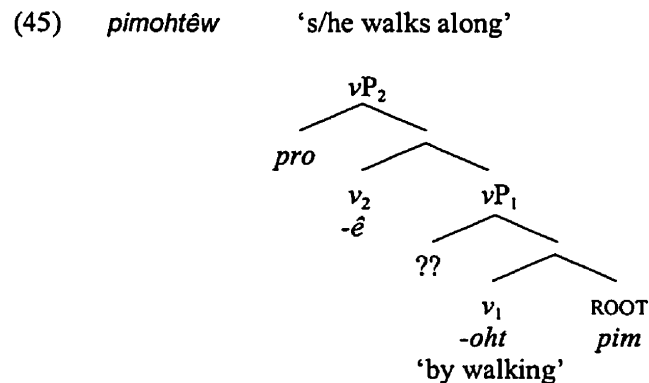
In (45), the external argument *pro* in Spec, vP_2 is the "single" argument of unergatives. What about the internal argument in Spec, vP_1? One could claim that along with that of simple unergatives, the internal argument of unergatives of movement is a phonologically-null meaningless cognate object constant. Again, this allows one to attribute the ill-formedness of (46a) to the choice of the phonologically-null

cognate object constant over its phonologically-overt counterpart made in light of this notion of economy.

(46)   a.   *I walked *a walk*

           b.   I walked *a weary walk*

Or rather, one could claim that in Plains Cree at least, the internal argument constant may be a "path" along which the external argument walks, runs, flies, and so on.[25] In this hypothesis, one could argue that the common root *pim* 'along' in (51) describes the nature of the "path" internal argument *pro*, and determine its unbounded nature (i.e. [–SQA]). Similarly, one could interpret the phonologically-null internal argument of the unergatives of movement in (47) as denoting a transportation-free path (47a), a crying path (47b), and a leaving path (47c).

(47)   a.   [$_{vP}$ most-*oht-ê*]-w
                on.foot-by.walking-INTR-3
                's/he walks (e.g. as opposed to using transportation)'

           b.   [$_{vP}$ mâto-*paht-â*]-w[26]
                cry-by.running-INTR-3
                's/he cries running'

           c.   [$_{vP}$ sipwê-*pih-â*]-w
                leave-by.flying-INTR-3
                's/he flies off'

On the one hand, the non-delimiting roots *most* 'on foot' and *mâto* 'cry' give rise to an unbounded path (i.e. [–SQA]). On the other hand, the delimiting root *sipwê* 'leave' gives rise to a bounded path (i.e. [+SQA]); the initial point of the path is delimited (i.e. the point of departure).[27]

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[25] In Mandarin Chinese (Hsu-tu Chen, personal communication), the verb 'walk' is a transitive verb whose internal argument is a dummy object that literally means 'path.'

[26] The "root" *mâto* 'cry' is a reanalysis of an unergative verb stem *mâto* '*x* cries' with *mât* 'cry' as the root followed by the intransitive suffix *-o*. This is an instance of "secondary derivation" in Algonquianist terms.

[27] Another root that gives rise to a bounded path (i.e. [+SQA]) is *takw* 'arrive.' The net result of the relevant [+SQA] effect is to derive a telic unergative of movement. Thus, in this analysis, the canonical unaccusative verb stem *takopayi* '*x* arrive' in (i) may well be parsed as an unergative verb stem with the bounded path as its internal argument.

(i)   [$_{vP}$ tako-payi]-w
       arrive-INCH-3
       's/he arrives (by transportation)'

In sum, the "path" analysis of the internal argument of unergatives of movement justifies the fact that unergatives of movement have a morphological realisation characteristically different from simple unergatives. In contrast, the "cognate object" analysis, applying both to simple unergatives and to unergatives of movement, fails to capture the observed morphological split. As far as Plains Cree is concerned, therefore, I conclude that the phonologically-null internal argument denotes a "path," rather than a meaningless "cognate object," contrary to simple unergatives.

3.2.3.3 Summary

Simple unergatives are those that have the intransitive suffix as v_2 and a phonologically-null v_1. Their invisible or inaudible internal argument is a meaningless cognate object constant, which is quantificationally [−SQA]. Unergatives of movement are verbs whose two v heads are both pronounced; v_2 is occupied by the intransitive suffix, whereas v_1 is occupied by what could be interpreted as the manner-specified transitive suffix. Their phonologically-null internal argument is most appropriately a path, which varies in terms of boundedness (i.e. [±SQA]).

As briefly discussed above, the proposed analysis of the internal argument of unergatives as a meaningless cognate object has a consequence pertaining to the cognate object construction in English, which is exemplified by the sentences in (48), adapted from Massam 1990.

(48) a. Mary laughed *a hearty laugh*
      b. John ran *an energetic run* to the store

Massam (1990) argues that the cognate object, such as *a hearty laugh* and *an energetic run*, occupies the syntactic object position (i.e. the internal argument position). This is demonstrated, for instance, by the fact that in English, the cognate object must be adjacent to the verb on par with the non-cognate object, cf. Stowell 1981.

(49) a. Let Ben run (*quickly) a little run
      b. Ben ate (*quickly) a sandwich   (Massam 1990:166)

The cognate object *a little run* cannot be separated from the verb *run* by the adverb *quickly*, just as the non-cognate object *a sandwich* cannot be separated from the verb *ate* by the same adverb. In Hale and Keyser's (1993) noun incorporation analysis of unergatives, the trace of the incorporated cognate object

is left behind in the internal argument position. Accordingly, unless something stipulative is said, the cognate object cannot occupy the internal argument position. In contrast, my analysis of the internal argument of unergatives as phonologically-null meaningless cognate object constant needs no stipulation. It allows for the occurrence of the cognate object in the internal position as long as it is meaningful; if meaningless, consideration of "economy" kicks in and selects the invisible or inaudible meaningless cognate object constant over the phonologically-overt counterpart.[28, 29]

3.2.4 Double-Layered vP III: Dynamic Unaccusatives

Dynamic unaccusatives are also analysed in terms of a double-layered vP structure by hypothesis. However, along with simple unergatives, they deviate from the double-v verb schema (i.e. $[_{v2} [_{v1} \text{ROOT} + v_1] + v_2]$), as the verbal complexes in (50) show.

(50) a. $[_{vP}$ yôhtê-*payi*]-w iskwâhtêm
open-INCH-0   door
'a/the door opens'

b. $[_{vP}$ pîko-*payi*]-w wâpamon
break-INCH-0   mirror
'a/the mirror breaks'

c. $[_{vP}$ kosko-*payi*]-w
wake.up-INCH-3
's/he wakes up'

d. $[_{vP}$ tiht-*ipayi*]-w misatim
roll-INCH-3   horse
'a/the horse tumbles over'

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[28] Cognate objects are considered available only with unergatives. The verb *die* is usually regarded as an unaccusative verb because a sentence containing the verb (with the bounded single argument) is telic, and its single object is not agentive. Nevertheless, the verb can take a cognate object.
(i) John died *a painful death*
I regard *die* as an unergative verb whose "meaningless" cognate object is a [+SQA] nominal, cf. footnote 27.
[29] I am unaware at this point of the availability of cognate objects in Plains Cree. Obviously, the relvant data need to be checked.
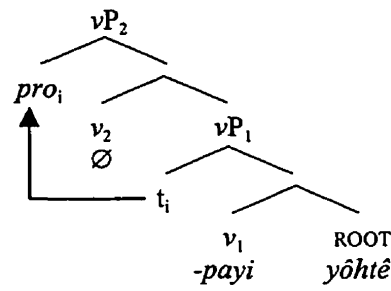
The vP portion of these verbal complexes consists of two morphemes, namely the root and the inchoative suffix -*payi*.[30] By definition, the root occupies the ROOT position. The choice between v_1 and v_2 as the locus of the inchoative suffix -*payi* is subject to (39), which is repeated here as (51).

(51)　The intransitive suffix is base-generated as the v in whose specifier position the "single" argument is introduced.

The "single" argument of dynamic unaccusatives is the "measuring-out" argument (Tenny 1987, 1994). The measuring-out function is a property of the internal argument, and thus is introduced in Spec, vP$_1$. (51) designates v_1 the locus of the inchoative suffix -*payi*. Consequently, the verbal complex *yôhtêpayiw* 'it opens' in (50a) is represented as (52), for instance.

(52)　*yôhtêpayiw*　　'it opens'

```
              vP₂
            /     \
        pro_i    /    \
          ▲    v₂      vP₁
          |    ∅      /    \
          |____ t_i  /    \
                    v₁     ROOT
                   -payi   yôhtê
```

The root *yôhtê* 'open' and the inchoative suffix -*payi* occupy ROOT and v_1, respectively, with v_2 filled with a phonologically-null syntactic object ∅.

　　　Notice that another proposal is already incorporated in this double-layered vP structure. This is the movement of the internal argument from Spec, vP$_1$ to Spec, vP$_2$. This movement is triggered by the "energy source" theta-role feature on v_2. The internal argument of dynamic unaccusatives, however, has already checked the theta-role feature on v_1. Thus, the internal argument of dynamic unaccusatives is assigned two theta-roles, the "measuring out" (Tenny 1987, 1994) role in Spec, vP$_1$ and the "energy source" role in Spec, vP$_2$, cf. §2.4.

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[30] With the inanimate "single" argument, the inchoative suffix -*payi* appears to alternate with -*payin* rather freely. I have no clue about what governs this alternation and how it is related to the present proposal regarding dynamic unaccusatives. See Denny 1989:fn.6 for an interpretation of the alternation.

(53) *dual theta-role assignment in dynamic unaccusatives*

```
                    vP₂
                   /    \
            pro_i       /    \
             ↑       v₂      vP₁
energy source ⌐→ {θ}✓   /    \
             |        t_i      /    \
             ⌐_____     v₁       ROOT
                 measuring out → {θ}✓
```
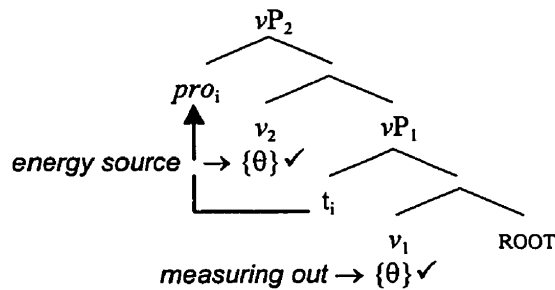
In my checking theory of theta-role assignment, this dual theta-role assignment is a possible operation, in conformity with the relativised Theta Criterion (§1.5.2).

(54) *Relativised Theta Criterion*
      Each *v* bears one and only one theta-role feature, and each theta-role feature is borne by one and only one *v*.

I propose that this "dual" characterisation of the "single" argument is what characterises dynamic unaccusatives in Plains Cree. Consequences of the movement analysis proposed here will be discussed in Chapters 4 and 5. A piece of evidence for what appears to be a "reflexivisation"—i.e. identification of the measuring-out with the energy source argument (which derives the surface intransitivity of dynamic unaccusatives)—is presented in the appendix chapter, Chapter 7.

3.2.5 Triple-Layered *v*P: Applicatives and Ditransitives

Triple-layered *v*P structures are assigned to applicatives and ditransitives. Therefore, these types of verbs are subject to the triple-*v* schema (i.e. [$_{v3}$ [$_{v2}$ [$_{v1}$ ROOT + v_1] + v_2] + v_3]); there ought to be four *v*P-internal morphemes within the verbal complex. This prediction is borne out with applicatives, as illustrated by (55a) and (56a).[31]

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[31] I do not treat applicatives based on intransitives (or rather unergatives), which are exemplified by (ib).
(i) a. ni-pîkiskw-â-n
          1-speak-INTR-LCAL
          'I speak'
     b. ni-pîkiskw-ê-*st-amaw*-â-w
          1-speak-INTR-TRAN-APPL-A.TH-3
          'I speak for her/him'
In addition to the applicative suffix *-amaw*, intransitive-based applicatives take the manner-neutral transitive suffix *-st*. I leave an attempt to analyse intransitive-based applicatives for future research.

(55) a. ni-[$_{vP}$ yôhtê-n-*amaw*-â]-w   Karen iskwâhtêm   *applicative*
        1-open-by.hand-APPL-A.TH-3 K.   door
        'I opened a/the door for Karen'

     b. ni-[$_{vP}$ yôhtê-n-ê]-n   iskwâhtêm   *transitive*
        1-open-by.hand-I.TH-LCAL door
        'I opened the door'

(56) a. ni-[$_{vP}$ man-is-*amaw*-â]-w   Karen sîsîp-a[32]   *applicative*
        1-cut-by.edge-APPL-A.TH-3 K.   duck-OBV
        'I cut a/the duck(s) for Karen'

     b. ni-[$_{vP}$ man-isw-â]-w   sîsîp   *transitive*
        1-cut-by.edge-A.TH-3 duck
        'I cut a/the duck'

In both (a) examples, from left to right, the four vP-internal morphemes of the applicative verbal complex are the root, the transitive suffix, the applicative suffix -*amaw*, and the animate theme sign. Thus, the vP portion of the applicative verbal complex *nimanisamawâw* 'I cut a/the duck(s)' (55a), for instance, is represented as (57).

(57) *nimanisamawâw*   'I cut a/the duck(s) for her/him'
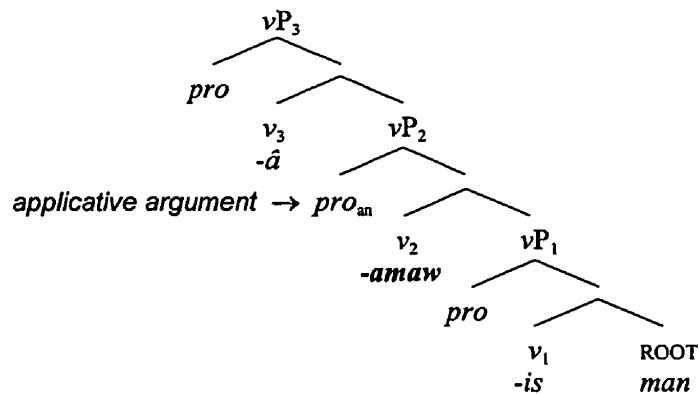
The root *man* 'cut' occupies the ROOT position. The manner-specified transitive suffix -*is* 'by cutting edge' and the animate theme sign -*â* are sitting in v_1 and v_3, respectively. Sandwiched between these two v heads is v_2, which is designated as the locus of the applicative suffix -*amaw*. Because the semantic difference between the applicative verbal complex and its transitive counterpart is the presence/absence

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[32] In Plains Cree, there is no number distinction with obviative animate nouns.

of the applicative argument, and the morphological difference between them is the presence/absence of the applicative morpheme *-amaw*, I assume that the applicative suffix *-amaw* as v_2 introduces is the applicative argument in Spec, vP_2.

If we accept that the applicative argument is introduced by v_2, the triple-layered vP configuration in (57) is akin to what Ura (2000) proposes for the Double Object Construction (DOC) in English, cf. Larson 1988. The structural parallelism between Plains Cree applicatives and the English DOC is supported by the fact that the applicative argument must be animate in Plains Cree and Algonquian in general (perhaps unless an inanimate argument is figuratively construed as animate), cf. Rhodes 1976. The same holds true of English DOC.

(58)   a.   Bill sent a package to Tom/London
        b.   Bill sent Tom/*London a package   (Levin 1993:46)

In the "dative alignment" (58a), the goal argument can be animate (e.g. *Tom*) or inanimate (e.g. *London*). In the DOC alignment (58b), however, the applicative argument must be animate.

The prototypical ditransitive meaning 'give,' however, is expressed without the transitive suffix and the applicative suffix in Plains Cree, doubly violating the triple-v schema (i.e. $[_{v3} [_{v2} [_{v1} \text{ROOT} + v_1] + v_2] + v_3]$).

(59)   ni-$[_{vP}$ miy-â]-w masinahikan
        1-give-A.TH-3   book
        'I give a/the book to her/him'

The vP-internal morphemes are the root *miy* 'give' and the animate theme sign *-â*, period. By analogy with the applicative vP, these morphemes are ROOT and v_3, respectively. Accordingly, the ditransitive verbal complex in (59) is represented as (60) with v_1 and v_2 left phonologically null.

(60)   *nimiyâw*   'I give *y* to her/him'

```
                    vP₃
                  /     \
            pro        /     \
                     v₃       vP₂
                     -â      /    \
                        pro       /    \
                               v₂       vP₁
                               Ø       /    \
    applicative argument → proₐₙ      /    \
                                    v₁      ROOT
                                    Ø       miy
```
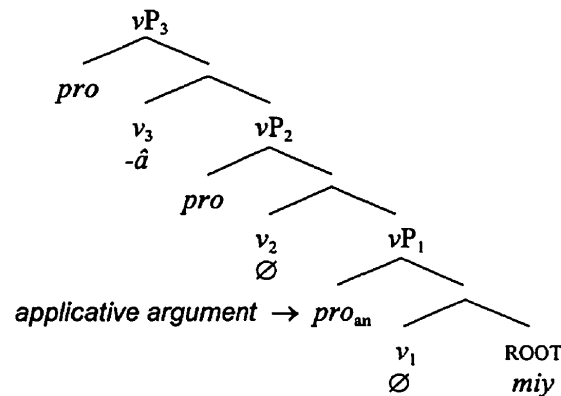
In this structure, the applicative argument is postulated in Spec, vP_1, rather than Spec, vP_2. That is, I am proposing that the ditransitive *miy* '*x* gives *y* to her/him' takes the dative alignment, rather than the DOC alignment. This proposal fails to captalise on the fact that the applicative argument of the verb is always animate, a fact that is suggestive of the DOC alignment. Consequently, it renders the animacy-checking mechanism to be explicated below inapplicable to the verb. Nevertheless, I will argue in Chapter 4 that the postulation of the applicative argument in Spec, vP_1—or rather, the theme argument in Spec, vP_2— gains support from the behaviour of noun incorporation applied to verbal complexes headed by *miy* '*x* gives *y* to her/him.'[33]

Before leaving this subsection, let us return to the issue of the animacy "concord" that is claimed to hold between the theme sign as v_2 and the transitive suffix as v_1 with transitives. In §3.2.2.2, I have proposed that the theme sign not only agrees with the internal argument in animacy (by Spec-Head agreement), but also determines the form of the transitive suffix (by "concord"). To recap, consider the verbal complexes in (61).

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[33] The proposed analyses of the ditransitive and applicative constructions of Plains Cree are rather different from Baker's (1996) analyses of the ditransitive and applicative constructions of Iroquoian languages. In his analysis (Baker 1996:§9.3), the applicative suffix is either verbal or adpositional. If verbal, the applicative morpheme itself is a three-place predicate that takes the base verb as one of its arguments. If adpositional, it first introduces the applicative argument and later incorporates into the verb. In either case, the structure of these applicative constructions diverges greatly from the triple-layered *v*P structures postulated here.

(61) a.   ni-[$_{vP}$ man-*is-ê*]-n   wiyâs
           1-cut-by.edge-I.TH-LCAL meat
           'I cut (the) meat'

      b.   ni-[$_{vP}$ man-*isw-â*]-w   sîsîp
           1-cut-by.edge-A.TH-3 duck
           'I cut a/the duck'

      c.   *ni-[$_{vP}$ man-*is-â*]-w   sîsîp
           1-cut-by.edge-A.TH-3 duck

In (61a), the theme sign -*ê* as v_2 specifies the internal argument as inanimate, and chooses the inanimate form -*is* of the transitive suffix as v_1 whose approximate meaning is 'by cutting edge.' Likewise, in (61b), the theme sign -*â* as v_2 specifies the internal argument as animate, and chooses the animate form -*isw* of the same transitive suffix as v_1. The verbal complex in (61c) is ill-formed because the theme sign and the transitive suffix fail to show concord; the theme sign -*â* requires the animate form, but the transitive suffix takes the inanimate form -*is*.

The definition of concord, repeated in (62).

(62)   *Concord*
       Two heads α and β are in the concord relation with respect to a feature γ iff
       a. α, the trigger of concord, asymmetrically c-commands β,
       b.   there is no head δ such that α asymmetrically c-commands δ, and δ asymmetrically
             c-commands β, and
       c. α and β share γ.

According to (62), for the theme sign (α) and the transitive suffix (β) to enter into the concord relation, there cannot be a head (δ) that is asymmetrically c-commanded by the theme sign (α), and asymmetrically c-commands the transitive suffix (β). This is clause (b) of the definition. In applicatives, the theme sign is v_3 and the transitive suffix is v_1, and the applicative suffix -*amaw* (v_2) satisfies the specification of the head δ in the clause (62b). Thus, if concord applies only locally in the way constrained by the clause (62b), then it is expected that there will be no concord observable between the theme sign and the transitive suffix in applicatives. This prediction is borne out:

(63)   a.   ni-[$_{vP}$ man-*is-amaw*-â]-w   Karen wiyâs
            1-cut-by.edge-APPL-A.TH-3 K.   meat
            'I cut (the) meat for Karen'

       b.   ni-[$_{vP}$ man-*is-amaw*-â]-w   Karen sîsîp-a
            1-cut-by.edge-APPL-A.TH-3 K.   duck-OBV
            'I cut the duck(s) for Karen'

       c.   *ni-[$_{vP}$ man-*isw-amaw*-â]-w Karen sîsîp-a
            1-cut-by.edge-APPL-A.TH-3 K.   duck-OBV

Here, the theme sign occupying v_3 is -*â*, which requires the *v* head it locally c-commands to be in the animate form. As (63a) and (63b) demonstrate, regardless of the animacy of the internal argument—*wiyâs* 'meat' is inanimate, whereas *sîsîpa* '(obviative) duck(s)' is animate—, the transitive suffix 'by cutting edge' takes the inanimate form -*is*. If there were concord, then the animate form -*isw* would be chosen, and (63c) would be well-formed. This is not the case, however. (63c) has the following *v*P structure:

(64)   *nimaniswamawâw*
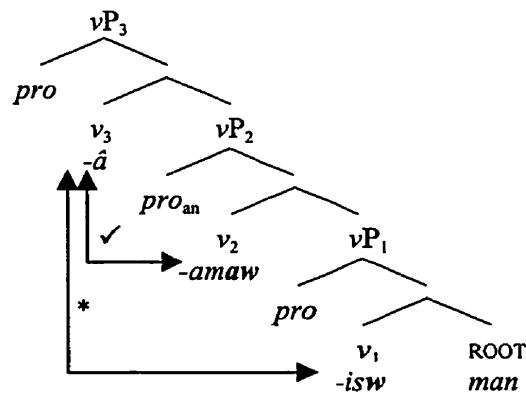
The animate theme sign -*â* as v_3 cannot choose the animate transitive suffix -*isw* 'by cutting edge' as v_1 because the applicative suffix -*amaw* as v_2 intervenes between them, blocking their concord in conformity with (62b). (That is, the animate theme sign -*â* as v_3 asymmetrically c-commands the applicative suffix -*amaw* as v_2, and the second asymmetrically c-commands the animate transitive suffix -*isw* 'by cutting edge' as v_1.) If there is concord in (64) at all, it ought to be between the animate theme sign -*â* as v_3 and the applicative suffix -*amaw* as v_2. Notice the applicative suffix -*amaw* may well be morphologically considered the animate counterpart of one of the inanimate theme signs -*am*, replicating a pattern of the morphological animate vs. inanimate contrast attested in transitive suffix pairs, say,

-iskaw and *-isk* 'by foot or body,' cf. Wolfart 1973:75. The inanimate form *-is* of the relevant transitive suffix 'by cutting edge' in the grammatical verbal complexes in (63a) and (63b) above must therefore be considered its default, concord-free form.[34]

A minimality constraint is also at work in the animacy agreement of a *pro* argument with the theme sign. As discussed above, in the applicative construction, the applicative argument must be animate, whereas the internal argument can be animate and inanimate. In my agreement terminology, this means that the animate theme sign as v_3 agrees with the applicative argument in Spec, vP_2, but not with the internal argument in Spec, vP_1 with respect to animacy. I have proposed in §3.2.2.2 that the animacy agreement takes place when a *pro* argument moves into the specifier of the *v* head that the theme sign occupies. Now, the above generalisation about the animacy of the applicative and internal arguments makes sense if the theme sign as v_3 "attracts" the closest argument *pro* to its specifier position for the purpose of agreement. The notion of "closest argument" is defined in (65).

(65)   *Closest Argument*
        α is the closest argument for a head β iff
        a.   β asymmetrically c-commands α, and
        b.   there is no argument γ such that β asymmetrically c-commands γ, and γ asymmetrically c-commands α.

Given this definition, the applicative argument *pro*$_{an}$ in Spec, vP_2 is the closest argument for the animate theme sign *-â* as v_3 because there is no argument that satisfies the clause (65b). In contrast, the internal argument *pro* in Spec, vP_1 is not the closest argument for the animate theme sign as v_3. This is because the applicative argument *pro*$_{an}$ in Spec, vP_2 plays the role of γ of (65b), as it is asymmetrically c-commanded by the animate theme sign *-â* as v_3 (β), and asymmetrically c-commands the internal argument *pro* in Spec, vP_1. Consequently, it is the applicative argument *pro*$_{an}$, not the internal argument, that is attracted by and enters into the agreement relation with the animate theme sign *-â*.

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[34]This view of animacy neutralisation of the transitive suffix does without the morphological operation called "impoverishment" (i.e. feature deletion) adopted in the theory of "Distributed Morphology" (Halle and Marantz 1993).

(66)   *animacy agreement in applicatives*

vP_3
pro
v_3
✓ *-â*
pro$_{an}$
v_2
* *-amaw*
pro
v_1 ROOT
-is   *man*
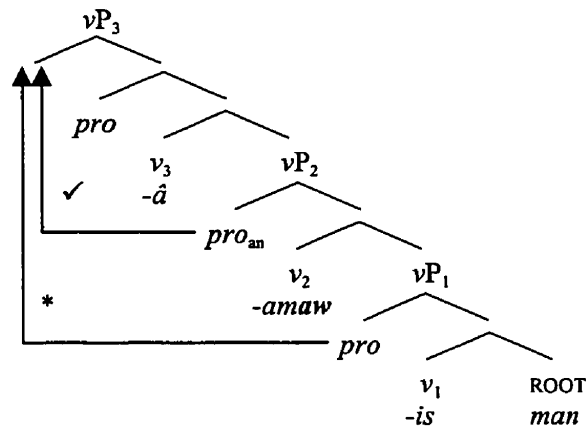
The internal argument *pro* stays in situ, and fails to be attracted by and agree with the animate theme sign *-â* as v_3. The net result is the absence of an animacy restriction on the internal argument *pro* of the applicative construction.[35]

In sum, I have demonstrated that minimality (or more generally, locality), which is defined in terms of asymmetric c-command, constrains both animacy concord and agreement. The minimality effects observed in the applicative construction could not be as easily characterised as is done here if the applicative suffix *-amaw* were not postulated as v_2. In this syntactic position, the applicative suffix *-amaw* is asymmetrically c-commanded by the theme sign as v_3, and in turn asymmetrically c-commands the transitive suffix as v_1, giving rise to the intervention effect. Further, the applicative suffix *-amaw* as v_2 indirectly derives the closeness effect that the applicative argument induces, as the first introduces the second in Spec, vP_2. Ultimately, these are the results of the morpheme alignment that mirrors the triple-v schema (i.e. [$_{v3}$ [$_{v2}$ [$_{v1}$ ROOT + v_1] + v_2] + v_3]) proposed for applicatives (and ditransitives).

3.2.6 Summary

In the preceding subsections, I have presented a structural analysis of five verb types in Plains Cree, namely static unaccusatives, transitives, unergatives, dynamic unaccusatives, and

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[35] To complete the picture, it is necessary to assume that the applicative suffix *-amaw* as v_2 does not trigger concord with v_1 nor does it check the animacy of the internal argument in Spec, vP_1. As regards the first property, however, one can alternatively say that it triggers inanimate concord with v_1 (due perhaps to the *-am* portion of its morphology).

applicatives/ditransitives. In distributing the vP-internal morphemes, I have been guided by the three complex verb schemata in (67), derivatives of the three vP structures.

(67) a.   *single v*: $[_{v1} \text{ROOT} + v_1]$
      b.   *double v*: $[_{v2} [_{v1} \text{ROOT} + v_1] + v_2]$
      c.   *triple v*: $[_{v3} [_{v2} [_{v1} \text{ROOT} + v_1] + v_2] + v_3]$

Three verb types—static unaccusatives, transitives, and applicatives/ditransitives—fit well with the single-v schema, the double-v schema, and the triple-v schema, respectively. Two dynamic intransitives––unergatives and dynamic unaccusatives—have fewer vP-internal morphemes (i.e. 2) than the double-v schema predicts (i.e. 3), as (68) exemplifies.

(68) a. $[_{vP} \text{nip-â}]\text{-w}$ *unergative*
           sleep-INTR-3
           's/he sleeps'

      b. $[_{vP} \text{pîko-payi}]\text{-w}$ *dynamic unaccusative*
           break-INCH-0
           'it breaks'

The stipulation in (69), allows us to determine the syntactic position of their intransitive suffixes.

(69)   The intransitive suffix is base-generated as the v in whose specifier position the "single" argument is introduced.

In line with the Unaccusative Hypothesis (Perlmutter 1978, cf. Hall 1979), the single argument of unergatives is introduced as the external argument, and thus their intransitive suffix is designated as v_2. Likewise, the single argument of dynamic unaccusatives is introduced as the internal argument, and thus the inchoative suffix is designated as v_1. A remaining question, of course, is why the language contains invisible or inaudible vs in the first place.

I have made a few additional proposals. First, unergatives have a phonologically-null internal argument, which is to be interpreted either as a meaningless cognate object constant or as a path argument *pro*. Second, dynamic unaccusatives involve the movement of the internal argument from Spec, vP$_1$ to Spec, vP$_2$ driven by the theta-role feature on v_2. These mechanisms yield the surface intransivity of the two types of dynamic intransitives. Third, animacy agreement and concord are involved in transitives and applicatives/ditransitives.

3.3 The Demise of Morphological Templates

Traditionally, the internal structure of verbal complexes, let alone verb stems, has not been analysed in syntactic terms in Plains Cree, or in other Algonquian languages. Rather, it has long been analysed in terms of a "morphological template" (Bloomfield 1946, Goddard 1979, Wolfart 1973, Rhodes 1976, Nichols 1980, Dahlstrom 1991, Valentine 1994, among many others). My syntactic treatment of verb stems, therefore, runs counter to this tradition, consistent with other recent proposals in the Algonquian literature (Blain 1997, Déchaine 1999, among others). This subsection demonstrates that syntax in principle has the same empirical coverage as a morphological template does. This renders morphological templates superfluous in the analysis of Plains Cree verbal complexes (and therefore, verb stems), as a syntactic treatment of verbal complexes has been demonstrated to be independently necessary in Plains Cree on the basis of relative roots (see §3.1.1).

A morphological template is a matrix that consists of a certain number of slots into which a set of affixes and a root are to be inserted. For instance, Dahlstrom's (1991:24) morphological template proposed for Plains Cree verbal complexes contains one prefix and eight suffix positions around the verb stem. In terms of Dahlstrom's template, the verbal complex *nisâkihâwak* 'I love them' in (70a) is analysed as in (70b).

(70)   a.   *ni*-[sâk-íh]-*â-w-ak*
                1-love-TRAN-A.TH-3-3PL
                'I love them'

    b. *the templatic analysis of (70a) à la Dahlstrom 1991*

        [$_V$ [*ni-*] [$_{STEM}$ *sâkih*] [$_1$ __] [$_2$ *-â*] [$_3$ __] [$_4$ __] [$_5$ *-w*] [$_6$ __] [$_7$ *-ak*] [$_8$ __]]

The bracketed verb stem *sâkih* '*x* loves *y* (animate)' in (70a) is made of the root *sâk* 'love' and the transitive suffix *-ih*, but their composition is not structurally analysed in (70b). I will show what the Plains Cree stem-template looks like below in (71). The first person prefix *ni-* occupies the position preceding the stem.[36] Among the three boldfaced suffixes in (70a), the animate theme sign *-â* occurs closest to the stem and is assigned to position 2. Then comes the suffix *-w* in position 5, indicating the

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[36] In Algonquian, a verbal complex can have more than one "preverb," a morpheme that precedes the verb stem (or root). Unless Dahlstrom (1991) treats them as part of the verb stem, her template disallows having multiple preverbs in a verbal complex, contrary to fact.

involvement of a local (i.e. first or second) singular and a third person referent in the transitive relation. Finally, in position 7, the second farthest of all the suffix positions from the verb root, the suffix -ak occurs which signals the plurality of the third person. The morphological template (70b) says nothing about stem-internal morphological structure. The traditional understanding, however, is that a stem consists obligatorily of both a root and a transitivity suffix, and optionally of a "medial," which appears between the root and the transitivity suffix (71a).[37]

(71)   a.   [$_{STEM}$ [root] ([medial]) [transitivity suffix]]
           b.   [$_{STEM}$ [sâk] [-ih]]

(71b) illustrates that the verb stem sâkih 'x loves y (animate)' in (70a) is composed of the root sâk 'love,' the transitive suffix -ih, and no medial.

Morphological templates are designed to obtain the following two outcomes: first, affix order within the verbal complex; and second, cooccurrence restrictions between affixes assigned a single slot (i.e. competition among suffixes for a single slot). As will be demonstrated immediately below, these outcomes are also obtainable in the syntax. First, capturing the linear order of syntactic objects is one of the primary goals of syntax. If affixes are syntactic objects, then their linear ordering is syntactically determined, for instance, in accordance with their categorial type. To illustrate, consider English verbal projections, in which I(nfl) asymmetrically c-commands V, as in (72),

(72)

IP
   ...
     I   VP
         ...
           V   ...
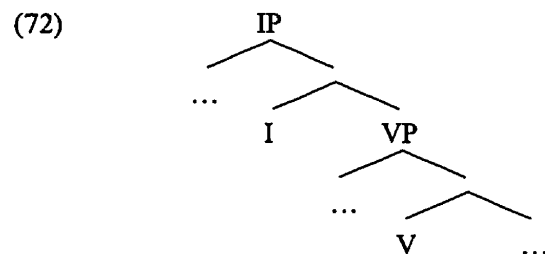
Infl linearly precedes V on the surface, all things being equal. This, possibly among many other reasons, explains why (73a), in which the verb park is followed by the infinitival Infl to, is bad, but (73b), in which the opposite order obtains, is fine.

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[37] Just as the "medial" is so named because of its position relative to the other two stem-internal morphemes, the root and the transitivity suffix are conventionally called the "initial" and the "final," respectively.

(73) a.   *Claudia wanted [$_V$ *park*] [$_I$ *to*] her Trabant near the office
       b.   Claudia wanted [$_I$ *to*] [$_V$ *park*] her Trabant near the office

Second, if affixes are syntactic objects, the relevant cooccurrence restriction is interpreted either as syntactic objects competing for a single syntactic position or as a kind of "selectional restriction" holding between categories. The first is the reason why the auxiliaries *can* and *must* fail to cooccur with one another in (74); the Infl position can accommodate one and only one auxiliary verb.

(74)   *Claudia [$_I$ *can must*] park her Trabant near the office

Selectional restriction is considered to be at work in (75a). The demonstrative complementiser *that* is not appropriate for the infinitival Infl *to*, but the prepositional complementiser *for* is acceptable (75b).

(75) a.   *It is illegal [$_C$ *that*] anyone [$_I$ *to*] park a car near the office
       b.   It is illegal [$_C$ *for*] anyone [$_I$ *to*] park a car near the office

Thus, neither linear order nor cooccurrence restrictions provide crucial support for a morphological template.

In fact, a syntactic approach fares better than a templatic approach. To demonstrate this, recall from §xxx, that the proposed syntactic approach can explain (a) the absence of concord between the theme sign and the transitive suffix, and (b) the absence of the animacy restriction on the internal argument, as opposed to its presence on the applicative argument. Recall that these two phenomena are characteristic of the applicative construction, as shown in (76).

(76) a.   ni-[$_{vP}$ man-*is-amaw*]-*â*-w   Karen sîsîp-a
           1-cut-by.edge-APPL-A.TH-3 K.   duck-OBV
           'I cut the duck(s) for Karen'

       b.   ni-[$_{vP}$ man-*is-amaw*]-*â*-w   Karen wiyâs
           1-cut-by.edge-APPL-A.TH-3 K.   meat
           'I cut (the) meat for Karen'

In both applicative verbal complexes, the theme sign is the animate theme sign -*â*, and the transitive suffix meaning 'by cutting edge' takes the inanimate form -*is*. The absence of concord between the theme sign and the transitive suffix is shown by the ill-formedness of the verbal complex in (77a), where the relevant transitive suffix takes the animate form -*isw*, despite the presence of the animate theme sign -*â*.

(77) a. *ni-[_{vP} man-*isw-amaw-â*]-w Karen sîsîp-a
          1-cut-by.edge-APPL-A.TH-3   K.   duck-OBV

      b. ni-[_{vP} man-*isw-â*]-w   sîsîp
          1-cut-by.edge-A.TH-3 duck
          'I cut a/the duck'

Unlike in the applicative context, the transitive context requires concord; the relevant transitive suffix must be -*isw*, not -*is*, given the animate theme sign -*â* (77b). Second, note the absence of the animacy restriction on the internal argument in (76) above, despite the animate theme sign -*â*; the internal argument can be either animate (e.g. *sîsîp* 'duck') or inanimate (e.g. *wiyâs* 'meat') in the applicative context. What the animate theme sign -*â* agrees with is the applicative argument, which must always be animate. Thus, there is an animacy restriction imposed on the applicative argument.

Now, let us examine whether a templatic approach can handle these phenomena. First, consider the absence of concord between the theme sign and the transitive suffix. A templatic approach can exaplain this phenomenon by means of the notion of adjacency plus a few auxiliary assumptions. To see how it works, the applicative sentences under discussion are repeated in (78). The relevant portion of the verbal complexes is shown using Dahlstrom's (1991) templatic representation.

(78) a. ni-[_{STEM} man-*is-amaw*]-[₂ *â*]-w Karen wiyâs
          1-cut-by.edge-APPL-A.TH-3   K.   meat
          'I cut (the) meat for Karen'

      b. ni-[_{STEM} man-*is-amaw*]-[₂ *â*]-w Karen sîsîp-a
          1-cut-by.edge-APPL-A.TH-3   K.   duck-OBV
          'I cut the duck(s) for Karen'

Given these representation, the absence of the animacy concord between the theme sign and the transitive suffix is captured by referring to the fact that the animate theme sign -*â* as the trigger of concord is not adjacent to the transitive suffix -*is* 'by cutting edge;' the applicative suffix -*amaw* intervenes between them. In the well-formed concord examples (transitives) in (79), the theme sign and the transitive suffix are adjacent to one another.

(79) a.   ni-[$_{STEM}$ man-*is*]-[$_2$ *é*]-n wiyâs
        1-cut-by.edge-I.TH-LCAL meat
        'I cut (the) meat'

    b.   ni-[$_{STEM}$ man-*isw*]-[$_2$ *á*]-w sîsîp
        1-cut-by.edge-A.TH-3   duck
        'I cut a/the duck'

An adjacency account works, however, only if one assumes that the internal structure of stem is accessible from outside the stem, and that an empty suffix position (i.e. position 1, which is not represented in the relevant examples) does not count for the purpose of adjacency. Thus, though viable, the adjacency-aided templatic explanation is not as straightforward as the proposed syntactic approach, which accounts for the absence of concord in terms of a locality condition imposed on the distance of the two *v* heads.

However, the absence of the animacy restriction on the applicative argument, and its presence on the internal argument can in no way be articulated in templatic terms. A morphological template accomplishes a linear arrangement of morphemes. Accordingly, it may be able to express relationships between morphemes in terms of adjacency. The phonomenon at issue involves the animacy information of argument expressions. A morphological template is not designed to structure argument expressions. If a morphological template is modified to obtain the same explanatory power, i.e. to obtain the effect that the theme sign restricts the animacy of the applicative argument, but not the internal argument, it would take a form akin to the proposed syntactic structure. A minimality condition on movement explains the absence of the animacy restriction on the internal argument *pro* in the proposed syntactic approach.

Further, Plains Cree noun incorporation and quantification (to be examined in Chapters 4 and 5) exhibit properties that can be straightforwardly described by a syntactic apporach, but not by a templatic approach. As a brief preview of these phenomena, first, observe the incorporated noun *-iskwêw* 'woman' in the verbal complex in (80) must correspond to the internal argument (80a), not the external argument (80b).

(80)   tahk-iskaw-*iskwêw*-ê-w
        kick-by.body-woman-INTR-3
        a.   's/he kicked a/the woman'
        b.   *'a/the woman kicked her/him'

A templatic approach must simply stipulate this. In contrast, a syntactic approach needs no stipulation to account for the fact, as will be seen in Chapter 4. Turning to the quantification phenomena, replacement of the animate theme sign -ê in (81a) with the suffix -ikê in (81b) results in generic quantification over the internal argument, whereas the replacement of the same suffix with the suffix -ikawi in (81a) results in existential quantification over the external argument.

(81) a.   [sâk-ih-*ê*]-w
           love-TRAN-A.TH-3
           's/he loves her/him'

      b.   [sâk-ih-*ikê*]-w
           love-TRAN-G.OBJ-3
           's/he loves people'

      c.   ê-[sâk-ih-*ikawi*]-yêk
           CONJ-love-TRAN-USC-2PL
           'someone loves you (pl.)'   (Dahlstrom 1991:51)

Again, there is no principled way to explain these facts in templatic terms. In contrast, Chapter 5 demonstrates that it is possible to give them a principled account in syntactic terms.

In sum, inasmuch as morphemes are syntactic objects, syntax will take over the job that a morphological template has done so far, namely linearly organising and imposing cooccurrence restriction on morphemes. This renders a morphological template functionally redundant in the grammar.[38]

3.4 Conclusion

This chapter has proposed a syntactic analysis of affixation for Plains Cree, taking the referentially-dependent nature of "relative roots" as a point of departure. On this view, morphemes that compose a verbal complex are syntactic objects. Restricting the domain of inquiry to the portion of the verbal complex that is considered a predicate, I have elaborated a syntactic organisation of predicate-internal morphemes in terms of vP structures. Initial support for a syntactic treatment of Plains Cree verbs has already been provided by animacy agreement and concord in applicatives, cf. §3.2.5. The observed phenomena receive a straightforward account if "minimality"—an established syntactic notion

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[38] On more general problems of morphological templates, see Muysken 1986.

that is defined in terms of asymmetric c-command—is at work. As the last section demonstrated, a morphological template—a traditonal mode of structuring verbal complexes—must stipulate the relevant phenomena, which fall out automatically from a syntactic account. Now that syntax does more than a morphological template does, there is no reason for us to retain a morphological template as a descriptive device for verbal complexes. I will reinforce this conclusion in the next two chapters by examining more phenomena that affect the predicate-internal portion of Plains Cree verbal complexes. In the next chapter, I will demonstrate that noun incorporation phenomena in Plains Cree are subject to a syntactic analysis, consistent with the vP syntax proposed here.

Chapter 4

*v*P Structures and Noun Incorporation Phenomena

4.0 Introduction

This chapter demonstrates that noun incorporation in Plains Cree is subject to c-command and locality constraints. Since the notions of c-command and locality are syntactic in nature, I conclude that noun incorporation in Plains Cree is a syntactic phenomenon. To implement a syntactic analysis of noun incorporation, I make use of the *v*P structures introduced in the previous chapter.

Plains Cree noun incorporation is exemplified by the verbal complex pair in (1), where the independently-occurring nominal *wiyâkan* 'dish' in the (a) example corresponds to the incorporated noun *-iyâkan* 'dish,' which occurs internal to the verbal complex in the (b) example.

(1) a.   kisîpêk-in-am(-w)   *wiyâkan*
          wash-by.hand-I.TH-3 dish
          's/he washes a/the dish'

     b.   kisîpêk-in-*iyâkan*-ê-w
          wash-by.hand-dish-INTR-3
          's/he does the dishes' or 's/he washes a/the dish'

Besides the non-habitual interpretation 's/he washes a/the dish,' which is shared with (1a), (1b) also allows for the habitual interpretation 's/he *does the dishes*,' where *the dishes* is non-specific and non-referential. Habitual (or generic) interpretations of this sort are a hallmark of noun incorporation attested across polysynthetic languages (Mithun 1984). (There are a few more properties that characteristically distinguish between "incorporative" and "non-incorpoative" verbal complexes, which are discussed in §4.1.) In line with Baker 1988, 1996, I consider "incorporative" verbal complexes such as *kisîpêkiniyâkanêw* in (1b) to arise from X^0 movement of the incorporated noun *-iyâkan*.[1]

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[1] Chomsky (1999:30–1) claims that incorporation in the sense of Baker 1988 is the only phenomenon that is derived via X^0 movement in the syntax. Justification for syntactic X^0 movement hinges on whether the putative movement gives rise to semantic effects. While Chomsky leaves vague what he means by "semantic effects," I suspect that one can count the conventional, generic or habitual interpretation of noun incorporation to be such a semantic effect.

Specifically, the incorporated noun *-iyâkan* moves from its base-generated position, Spec, vP_1, and adjoins to v_2, occupied by the animate intransitive suffix *-ê* in the double-layered vP structure in (2).[2]

(2)　　*kisîpêkiniyâkanêw*　　's/he does the dishes'

```
            vP₂
           /  \
          /    \
         /      \
        v₂      vP₁
        -ê      /  \
     __-iyâkan /    \
    |         v₁   ROOT
    |         -in   kisîpêk
```
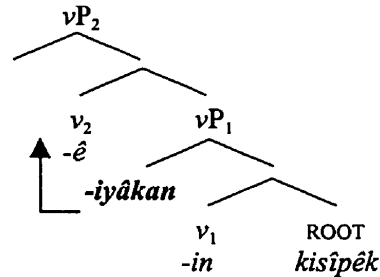
As the incorporated noun *-iyâkan* 'dish' originates in the internal argument position, Spec, vP_1, I am claiming that incorporated nouns in Plains Cree are arguments of a predicate.

In addition to incorporated nouns, there is another set of nominals that are treated under the heading of "noun incorporation phenomena" in this chapter. They are what are called "medials" in the Algonquian literature. The morpheme *-âskw* 'wood' in (3a) is a medial.

(3)　　a.　　kinw-*âsko*-si-w
　　　　　　　long-wood-STAT-3
　　　　　　　's/he (i.e. tree) is long'

　　　　b.　　kino-si-w
　　　　　　　long-STAT-3
　　　　　　　's/he is tall'

I propose that, on par with incorporated nouns, medials also undergo X^0 movement. However, unlike incorporated nouns, medials are base-generated as adjuncts to ROOT, which then incorporate into v_1. Thus, (3a) receives the structural representation in (4), where the medial *-âskw* 'wood' originates in the MED position.

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[2] Notice that noun incorporating structures always occur with an intransitive suffix. At present, I have no account for the appearance of intransitivizing morphology in these structures.

(4)　　*kinwâskosiw*　　's/he (i.e. tree) is long'

$$vP_1$$
$$v_1 \quad ROOT$$
$$-isi$$
$$MED \quad ROOT$$
$$-âskw \quad kinw$$
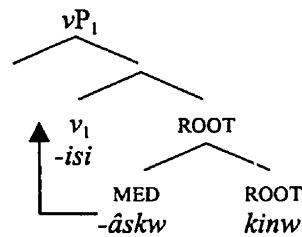
Thus, I am claiming that although incorporated nouns and medials are both *v*P-internal nominals that undergo X^0 movement, incorporated nouns are nominal arguments, whereas medials are nominal adjuncts.

The remainder of this chapter is structured in the following way. First, in §4.1, I justify the different treatments of incorporated nouns and medials as nominals that are argumental and adjunctual, respectively. Then in §4.2, I introduce the "C-Command Condition" (Chomsky 1995)—a general condition imposed on the operation Move in the minimalist program—as a constraint to the effect that incorporation takes place only in a few very limited structural environments. Then I test this prediction against the noun incorporation data that cover all Plains Cree verb types analysed by means of the proposed three *v*P structures. Third, §4.3 explicates why medials—syntactic objects that exhibit "medial incorporation"—are best analysed as nominal adjuncts to ROOT. Fourth, §4.4 addresses the issue of morpheme linearisation surrounding incorporated nouns and medials. §4.5 concludes the chapter with brief remarks on the driving force of the two incorporation processes.

4.1 Incorporated Nouns and Medials

Incorporated nouns and nominal medials differ in at least the following three respects: position in the verbal complex, optionality, and applicability to intransitives. I will consider each of these properties in turn, and conclude that it is reasonable to regard these items as two distinct *v*P-internal syntactic objects: incorporated nouns are arguments, whereas medials are adjuncts.

First of all, incorporated nouns and medials occupy different positions in the verbal complex. Incorporated nouns follow, but medials precede, the transitivity suffix. This linear order contrast between these *v*P-internal morphemes is illustrated in (5).

(5) a. ni-nip-*ih-âwas*-o-n   *incorporated noun*
         1-sleep-TRAN-child-INTR-LCAL
         'I put a/the child/children to sleep'

     b. kip-*âpisk-ah*-am(-w)   *medial*
         close-mineral-by.tool-I.TH-3
         's/he closed it with/as stone/metal'

The incorporated noun -*âwas* 'child' follows the transitive suffix -*ih* in (5a), whereas the medial -*âpisk* 'mineral solid' precedes the transitive suffix -*ah* 'by tool' in (5b). Different positions in the verbal complex imply different syntactic positions. Thus, the positional difference between incorporated nouns and medials within the verbal complex implies their positional difference in the *v*P structure.[3]

Second, incorporated nouns and medials behave differently with regards to their optionality in the verbal complex. Incorporated nouns are obligatory, whereas medials are optional. For instance, if the incorporated noun -*âwas* 'child' is left out of the verbal complex in (5a), the result is ill-formed verbal complex (6a). In contrast, if the medial -*âpisk* 'mineral solid' is left out in (5b), the resultant verbal complex (6b) remains well-formed.

(6) a. *ni-nip-*ih*-o-n   cf. (5a)
         1-sleep-TRAN-INTR-LCAL

     b. kip-*ah*-am(-w)   cf. (5b)
         close-by.tool-I.TH-3
         's/he closed it'

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[3] There are cases of noun incorporation in which the incorporated noun appears to follow the root directly. In (ia), the incorporated noun -*isit* 'foot' follows the transitive suffix -*in* 'by hand,' whereas in (ib), the same incorporated noun follows the root *kisîpêk* 'wash' instead. Notice there is no transitive suffix in the verbal complex in (ib).

(i) a. kisîpêk-*in-isit*-ê-w   *with the transitive suffix*
       wash-by. foot-INTR-3
       's/he washes her/his (own) feet'
    b. kisîpêk-*isit*-ê-w   *without the transitive suffix*
       wash-foot-INTR-3
       's/he washes her/his (own) feet'

The occurrence of an incorporated noun between the root and the intransitive suffix makes the incorporated noun look like a medial. Nevertheless, the incorporated noun -*isit* 'foot' in (ib), for instance, is not a medial because unlike medials, it cannot delete without leading to ungrammaticality (ii).

(ii) *kisîpêk-ê-w
     wash-INTR-3

See the following discussion in the main text.

This is the sense in which incorporated nouns are obligatory, but medials are optional in the verbal complex. One can capitalise on this contrast and argue that, being obligatory, incorporated nouns are most likely to be arguments, whereas being optional, medials are most likely to be adjuncts. If incorporated nouns are indeed arguments, then the fact that Plains Cree noun incorporation affects the transitivity of the verbal complex follows; only operations that affect arguments of a predicate have this effect. (Transitivity-affecting noun incorporation is called "Type II" noun incorporation in Mithun 1984.) The transitivity-affecting property of Plains Cree noun incorporation is illustrated by the pair of verbal complexes in (7).

(7)   a.   ni-kanaw-êyim-*â-w*   *awâsis*   *transitive*
            1-heed-by.mind-A.TH-3 child
            'I watched over a/the kid'

    b.   ni-kanaw-êyim-*âwas-o-n*   *intransitive*
            1-heed-by.mind-child-INTR-LCAL
            'I babysat'

The non-incorporative verb complex in (7a) is inflectionally transitive, as the presence of the animate theme sign -*â* suggests; the agreement suffix -*w* agrees with the third person singular nominal *awâsis* 'child.' In contrast, the incorporative verbal complex in (7b), which contains the incorporated noun *âwas* 'child' as the internal argument, is inflectionally intransitive.[4] This is indicated by the agreement suffix -*n* (signalling the local person subject) and the intransitive suffix -*o*.[5] Thus, the transitivity shift between corresponding non-incorporative and incorporative verbal complexes, as is evident in the form of agreement, suggests the argument status of incorporated nouns.

Finally, medials can occur in "underived" intransitive verbal complexes, as opposed to "derived" intransitive verbal complexes. Thus, for instance, the intransitive verbal complexes such as *mihkwâw* 'it is red' in (8a) can host the medial -*âpisk* 'mineral solid' to form the verbal complex in (8b).

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[4] Baker (1996:§7.4.2) argues that the lack of agreement morphology for the incorporated argument favours a syntactic over a "lexicalist" treatment of noun incorporation (Mithun 1984, Di Sciullo and Williams 1987, Rosen 1989, among others), cf. §4.2.7.

[5] David Pentland (personal communication) informs me that only the incorporated noun -*âwas* 'child' is followed by the intransitive suffix -*o*, which is homophonous with the middle reflexive suffix -*o*. All other incorporated nouns are followed by the animate intransitive suffix -*ê/â*. The suffix -*o* is the default animate intransitive suffix, according to Pentland.

(8)   a.   mihkw-*â*-w
               red-STAT-0
               'it is red'

        b.   mihkw-***âpisk-â***-w
               red-mineral-STAT-0
               'it (metal) is red (e.g. rusty)'

This, however, is impossible for incorporated nouns. The same intransitive verbal complex *mihkwâw* 'it is red' in (9a) fails to host the incorporated noun *-iyâkan* 'dish.' The resultant verbal complex is ill-formed, as (9b) shows.

(9)   a.   mihkw-â-w ***wiyâkan***
               red-STAT-0 dish
               'a/the dish is red'

        b.   *mihkw-***â-yâkan***-ê-w
               blood-STAT-dish-INTR-0
               '[intended] the dish is red'

This contrast can be captured, I argue, if incorporated nouns are arguments in an appropriate Spec, *v*P, whereas medials are adjuncts to ROOT.

As the preceding examples have revealed, we have good reason to distinguish between incorporated nouns and medials, although I argue that both *v*P-internal nominals undergo incorporation. Thus, I give them different structural analyses, and discuss them separately. In the next section, §4.2, I will examine how noun incorporation manifests itself with different Plains Cree verb types. Medial incorporation is the topic of §4.3.

4.2 Noun Incorporation

If noun incorporation is implemented via X^0 movement—or simply movement (or Move), as there is no absolute distinction between X^0 and XP of syntactic objects in the "bare phrase structure" theory (Chomsky 1995), adopted in this thesis—then it ought to observe constraints imposed on movement in general. One such constraint requires that syntactic objects always move "upward," not "downward," in terms of c-command. In the "minimalist program" of Chomsky 1995, the relevant constraint constitutes

part of the movement operation "Move (or Attract)" itself.[6] This is spelled out as the "C-Command Condition" (adapted from Chomsky 1995:253, Kitahara 1997:13).[7]

(10)   *C-Command Condition*
      α targets β only if β c-commands α.[8]

Given the C-Command Condition, one can predict from which specifier position an argument expression incorporates into which v, on the assumption that noun incorporation is restricted within the vP domain; i.e. the target of noun incorporation is uniquely v, not one of the higher functional heads above the topmost vP. As will be witnessed below, noun incorporation applies in conformity to the C-Command Condition in Plains Cree. This suggests the syntactic nature of this noun incorporation, as the C-Command Condition characterises movement as a syntactic operation. If Plains Cree noun incorporation is syntactic, then verbal complexes of the language, within which noun incorporation applies, must be syntactic as well. Thus, noun incorporation in Plains Cree corroborates my syntactic treatment of its verbal complexes (at least, as far as their predicate portion is concerned).

The remaining portion of this section consists of seven subsections. The first five subsections, §§4.2.1–4.2.5, constitute a survey of noun incorporation as applied to Plains Cree verbs. These are analysed by means of a single-layered vP (i.e. static unaccusatives), a double-layered vP (i.e. transitives, unergatives, and dynamic unaccusatives), and a triple-layered vP (i.e. applicatives and ditransitives). We will see that for applicatives and ditransitives, a locality (or more precisely, minimality) effect is observable (with a language-particular quirk), lending further support to a syntactic treatment of Plains Cree noun incorporation. Independent of the c-command and locality effects, §4.2.6 provides two additional pieces of evidence for the syntactic nature of noun incorporation. §4.2.7 closes the section with a discussion of implications of my analysis of noun incorporation in Plains Cree for noun incorporation phenomena in other polysynthetic languages.

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[6] Somewhat simplified, if one looks at the movement operation from the viewpoint of the target, it is "Attract." It is "Move" if the viewpoint is that of the moved syntactic object.

[7] The C-Command Condition accounts for a subset of the grammaticality of noun incorporation that used to be attributed to the "Head Movement Constraint" (Travis 1984) or the "Empty Category Principle" (Baker 1988, cf. Chomsky 1981).

[8] The notion of "target" is used to abstract away from the distinction between α adjoining to β itself and α landing in the specifier of β as a result of Move.

4.2.1 Single-Layered vP: Static Unaccusatives

Static unaccusatives are intransitives that are static. In current assumptions, only this class of verbs in Plains Cree are analysed by means of a single-layered vP. This verb class is exemplified by the verbal complexes in (11).

(11) a. [$_{vP}$ mihkw-â]-w
          red-STAT-0
          'it is red'

      b. [$_{vP}$ kino-si]-w
          tall-STAT-3
          's/he is tall'

The vP-portion of these static unaccusative verbal complexes is composed of a root and an intransitive suffix that indicates the static nature of the verbal complex. As illustrated by (12), noun incorporation is expected to be impossible in a single-layered vP.

(12) *single-layered vP*
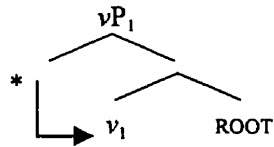
This single-layered vP has one argument position, Spec, vP_1, and one v head, v_1. Noun incorporation is expected to be ungrammatical because the potential incorporation target v_1 fails to c-command the position of the internal argument (i.e. Spec, vP_1). This prediction is borne out, as the (a) examples of (13) and (14) demonstrate. The corresponding non-incorporative (b) examples are, of course, well-formed.

(13) a. *mihkw-â-*yâkan*-(ê)*-w
          blood-STAT-dish-INTR-0
          '[intended] the dish is red'

      b. mihkw-â-w *wiyâkan*
          red-STAT-0 dish
          'a/the dish is red'

(14)   a.   *kino-s-*âwas*-(*o*)-w
                long-STAT-child-INTR-3
                '[intended] the child is tall'

       b.   kino-si-w   *awâsis*
                tall-STAT-3 child
                's/the child is tall'

The intended incorporated nouns -*(i)yâkan* 'dish' and -*âwas* 'child' cannot follow the static intransitive suffixes -*â* and -*(i)si*, respectively, the position in which the incorporated noun is expected to occur. The parentheses around the intransitive suffixes -*ê* in (13a) and -*o* in (14a) indicate that they cannot fit within the single-layered *v*P structure assigned to the verbal complexes. For concreteness, the *v*P portion of the ill-formed incorporative verbal complex *mihkwâyâkan(ê)w* in (13a) is represented by the single-layered *v*P structure in (15).

(15)   **mihkwâyâkan(ê)w*

```
                vP₁
              /     \
    -iyâkan        /    \
       *|      v₁       ROOT
        └──▶  -â        mihkw
```
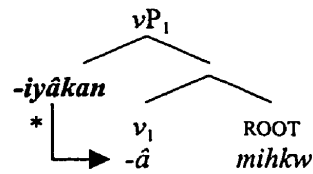
The static intransitive suffix -*â* as *v*₁ is the intended target of incorporation of the internal argument -*iyâkan* 'dish' in Spec, *v*P₁. This incorporation would violate the C-Command Condition, which precludes "lowering" operations such as this one. Thus, the single-layered *v*P syntax makes a correct prediction about the possibility of noun incorporation in static unaccusatives.

4.2.2 Double-Layered *v*P I: Transitives

The first class of double-layered structures to be examined in terms of noun incorporation is transitives. The verbal complexes in (16) represents this verb class.
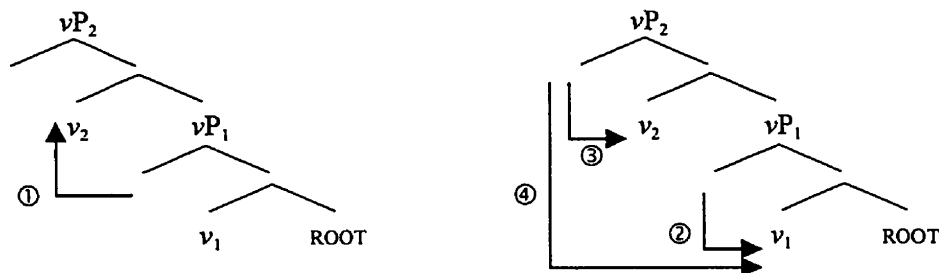
(16) a. ni-[$_{vP}$ tahk-iskaw-â]-w
1-kick-by.body-A.TH-3
'I kicked her/him'

b. ni-[$_{vP}$ kisîpêk-in-ê]-n
1-wash-by.hand-I.TH-LCAL
'I washed it'

This vP structure comprises three morphemes: from left to right, root, transitive suffix, and theme sign, .
as the two double-layered vP structures in (17) illustrate.

(17) *double vP*

a. ✓ *raising incorporation*   b. * *lowering incorporation*

Of the four logically possible incorporation routes, only one is predicted to be sanctioned by the
C-Command Condition. This is what is depicted by (17a). The internal argument in Spec, vP_1 can
incorporate into v_2 (①) because v_2 c-commands Spec, vP_1. The three incorporation routes depicted in
(17b) are all ruled out, as they are instances of lowering, a violation of the C-Command Condition. The
internal argument in Spec, vP_1 cannot incorporate into v_1 (②). The external argument, which is
based-generated in Spec, vP_2, can target neither v_2 (③) nor v_1 (④). In these three cases, the incorporation
target would fail to c-command the incorporated noun. In short, the prediction is the following: the
internal argument is incorporable, whereas the external argument is not. As (18a) and (19a) demonstrate,
incorporation of the internal argument of transitive verbs is possible in Plains Cree, confirming the first
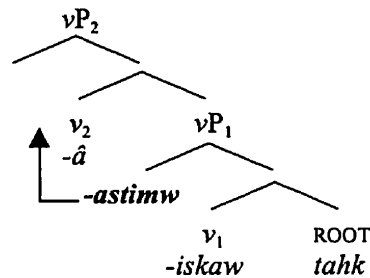half of this prediction.

(18) a. ni-tahk-iskaw-*astimw*-â-n
1-kick-by.body-horse-INTR-3
'I kicked a/the horse'

b. ni-tahk-iskaw-â-w   *misatim*
1-kick-by.body-A.TH-3 horse
'I kicked a/the horse'

(19)   a.   ni-kisîpêk-in-*cihciy*-â-n
1-wash-by.hand-hand-INTR-LCAL
'I washed my hands'

        b.   ni-kisîpêk-in-ê-n   ni-*cihciy*-a
1-wash-by.hand-I.TH-LCAL 1-hand-PL
'I washed my hands'

The incorporated nouns -*astimw* 'horse' and -*cihciy* 'hand' in the (a) examples correspond to the independently-occurring nouns *misatim* 'horse' and *nicihciya* 'my hands' in the (b) examples. To illustrate, the *v*P portion of the verbal complex *nitahkiskawastimwân* 'I kicked a/the horse' in (18a) is structurally analysed as (20).

(20)   *nitahkiskawastimwân*   'I kicked a/the horse'

The movement of the incorporated noun -*astimw* 'horse' as the internal argument in Spec, *v*P₁ to the intransitive suffix -*â* as v_2 is licit, since v_2 c-commands Spec, *v*P₁, in conformity with the C-Command Condition.

The second half of the prediction—that the external argument does not undergo incorporation—is evident from the fact that the verbal complex containing the incorporated noun -*iskwêw* 'woman' in (21) can be construed only as the internal argument.

(21)   tahk-iskaw-*iskwêw*-ê-w
kick-by.body-woman-INTR-3

        a.   's/he kicked a/the woman'
        b.   *'a/the woman kicked her/him'

Another way of showing the same point is to exploit the "proximate" vs. "obviative" distinction of nominals. When the transitive participants are both third person, and the transitive verbal complex is in the unmarked, "direct" form, the "proximate" argument (morphologically unmarked) must be interpreted as the external argument, whereas the "obviative" argument (marked with -*(w)a*) must be interpreted as the internal argument, cf. §1.6.4. Thus, the sentence in (22) means (22a), but not (22b).

(22) Claudia tahk-iskaw-ê-w   Ottilie-*wa*
      C.   kick-by.foot-A.TH-3 O. -OBV

      a.   'Claudia kicked Ottilie'
      b.   *'Ottilie kicked Claudia'

Given this generalisation, if the unmarked, proximate name *Claudia* is added to the incorporative verbal complex *tahkiskawiskwêwêw* 's/he kicked a/the woman,' it is predicted that the noun cannot be understood as referring to the incorporated internal argument. Conversely, if obviative-marked *Claudiawa* is added instead, this marked, obviative name is predicted to refer to the internal, incorporated argument. These predictions are borne out.

(23) a.   tahk-iskaw-*iskwêw*-ê-w   Claudia
              kick-by.body-woman-INTR-3 C.
              'Claudia kicked a/the woman'

      b.   tahk-iskaw-*iskwêw*-ê-w   Claudia-*wa*
              kick-by.body-woman-INTR-3 C.   -OBV
              'S/he kicked Claudia (= *iskwêw*)'

The proximate name *Claudia* in (23a) is interpreted as the external argument, whereas the obviative name *Claudiawa* in (23b) is interpreted as the internal argument, as predicted.

In sum, in the context of noun incorporation, transitives behave in the way that is expected under my analysis; they do allow the internal argument, but not the external argument, to undergo noun incorporation.

4.2.3 Double-Layered vP II: Unergatives

Unergatives are another class of verbs that project a double-layered vP structure. Their "single" argument is base-generated as the external argument. (24a) exemplifies what I call *simple unergatives* (see §3.2.3.1) and (24b) exemplifies what I call *unergatives of movement* (see §3.2.3.2).

(24)   a.   nip-â-w   *simple unergative*
                   sleep-INTR-3
                   's/he sleeps'

         b.   pim-oht-ê-w   *unergative of movement*
                   along-by.walking-INTR-3
                   's/he walks along'

Given that a double-layered vP contains two specifier positions, Spec, vP_2 for the external argument, and Spec, vP_1 for the internal argument, it is predicted that the internal argument of unergatives, on par with that of transitives, undergoes noun incorporation felicitously, respecting the C-Command Condition. However, their phonologically-null internal argument is either a constant "cognate object" constant (simple unergatives) or a "path" argument *pro* (unergatives of movement). These internal arguments cannot be overt; therefore, this prediction is not readily testable. Nevertheless, there is at least one unergative stem available in my data base that optionally takes a phonologically-overt nominal as its internal argument. This verb stem is *kimoti* '*x* steals (*y*).' The verb stem is composed of typical unergative verb morphology, containing the animate intransitive suffix *-i*. It can be used either intransitively (25a) or transitively (25b), with its morphological structure unaltered.

(25)   a.   [$_{vP}$ kimot-i]-w   *unergative*
                   steal-INTR-3
                   's/he steals'

         b.   [$_{vP}$ kimot-i]-w maskihkîs   *transitive*
                   steal-INTR-3   candy
   's/he steals a/the candy'

As expected, the verb stem *kimoti* in its transitive use allows for noun incorporation. Observe the grammatical verbal complex (26a), which contains the incorporated noun *-astimw* 'horse.' This example happens to be accompanied by the "stranded" demonstrative *awa* 'this (animate).'[9]

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[9] I assume Baker's (1996:§7.4) analysis of stranded demonstratives. That is, the demonstrative *awa* 'this' in (26a) is licensed via association with the trace of the incorporated noun *astimw* 'horse' left behind in Spec, vP_1. This,

(26)   a.   ni-kimot-*astimw*-â-n   *awa*
                1-steal-horse-INTR-LCAL this
                'I stole this horse'

       b.   ni-kimot-i-n   *awa misatim*
                1-steal-INTR-LCAL this horse
                'I stole this horse'

The double-layered vP structure in (27) shows why the incorporative verbal complex in (26a) is well-formed. By the stipulation introduced in §3.2.3, v_1 is phonologically-null in this structure.[10]

(27)   *nikimotastimwân*   'I stole this horse'
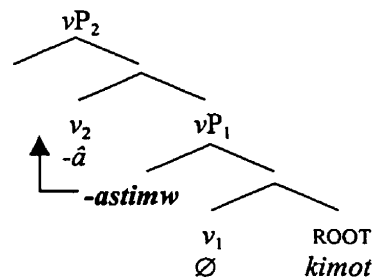
The intransitive suffix -*â* as v_2 c-commands the incorporated noun -*astimw* 'horse' as the internal argument in Spec, vP$_1$. This configuration allows the second to target the first as an instance of Move, satisfying the C-Command Condition.

How about the external argument of unergatives? If incorporation of the external argument were possible, the verbal complex (28), which contains the incorporated noun -*iskwêw* 'woman,' could receive not only the (a) interpretation, but also the (b) interpretation.

(28)   kimot-*iskwêw*-ê-w
         steal-woman-INTR-3

       a.   's/he stole a/the woman'
       b.   *'a/the woman stole her/him'

---

however, does not necessarily imply that the demonstrative and the internal argument form a single syntactic object prior to incorporation. See §4.2.7 for a related discussion.

[10] The animate intransitive suffix -*â* in a sense replaces the animate intransitive suffix -*i*, which follows the root *kimot* 'steal' elsewhere. This lends support to the postulation of animate intransitive suffixes in general as v_2, I believe.

This is not the case, however. The verbal complex can mean only (28a), suggesting that the incorporated noun can originate only in Spec, vP_1, the internal argument position, but not in Spec, vP_2, the external argument position. Likewise, the unergative sentence in (29a) cannot be paraphrased as its incorporative counterpart in (29b).

(29) a. pâhp-i-w *awâsis*
          laugh-INTR-3 child
          'a/the child is laughing'

      b. *pâhp-*âwas*-o-w
          laugh-INTR-child-INTR-3

This must be because the incorporated noun *-âwas* 'child' is the "single" argument of the unergative verb stem *pâhpi* '*x* laughs,' which is the external argument. For concreteness, (30) represents the double-layered *v*P structure of the illicit incorporative verbal complex in (29b).

(30) *pâhpâwasow*
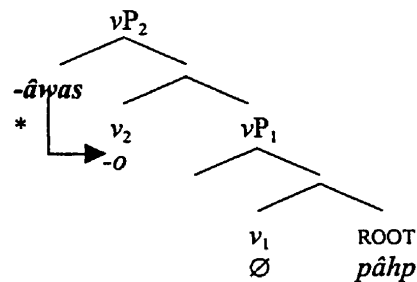
Occupying Spec, vP_2, the external argument *-âwas* 'child' fails to be c-commanded by the intransitive suffix *-o* as v_2; this is a violation of the C-Command Condition.

Thus, to the extent that appropriate data are accessible, we can reach the same conclusion for unergatives as for transitives; the internal argument is incorporable, but the external argument is not. This is an expected state of affairs in my analysis, as both verb types are assigned a double-layered *v*P structure.

### 4.2.4 Double-Layered vP III: Dynamic Unaccusatives

The third types of verbs that are analysed by means of a double-layered vP are dynamic unaccusatives. The "single" argument of dynamic unaccusatives is base-generated as the internal argument. This class of verbs in Plains Cree is represented by the verbal complexes in (31).

(31)   a.   [$_{vP}$ yôhtê-*payi*]-w
                 open-INCH-0
                 'it opens (by itself)'

        b.   [$_{vP}$ pîko-*payi*]-w
                 break-INCH-0
                 'it breaks (by itself)'

Noun incorporation fails to apply to the "single" argument of dynamic unaccusatives. This is illustrated by the schematic double-layered vP structure in (32).

(32)   *dynamic unaccusatives*
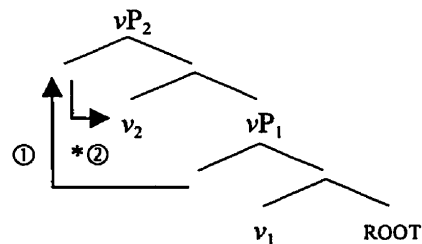
As proposed in §3.2.4, the internal argument of dynamic unaccusatives in Plains Cree is first introduced in Spec, vP$_1$ (checking the theta-role feature of v_1), and then undergoes movement to Spec, vP$_2$(①) to check the theta-role feature of v_2. This dual theta-role checking enables the single argument of dynamic unaccusatives to bear both the "measuring-out" and "energy source" roles. Now, with Spec, vP$_2$ as its landing site, the moved internal argument of dynamic unaccusatives must incorporate from this position if it incorporates at all. The movement from Spec, vP$_2$ to v_2 (②), however, is a lowering operation. This runs counter to the C-Command Condition. Therefore, no incorporation of the single argument of dynamic unaccusatives should be possible, on par with the base-generated external argument of transitives and unergatives. Is this prediction borne out? Wolfart 1971, the pioneer study of Plains Cree noun incorporation, presents no instance of noun incorporation applied to dynamic unaccusatives, nor

has my own elicitation found any. The ill-formed incorporative verbal complex in (33a) is a failed attempt to derive an incorporative counterpart from the non-incorporative verbal complex in (33b).

(33) a. *tiht-ipayi-(*a*)*stimw*-ê-w[11]
          roll-INCH-horse-INTR-3

      b. tiht-ipayi-w *misatim*
          roll-INCH-3 horse
          'a/the horse tumbled over'

The illicit verbal complex **tihtipayi(a)stimwêw* receives the vP structure given in (34).

(34) **tihtipayi(a)stimwêw*

$$vP_2$$

-*astimw*

$\textcircled{1}$ | *$\textcircled{2}$ v_2 | vP_1
        -*ê*

v_1 ROOT
-*payi*   *tiht*
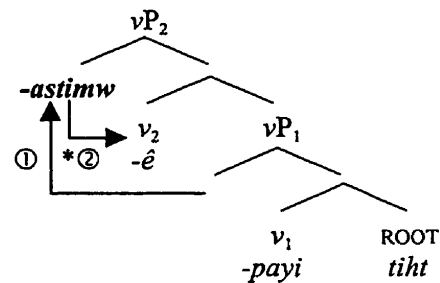
There is no problem with the initial movement from Spec, vP_1 to Spec, vP_2 ($\textcircled{1}$), triggered by the theta-role feature on the intransitive suffix -*ê* as v_2. The movement from Spec, vP_2 to v_2 ($\textcircled{2}$) is fatal, however, because it is an instance of lowering, a violation of the C-Command Condition. The prediction is borne out, supporting my derivation of Plains Cree dynamic unaccusatives.

4.2.5 Triple-Layered *v*P: Applicatives and Ditransitives

Finally, let us turn to the class of verbs that are structured by means of a triple-layered vP—applicatives and ditransitives. As will be witnessed below, applicatives (and ditransitives, somewhat indecisively) reveal that Plains Cree noun incorporation is subject to a locality constraint, and thus applicable in a narrower domain than is predicted by the C-Command Condition alone. The locality constraint to be introduced is half universal and half language-particular. The universal portion of the locality constraint

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[11] The initial vowel [a] of the incorporated noun -*astimw* 'horse' is expected to delete according to a regular phonological rule of the language.

is defined in terms of "closeness," which in turn is defined in terms of asymmetric c-command. As the notion of locality defined in this way is syntactic, my syntactic treatment of Plains Cree noun incorporation receives further corroboration.
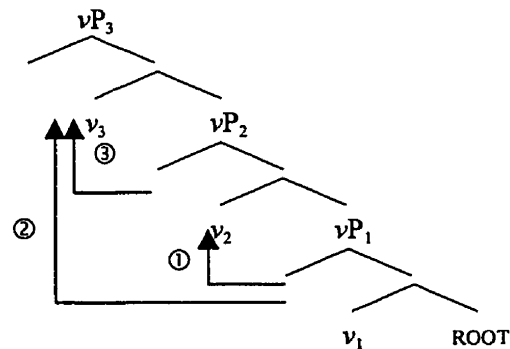
The class of applicatives and ditransitives in Plains Cree is exemplified by the verbal complexes in (35).

(35)   a.   ni-[$_{vP}$ wî-ht-amaw-â]-w
              1-tell.about-TRAN-APPL-A.TH-3
              'I told her/him about her/him/it'

        b.   [$_{vP}$ miy-ê]-w
              give-A.TH-3
              's/he gives her/him/it to her/him'

The verbal complex in (35a) exhibits the canonical morphological shape of the applicative construction, with four vP-internal morphemes—root, transitive suffix, applicative suffix, and theme sign—aligned from left to right. The verbal complex in (35b) with a ditransitive meaning 'give,' on the other hand, exhibits an exceptional morphological shape. It consists only of the root *miy* 'give' and the animate theme sign -*ê*, lacking a transitive suffix and the applicative suffix -*amaw*. In my analysis, however, these two verbs are both assigned a triple-layered vP structure (see §3.2.5).
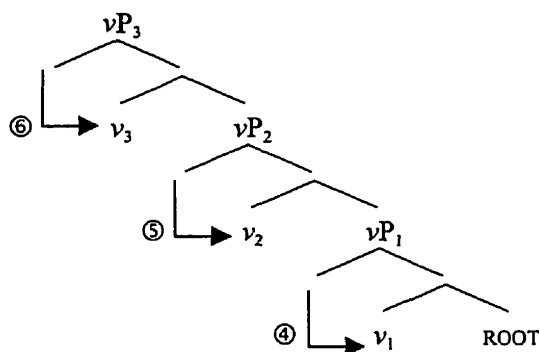
(36)   *triple-layered vP*

        a.   ✓ *raising incorporation*

b.   * *lowering incorporation*

```
            vP₃
          /     \
    ⑥└─▶ v₃      vP₂
              /      \
        ⑤└─▶ v₂       vP₁
                    /     \
              ④└─▶ v₁      ROOT
```

Given the C-Command Condition, the three incorporation routes in (36a) are predicted to be licit: the argument in Spec, vP_1 is able to target both v_2 (①) and v_3 (②); the argument in Spec, vP_2 is able to target v_3 (③). In these three cases, the target of incorporation c-commands the original position of the moved syntactic object. The C-Command Condition, on the other hand, disallows the three incorporation routes in (36b). The argument in Spec, vP_1 cannot incorporate into v_1 (④) because the second fails to c-command the first. Likewise, the argument in Spec, vP_2 cannot incorporate into v_2 (⑤), and the external argument in Spec, vP_3 cannot incorporate into v_3 (⑥), for the same reason: the second fails to c-command the first.[12] The table in (37) summarises these predictions.

(37)   *predictions by the C-Command Condition*

argument position	incorporation possible?	target
a. Spec, vP_1	yes	v_2 & v_3
b. Spec, vP_2	yes	v_3
c. Spec, vP_3	no	—

Let us turn to data to test these predictions.

As far as applicatives (i.e. ditransitives with the applicative suffix *-amaw*) are concerned, my data suggest that only the applicative argument is incorporable.[13] The incorporated noun *-âwas* 'child' in (38a) corresponds to the independently-occurring nominal *awâsisak* 'children' in (38b). Both are interpreted as the applicative argument.

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[12] There are two other lowering incorporation routes, namely from Spec, vP_2 to v_1, and from Spec, vP_3 to v_1. I do not present them in favour of the expository clarity of (36b). They are, of course, illicit due to the C-Command Condition.

[13] Pace Rosen (1989:316), who remarks that "[s]till to be explained, however, is the apparent fact that goals and benefactives *never* incorporate in any language." (italics added)

(38) a. ni-wî-ht-am(aw)-*âwas*-o-n[14]   âcimowin
         1-tell.about-TRAN-APPL-child-INTR-LCAL story
         'I told a/the story to a/(the/my) child/ren'

     b. ni-wî-ht-amaw-â-w   *awâsis*-ak âcimowin
         1-tell.about-TRAN-APPL-A.TH-3 child-PL   story
         'I told a/the story to (the/my) children'

This applicative incorporation is illustrated by the triple-layered *v*P structure in (39), which partially represents the incorporative verbal complex in (38a).

(39)   *niwîhtam(aw)âwason*   'I tell it to a/(the/my) child/ren'
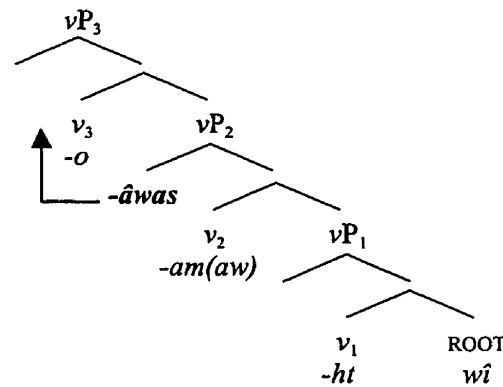
The applicative argument *-âwas* 'child' moves from Spec, *v*P$_2$ and adjoins to *v*$_3$, the intransitive suffix *-o*. This incorporation is licit, as *v*$_3$ c-commands Spec, *v*P$_2$, satisfying the C-Command Condition. Thus, the prediction in (37b) is borne out.

Conversely, the internal argument fails to incorporate; it can target neither *v*$_2$ or *v*$_3$, contrary to prediction, cf. (37a). This is illustrated by the two ill-formed incorporative verbal complexes in (40).

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[14] The form in Ahenakew 1987:10 lacks the parenthesised segments *aw* in (38a), in disagreement with the speakers I consulted. This, I believe, is an instance of haplology.

(40) a.   *ni-kisîpêk-in-amaw-*iyâkan*-â-w   *target = v₃*

             1-wash-by.hand-APPL-dish-INTR-3

             'I do the dishes for her/him [intended]'

      b.   *ni-kisîpêk-in-*iyâkan*-amaw-â-w   *target = v₂*

             1-wash-by.hand-dish-APPL-INTR-3

             'I do the dishes for her/him [intended]'

      c.   ni-kisîpêk-in-amaw-â-w   *wiyâkan*-a

             1-wash-by.hand-APPL-INTR-3 dish-PL

             'I wash the dishes for her/him'

These failed noun incorporations are illustrated in (41).

(41)   **nikisîpêkiniyâkanamawâw* & **nikisîpêkinamawiyâkanâw*
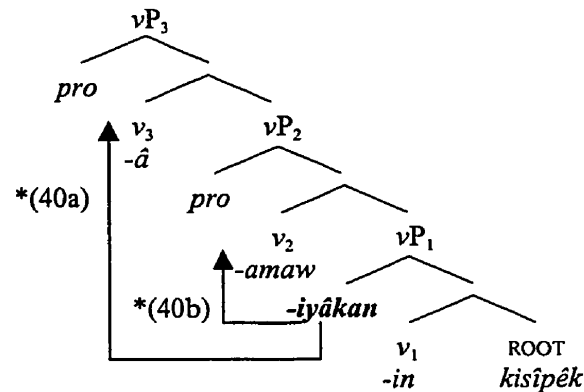
The movement that produces (40a) moves the internal argument *-iyâkan* 'dish' from Spec, vP_1 to the intransitive suffix *-â* in v_3. The moved internal argument, therefore, skips over the "closer" v head v_2, occupied by the applicative suffix *-amaw*, on its way to the target v_3. It also skips over Spec, vP_2, the position of the applicative argument, which is closer to the target v_3 than the original position of the internal argument, Spec, vP_1. Capitalising on the second fact, I propose the Target Condition in (42) to account for the illicit noun incorporation under consideration.

(42)   *Target Condition (first approximation)*

        α targets β only if α is the closest argument for β.

The notion of "closest argument" is repeated in (43).

(43)   *Closest Argument*
        α is the closest argument for a head β iff
        a.   β asymmetrically c-commands α, and
        b.   there is no argument γ such that β asymmetrically c-commands γ, and γ asymmetrically c-commands α.

The internal argument *-iyâkan* 'dish' in Spec, vP_1 is not the local argument for the target of incorporation, the intransitive suffix *-â* in v_3 as per (43). This is because the intransitive suffix *-â* as v_3 asymmetrically c-commands the applicative argument *pro* in Spec, vP_2, which in turn asymmetrically c-commands the internal argument *-iyâkan* 'dish' in Spec, vP_1. As it is not the local argument for the incorporation target, the internal argument *-iyâkan* 'dish' fails to undergo noun incorporation as per the Target Condition. This is how (40a) is ruled out.

The Target Condition, however, cannot to account for the ill-formedness of the incorporative complex in (40b), where the internal argument *-iyâkan* 'dish' incorporates into the applicative suffix *-amaw*. As there is no argument that is closer than the internal argument to the applicative suffix *-amaw* as v_2, the Target Condition incorrectly predicts that the incorporative verbal complex in (40b) is well-formed. Another condition must be invoked to block this incorporation. To this effect, I revise the Target Condition in the following way:

(44)   *Target Condition (revised)*
        α targets β only if
        a.   α is the closest argument for β, and
        b.   β is of the right kind.

What is new in the revised Target Condition is the second clause. The result that is intended by this second clause is to identify the applicative suffix *-amaw* as not "the right kind." Only the intransitive suffixes *-ê/â* and *-o* are of the right kind, and as such can be targeted by an incorporated noun.[15] As the applicative suffix *-amaw* in v_2 is not the right target of incorporation, the internal argument *-iyâkan* 'dish' cannot target it, due to the second clause of the revised Target Condition. This is why the incorporative verbal complex in (40b) is ill-formed.

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[15] This may be suggestive of a noun incorporation driven by the target, rather than the incorporated noun.

Contrary to applicatives that are morphologically marked with the applicative suffix *-amaw*, the root-only ditransitive *miy* 'x gives y to her/him' allows the internal argument to undergo incorporation. This is exemplified by the well-formed incorporative ditransitive verbal complex in (45a).[16]

(45)   a.   miy-***astimw***-ê-w   awâsis-a
                   give-horse-INTR-3 child-OBV
                   's/he gives a horse to (her/his) child(ren)'

        b.   miy-ê-w   awâsis-a ***misatimw***-a
                   give-A.TH-3 child-OBV horse-OBV
                   's/he gives a horse to (her/his) child(ren)'

The utterance in (45a) is an incorporative paraphrase of the utterance in (45b). The incorporated noun *-astimw* 'horse' in the first corresponds to the independently-occurring nominal *misatimwa* 'horse (obviative)' in the second. Both of these nominals are interpreted as the internal argument of the ditransitive verb *miy* 'x gives y to z.' This internal argument incorporation is predicted in terms of the "dative alignment" of the triple-layered *v*P structure proposed for the verb.

(46)   *miyastimwêw*   's/he gives a horse to her/him'
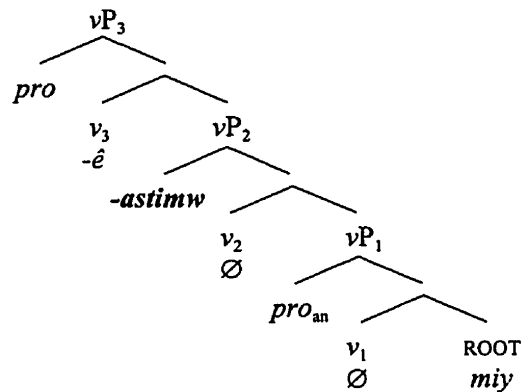
The internal argument *-astimw* 'horse' is the local argument for the target v_3, the intransitive suffix *-ê*, which is of the right kind. Thus, the internal argument incorporation observes both clauses of the revised Target Condition. This, in turn, lends support to the triple-layered *v*P assigned to the ditransitive verb *miy* 'x gives y to z.'

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[16] What is missing here is an ill-formed incorporative ditransitive verbal complex in which the incorporated noun plays the role of the applicative argument. In an informal setting in which I failed to record data, the verbal

In sum, we have seen that applicatives and ditransitives require the applicability of noun incorporation in Plains Cree to be more restricted than the C-Command Condition alone predicts. The target of incorporation must be among the intransitive suffixes -ê/â and -o. Further, the incorporated noun must be the local argument for the target intransitive suffix. This much qualification, as well as the C-Command Condition, is expressed in the Target Condition in (44). The notion of local argument in the first clause of the Target Condition is syntactic, as it is defined in terms of asymmetric c-command. Thus, it further supports my syntactic analysis of Plains Cree noun incorporation.

4.2.6 Interim Summary

The facts about Plains Cree noun incorporation documented in the preceding sections diverge from what is known about noun incorporation in the literature. In particular, the data cited in Baker 1988 suggest that Iroquoian languages allow the single argument of both static and dynamic unaccusatives to undergo noun incorporation, which Plains Cree does not. For instance, the examples in (47) demonstrate that in Onondaga (Iroquoian), the single argument of dynamic unaccusatives can be incorporated.

(47)   *Onondaga*   (Baker 1988:87)

        a.   ka-*hsahe ̃*-ahi-hw-i
              3N-bean-spill-CAUS-ASP
              'the beans spilled'

        b.   ka-hi-hw-i   ne ʔo-*hsahe ̃*-aʔ
              3N-spill-CAUS-ASP the PRE-bean-SUF
   'the beans spilled'

If Onondaga works the same way as Plains Cree does, (47a) should be ungrammatical. As presented in §4.2.4, the single, internal argument of dynamic unaccusatives in Plains Cree is analysed as moving to Spec, vP_2 to check the theta-role feature of v_2, prior to incorporation. Spec, vP_2 is the external argument position in a double-layered vP structure. There is no successful noun incorporation from the external position, as it always ends up being an instance of "lowering" movement. There is no legitimate lowering operation in the minimalist program of Chomsky 1995. Now, if a double-layered vP structure is also applicable to Onondaga dynamic unaccusatives (which seems to be suggested by the presence of the causative suffix -*hw* in the above verbal complexes), then the availability of noun incorporation with

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complex came out as ill-formed.

dynamic unaccusatives exemplified in (47a) may imply that the internal argument of dynamic unaccusatives based-generated in Spec, vP_1 does not need to raise to Spec, vP_2 in Onondaga. If this choice is available in such languages, the relevant argument "raises," not "lowers," to v_2.[17] This is illustrated in (48).

(48)   *kahsahe ꞧahihwi*   'the beans spilled'
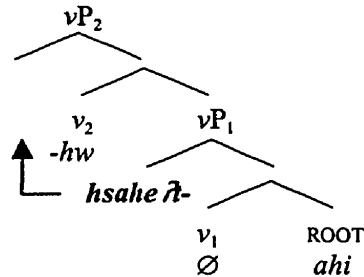
In this structure, the incorporated noun *hsahe ꞧ-* 'bean' in Spec, vP_1 crucially raises, and adjoins to the suffix *-hw* in v_2 in conformity with the C-Command Condition.[18]

Moreover, there are polysynthetic languages that allow noun incorporation to apply to static unaccusatives. This is illustrated by well-formed noun incorporation examples below.

(49)   *Tuscarora (Iroquoian)*   (Baker 1988:87)

         ka-***hehn***-akwahat
         3N-field-good
         'the field is good'

(50)   *Southern Tiwa (Tanoan)*   (Baker 1988:88)

         i-***k'uru***-k'euwe-m
         B-dipper-old-PRES
         'the dipper is old'

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[17] This implies that there is more than one way to represent dynamic unaccusatives, and the choice is parametric. I will come back to the issue in §7.3, where the causative-inchoative alternation is on the agenda. The unpronounced external argument of dynamic unaccusatives whose internal argument remains in situ may be analysed as being "existentially bound" (Levin and Rappaport Hovav 1995).

[18] I stipulate here that v_1 is phonologically null. I also abstract away from the issue of linearisation of the relevant morphemes.

As observed in §4.2.1, incorporation of the single argument of static unaccusatives is prohibited in Plains Cree. This is because static unaccusatives are analysed by means of a single vP, and v_1 fails to c-commands Spec, vP$_1$; movement from the second position to the first is an instance of lowering. Thus, well-formed noun incorporation is not predictable for static unaccusative verbal complexes in my phrase structure system. If so, how can we explain these grammatical incorporative verbal complexes? There are two possibilities. One is to give up on my enterprise on predicatehood partially, and allow ROOT to introduce the internal argument in its complement position. Then the internal argument *hehn* 'field' in (49), for instance, can target ROOT *akwahat* 'good' as the landing site of incorporation.

(51) *kahehnakwahat* 'the field is good'
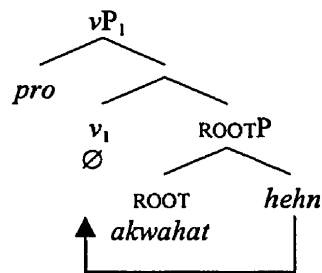
This solution amounts to saying that whether ROOT introduces an argument or not (and perhaps temporality too) is parametrised across languages—contrary to one of the central claims of this dissertation. Now, if this is true, that is, if the applicability of noun incorporation to static unaccusatives correlates with whether ROOT introduces the internal argument or not, then the fact that there is no legitimate noun incorporation attested with Plains Cree static unaccusatives suggests that ROOT in Plains Cree vP structures introduces no argument, whereas ROOT in Iroquoian does. The other possibility is to propose that the incorporated noun which appears to be the single argument of static unaccusatives in Iroquoian languages is not the internal argument, but an adjunct to ROOT. In this analysis, the incorporated noun *hehn* 'field' in (49) incorporates into the phonologically-null v_1.

(52) *kahehnakwahat* 'the field is good'
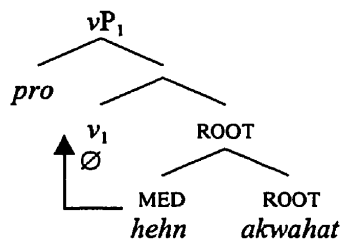
As will be discussed in the next section, this is in fact the analysis that I give to "medials," another set of *v*P-internal nominals in Plains Cree. Before proceeding directly to the topic of "medial incorporation," §4.2.7 replicates two of Baker's (1996:§7.4) three diagnostics of the syntactic nature of noun incorporation. These confirm that noun incorporation in Plains Cree is indeed syntactic.

4.2.7 Two Diagnostics of Syntactic Noun Incorporation

In the preceding sections, I have analysed Plains Cree noun incorporation in syntactic terms in line with Baker 1988, 1996. However, this is not the only possibility. It has been argued in the literature that noun incorporation attested in polysynthetic languages should be analysed as a kind of compounding, a lexical process. This "lexicalist" approach is championed by Di Sciullo and Williams (1987) and Rosen (1989), cf. Mithun 1984.

The syntactic and lexicalist approaches to noun incorporation differ in two respects: their treatment of the incorporated noun, and concomitant identification of the phonologically-null argument expression associated with the incorporated noun. To understand these differences, let us first consider the examples in (53).

(53) a. ni-kisîpêk-in-*astimw*-â-n
          1-wash-by.hand-horse-INTR-LCAL
          'I washed a/the horse'

      b. ni-kisîpêk-in-â-w   *misatim*
          1-wash-by.hand-A.TH-3 horse
          'I washed a/the horse'

(53a) is the incorporative version of (53b). In (53a), the verbal complex contains the incorporated noun -*astimw* 'horse,' whereas in (53b), the noun *misatim* 'horse' lies outside the verbal complex. The lexicalist approach analyses the incorporated noun -*astimw* 'horse' as a modification or specification that qualifies the internal argument. That is, in the lexicalist approach, the incorporated noun is not the internal argument itself, but a modifier of the internal argument that happens to occur within the verbal complex. The syntactic approach, on the other hand, analyses the incorporated noun -*astimw* 'horse' itself as the internal argument, which occurs within the verbal complex as a result of movement, leaving a trace in its base-generated position. Baker (1996:§7.4.1) argues that both approaches must postulate a

phonologically-null internal argument to license a "stranded" modifier associated with the incorporated noun, such as the demonstrative *awa* 'this (animate)' in (54a).

(54)   a.   ni-kisîpêk-in-*astimw*-â-n   **awa**
                    1-wash-by.hand-horse-INTR-LCAL this
                    'I washed this horse'

        b.   ni-kisîpêk-in-â-w   **awa misatim**
                    1-wash-by.hand-A.TH-3 this horse
                    'I washed this horse'

In the lexicalist approach, it is the pronominal internal argument in the sense of Baker 1996 (i.e. *pro*) that licenses the demonstrative. In the syntactic approach, it is the trace of the incorporated noun that does the job. Thus, (55a) and (55b) schematically represent the relevant portion of the verbal complex in the lexicalist and syntactic approaches, respectively.

(55)   a.   ...V-N_i ... *pro_i*...   *lexicalist approach*
        b.   ...V-N_i ... t_i...   *syntactic approach*

N hyphenated with V stands for the incorporated noun. The coindexation between N and *pro* indicates the qualification or modification of the second by the first. The coindexation between N and its trace indicates movement. Baker (1996:§7.4.2–7.4.4) demonstrates that the above-described differences between the two approaches make different predictions in three grammatical phenomena: agreement, coreference possibility, and *wh* questioning. In the next two subsections, I will replicate Baker's (1996) argumentation pertaining to the second and third phenomena to confirm that Plains Cree noun incorporation in fact *must*, rather than *can*, be analysed in syntactic terms.[19]

4.2.7.1 Coreference

Baker (1996:§7.4.3) argues that the two phonologically-null arguments in the two approaches to noun incorporation behave differently with respect to the binding theory. In the lexicalist approach, the

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[19] Mellow (1989, 1990) argues for a syntactic approach to Plains Cree noun incorporation. Mellow points out that in Plains Cree incorporated nouns can strand their modifiers and introduce discourse referents. These phenomena are used as diagnostics of syntactic noun incorporation in Baker 1988. It is demonstrated, however, that these phenomena can be accommodated in a lexical approach as well (given the availability of *pro*), cf. Baker 1996:§7.4.1. For this reason, I do not replicate Mellow's (1989, 1990) argumentation for a syntactic approach to Plains Cree noun incorporation here.

relevant phonologically-null pronominal argument is *pro*, and as such must be subject to Condition B of the binding theory (Chomsky 1982). In the syntactic approach, the relevant phonologically-null argument is the trace of the incorporated noun, and as Baker (1996:320) claims, is expected to behave as an ordinary referential noun. Hence, it must be subject to Condition C of the binding theory. Conditions B and C of the binding theory are defined in the following way (Chomsky 1995:96):

(56) a. *Condition B* A pronoun must be free in a local domain.
      b. *Condition C* An r-expressions must be free.

For the purpose of the argumentation that follows, the embedded clause forms a "local domain" referred to in Condition B independent of the matrix clause. Thus, the pronoun *her* cannot refer to the referential expression *Claudia* in (57a), whereas this coreference is possible in (57b), where *her* is separated from *Claudia* by the embedded clause boundary.

(57) a. *Claudia$_i$ likes her$_i$
      b. Claudia$_i$ knows [that Ottilie likes her$_i$]

The pronoun *her* refers to the matrix subject *Claudia* because it is free (i.e. not c-commanded by a coreferential nominal) in the relevant local domain, i.e. the embedded clause. This is what Condition B predicts. Condition C, on the other hand, says that referential expressions such as *Claudia* must be free regardless of their local domain. This explains why both (58a) and (58b) are ill-formed under the interpretation that *Claudia* corefers with the matrix pronoun *She*.

(58) a. *She$_i$ likes Claudia$_i$
      b. *She$_i$ knows [that Ottilie likes Claudia$_i$]

In both these examples, the pronoun *She* binds (i.e. c-commands and is co-indexed with) the referential expression *Claudia*, and thus *Claudia* is not free, in violation of Condition C.

Given the contrast between (57b) and (58b), one can choose between the lexicalist and syntactic approaches by asking whether the phonologically-null argument associated with the incorporated noun in the embedded clause can be coreferential with the antecedent in the matrix clause. The *pro* argument in the lexicalist approach is subject to Condition B, whereas the trace in the syntactic approach is subject to Condition C. It is expected that if noun incorporation applies to the embedded clause, the incorporated noun in the lexicalist approach (i.e. the *pro* argument) can be coreferential with the matrix subject,

whereas the incorporated noun in the syntactic approach (i.e. the trace) cannot be coreferential with the matrix subject. This contrast is schematically represented in (59).

(59) a. $NP_i \ldots [_s \ldots V\text{-}N \ldots pro_i \ldots]$ *coreference allowed*
      b. $*NP_i \ldots [_s \ldots V\text{-}N \ldots t_i \ldots]$ *coreference disallowed*

If coreference between the incorporated noun and the matrix subject is possible, noun incorporation must be lexical. If the intended coreference fails to obtain, noun incorporation must be syntactic. With these predictions in mind, let us consider the Plains Cree sentences in (60). Note I assume following Baker's (1996) analysis of Mohawk that, whereas DP arguments in Plains Cree are base-generated in adjoined positions outside νP, CP-arguments are crucially generated in argument positions inside νP. This means that Conditions B and C will apply cross-clausally in Plains Cree, just as they do in English.

(60) a. Claudia kisk-êyiht-am(-w)   ê-pakam-ahw-ak
          C.   know-by.mind-I.TH-3 CONJ-hit-by.tool-1>3
          'Claudia$_i$ knows that I hit her$_i$'

      b. Claudia kisk-êyiht-am(-w)   ê-pakam-ahw-ak   *iskwêw*
          C.   know-by.mind-I.TH-3 CONJ-hit-by.tool-1>3 woman
          *'Claudia$_i$ knows that I hit a/the woman$_i$'

      c. Claudia kisk-êyiht-am(-w)   ê-pakam-ahw-*iskwêw*-ê-yân
          C.   know-by.mind-I.TH-3 CONJ-hit-by.tool-woman-INTR-1
          *'Claudia$_i$ knows that I hit a/the woman$_i$'

The first two examples demonstrate that Conditions B and C are operative in Plains Cree as in English. (60a) establishes that the pronominal object of the embedded clause can refer to the matrix subject, in accordance with Condition B. (60b) establishes that the referential object of the embedded clause *iskwêw* 'a/the woman' cannot refer to the same person as the matrix subject *Claudia* does, in accordance with Condition C. Now, in (60c), the embedded verbal complex contains the incorporated noun *-iskwêw* 'woman,' and this incorporated noun is intended to corefer with the matrix subject *Claudia*. Notice this sentence is ungrammatical under this interpretation. This fact follows only if the phonologically-null argument associated with the incorporated noun in (60c) is a trace, and Condition C rules it out on par with (60b). Postulation of a trace for the incorporated noun is characteristic of the syntactic approach, not of the lexicalist approach, which predicts that (60c) should be grammatical, as is (60a). Thus, it is concluded that Plains Cree noun incorporation must be analysed as a syntactic process, rather than a lexical process.

4.2.7.2 *Wh* Questions

Another of Baker's (1996:§7.4.4) tests to distinguish the lexicalist and syntactic approaches to noun incorporation concerns whether the content of the incorporated noun can be *wh*-questioned. In the lexicalist approach, the incorporated noun is associated with an argument in the internal argument position (in the transitive context). The *wh* question can target this argument on par with other argument expressions, and the outcome is expected to be well-formed. In contrast, in the syntactic approach, the incorporated noun itself is the internal argument; the internal argument can undergo either incorporation or *wh* movement, but not both at a time. Thus, the *wh* question that targets the incorporated noun is expected to be ill-formed in the syntactic approach. In short, the prediction concerning the choice between the two approaches to noun incorporation is the following: if one can *wh*-question the incorporated noun, it corroborates the lexicalist approach, whereas if one cannot *wh*-question the incorporated noun, it corroborates the syntactic approach. Bearing this prediction in mind, let us turn to the Plains Cree examples in (61).

(61)   a.   *awîna* ê-kisîpêk-in-at
                who   CONJ-wash-by.hand-2>3
                'who did you wash?'

        b.   ê-kisîpêk-in-*âwas*-o-yân
                CONJ-wash-by.hand-child-INTR-1
                'I washed a/the child'

        c.   *awîna ê-kisîpêk-in-*âwas*-o-yan
                who   CONJ-wash-by.hand-child-INTR-2
                'who (a child) did you wash?'

(61a) shows that one can ask the identity of the animate internal argument by means of *awîna* 'who' in Plains Cree.[20] If one attempts to form a *wh* question targeting the incorporated internal argument *âwas* 'child' in (61b) by means of *awîna* 'who,' then the ungrammatical sentence in (61c) results.[21] The ungrammaticality of this *wh*-questioned incorporative verbal complex follows if the internal argument is

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[20] For an extensive discussion of *wh* questions in Plains Cree, see Blain 1997.

[21] A modifier-type *wh* question is possible with the incorporative verbal complex, as argued to be the case in Baker 1996:§7.4.4.

(i)   *tânâna*   ê-kisîpêk-in-*âwas*-o-yan
        which.that CONJ-wash-by.hand-A.TH-3
        'which child is it that you washed?'

This is because the modifier-type *wh* phrase *tâni* 'which' in (i) (*tânâna* 'which one' consists of *tâni* 'which' and *ana* 'that') does not replace the incorporated noun per se, but its (determiner-like) modifier.

the trace of the incorporated noun, but not if it is an ordinary argument. Consequently, the *wh*-question diagnostic also favours a syntactic treatment of Plains Cree noun incorporation over a lexical treatment.

4.3 Medial Incorporation

Medials are *v*P-internal nominals on par with incorporated nouns. However, they must be treated differently from incorporated nouns for the three reasons discussed in §4.1. Let us recapitulate these reasons before explicating my analysis of medials.

First, while incorporated nouns follow the transitive suffix, medials precede the transitivity suffixes.

(62) a.   ni-nip-*ih*-*âwas*-o-n   *incorporated noun*
            1-sleep-TRAN-child-INTR-LCAL
            'I put a/the child/children to sleep'

      b.   kip-*âpisk*-*ah*-am(-w)   *medial*
            close-mineral-by.tool-I.TH-3
            's/he closed it with/as metal'

The incorporated noun -*âwas* 'child' follows the transitive suffix -*ih* in (62a), whereas the medial -*âpisk* 'mineral solid' precedes the transitive suffix -*ah* 'by tool' in (62b).

Second, while incorporated nouns cannot be left out of the verbal complex without incurring ungrammaticality, medials can.

(63) a.   *ni-nip-*ih*-o-n
            1-sleep-TRAN-INTR-LCAL

      b.   kip-*ah*-am(-w)
            close-by.tool-I.TH-3
            's/he closed it'

Removal of the incorporated noun -*âwas* 'child' from the verbal complex in (62a) results in the ill-formed verbal complex in (63a), whereas removal of the medial -*âpisk* 'mineral solid' from the verbal complex in (62b) results in the well-formed verbal complex in (63b).

Third, while incorporated nouns fail to interact with intransitives, medials do interact with intransitives, in particular static unaccusatives.

(64)   a.   mihkw-*â*-w
                  red-S.STAT-0
                  'it is red'

         b.   *mihkw-*â-yâkan*-ê-w
                  blood-S.STAT-dish-INTR-0
                  '[intended] the dish is red'

         c.   mihkw-*âpisk-â*-w
                  red-mineral-S.STAT-0
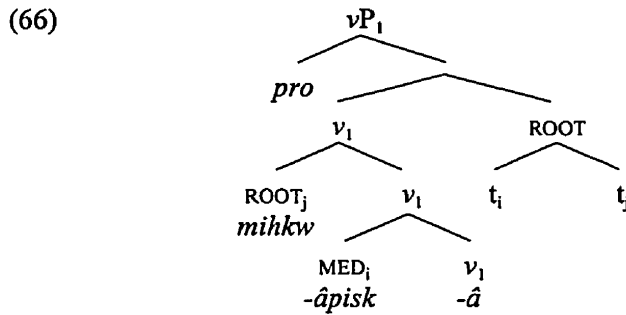   'it (metal) is red (e.g. rusty)'

The static verbal complex *mihkwâw* 'it is red' in (64a) fails to host the incorporated noun *-iyâkan* 'dish' (64b), but it can host the medial *-âpisk* 'mineral solid' (64c).

If my proposal is on the right track, the properties of medials that distinguish them from incorporated nouns must follow from my interpretation of medials as ROOT adjuncts. The verbal complex in (64c) is given the structural analysis in (65).

(65)   *mihkwâpiskâw*   'it (metal) is red (e.g. rusty)'
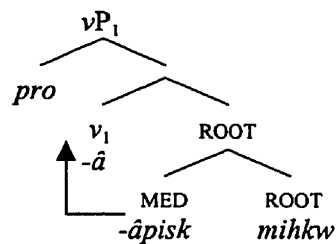
The linear ordering is captured if the medial *-âpisk* 'mineral solid' first left-adjoins to the inanimate static (spatial) suffix *-â* as v_1, and then the root *mihkw* 'red' left-adjoins to the resulting v_1 complex *-âpiskâ*. This derivation is illustrated in (66).

(66)

```
                              vP₁
                          ____/\____
                        pro         ____/\____
                                   v₁           ROOT
                                __/\__          /\
                           ROOTⱼ      v₁      tᵢ     tⱼ
                           mihkw    __/\__
                                 MEDᵢ      v₁
                                -âpisk     -â
```

The v_1 complex is linearly interpreted as a morpheme complex in which the medial -âpisk is preceded by the root mihkw and followed by the inanimate (spatial) static suffix -â. The optionality of medials follows from their adjunct status, unlike incorporated nouns originating from an argument position, Spec, vP. Medials can occur within the static intransitive verb stem because the ROOT-adjoined position, which medials occupy, is c-commanded by v_1. This allows medials to target v_1 without violating the C-Command Condition. This is not an option for incorporated nouns that are base-generated in Spec, vP_1.

In the remainder of this section, I first describe the three functions of medials in §4.3.1, and demonstrate how they follow from my postulation of medials as ROOT adjuncts in §4.3.2. I summarise this section in §4.3.3, noting that my syntactic analysis captures Denny's (1978) generalisation about the distribution of medials.

4.3.1 Three Functions of Medials

Medials are considered to play three modifying roles in the verb stem. They function either as the modifier of the root, or as the specified manner of the transitive suffix -ah 'by tool,' or as the internal argument. This section discusses each of these functions in turn.

First, medials that are here idendified as root modifiers are those that Denny (1978) regards as playing an "adverbial function." The boldfaced medials in (67) exemplify this function.

(67) a. sak-*icihcê*-n-ê-w   (Wolfart 1971:517)
          attach-hand-by.hand-A.TH-3
          's/he takes her/him *by* the hand [i.e. *x* hand-takes *y*]'

      b. nîm-*iskotê*-n-ê-w   (Wolfart 1971:517)
          aloft-fire-by.hand-A.TH-3
          's/he holds her/him *over* the fire by hand [i.e. *x* fire-holds *y*]'

Wolfart interprets the relevant medials -*icihcê* 'hand' and -*iskotê* 'fire' as serving a kind of locative function independently of the root, but Denny denies this interpretation (Denny 1978:155):

> Since there is no actual evidence that the medial *iskotê* 'fire' expresses a location, under the view I have been arguing this would be an adverbial use of the medial which converts the predicate [= root] *nîm* 'hold' [in (67b)] into the predicate *nîm-iskotê* 'fire-hold' or 'hold in relation to fire.' The locative notion *over* is supplied by the context but not expressed in the word.

Here, in line with Denny 1978, I take the above medials to be adverbial modifiers of the root (i.e. Denny's predicate), and consider that the locative interpretation arises only by pragmatic inference.

Second, there are cases in which medials modify (or are predicated of) the manner-specified transitive suffixes -*ah* (inanimate) and -*ahw* (animate) 'by tool.' Two exemplifying verbal complexes are given in (68).

(68) a. kask-*âpisk-ah*-am(-w)
          close-mineral-by.tool-I.TH-3
          's/he closes it with metal (i.e. canned it)'   (Wolfart 1971:517)

      b. paw-*âpisk-ahw*-ê-w
          brush-mineral-by.tool-A.TH-3
          's/he brushes her/him with/as metal'   (Wolfart 1971:511)

In both examples, the medial -*âpisk* 'mineral solid' renders the manner specification 'by tool' more specific, such that the tool involved is made of metal. Notice that the function of the relevant medial in (68b) is ambiguous, in that it can be interpreted as being predicated either of the internal argument (i.e. "as" metal) or of the transitive suffix -*ah* (i.e. "with" metal). A potential source for this ambiguity will be identified shortly.

The third function of medials, namely, as the modifier of the internal argument, is exemplified in the verbal complexes in (68).

(69)   a.   kinw-*âsko*-si-w
　　　　　　　　long-wood-STAT-3
　　　　　　　　's/he (tree) is long'

       b.   kâsiy-*âpisk*-ah-am(-w)
　　　　　　　　wipe-mineral-by.tool-I.TH-3
　　　　　　　　's/he wipes it as metal'   (Wolfart 1971:517)

The medials in these examples serve to narrow down the scope of the set of individuals that the predication applies to. In (69a), the medial *-âskw* 'wood' narrows down the set of individuals that are long—the information provided by the root *kinw* 'long'—to those that are long and woody. Likewise, in (69b), the medial *-âpisk* 'mineral solid' adds a piece of information to that offered by the root *kâsiy* 'wipe,' saying that something wiped must also be metallic. This is the sense in which I identify these medials as modifying the internal argument.[22]

Any attempt to formally characterise medials ought to capture the three functions I have just examined: as the adverbial modifier of the root, as the manner-specification modifier of the transitive suffixes *-ah* and *-ahw* 'by tool,' and as the modifier of the internal argument. The next subsection demonstrates how my formal system derives these three functions of medials. Moreover, it is argued that the ambiguity that can be observed in the verbal complex containing both the transitive suffix *-ah* and *-ahw* 'by tool' and the medial *-âpisk* 'mineral solid' follows from the hypothesis that medials undergo incorporation.

4.3.2 A Syntactic Account

The three modificational functions of medials described in the previous subsections reflect the three different entities that medials take scope over. Medials as root modifiers take scope over a root. Medials as manner-specification modifiers take scope over (the instrumental manner specified on) v_1. Medials as the internal-argument modifiers take scope over the internal argument. In order to constrain the scope of modifiers, I propose (70), cf. Sportiche 1998.

(70)   *Modification Principle*
　　　　A modifier takes scope over the syntactic object to which it is adjoined.
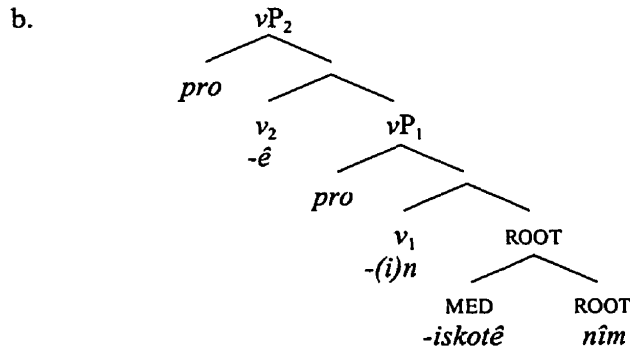
The Modification Principle ensures that in the schematic configuration in (71), α can modify β.

(71)

$$\beta$$
$$\textit{modifier} \rightarrow \alpha \qquad \beta$$
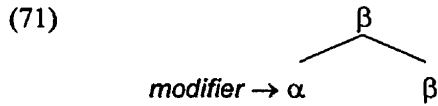
In the remainder of this subsection, I will show that the Modification Principle in conjunction with the postulation of medials as ROOT-adjuncts which undergo movement to adjoin to v_1, derives the three functions (and only these functions) of medials. Let us consider in turn how the three functions of medials are obtained.

First, medials as adverbial modifiers of the root satisfy the Modification Principle straightforwardly; MED adjoins to ROOT, over which it has its semantic scope. The root modifier interpretation of the verbal complex in (72a) is represented by (72b).

(72) a. nîm-*iskotê*-n-ê-w   (Wolfart 1971:517)
          aloft-fire-by.hand-A.TH-3
          's/he holds her/him *over* the fire by hand [i.e. *x* fire-holds *y*]'

      b.

$$vP_2$$
$$pro$$
$$v_2$$
$$-\hat{e}$$
$$vP_1$$
$$pro$$
$$v_1$$
$$-(i)n$$
$$ROOT$$
$$MED \qquad ROOT$$
$$-iskot\hat{e} \qquad n\hat{i}m$$

The medial *-iskotê* 'fire' is adjoined to the root *nîm* 'hold.' This is the configuration in which the medial can modify the root in accordance with the Modification Principle.

Next, consider medials as modifiers of the manner specification of the transitive suffixes *-ah* and *-ahw* 'by tool.' This is where incorporation kicks in. To illustrate, consider the verbal complex in (73a),

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[22] Medials which act as modifiers of the internal argument are regarded as "nominal classifiers" by Denny (1978), which are equivalent to what Mithun (1984) calls "Type IV" noun incorporation.

which contains the medial *-âpisk* 'mineral solid.' If this medial undergoes movement, and adjoins to the left of *-ah* 'by tool' as v_1, then the configuration in (73b) emerges:

(73) a. kip-***âpisk***-***ah***-am(-w)
close-mineral-by.tool-I.TH-3
's/he closed it with/as metal'

b.
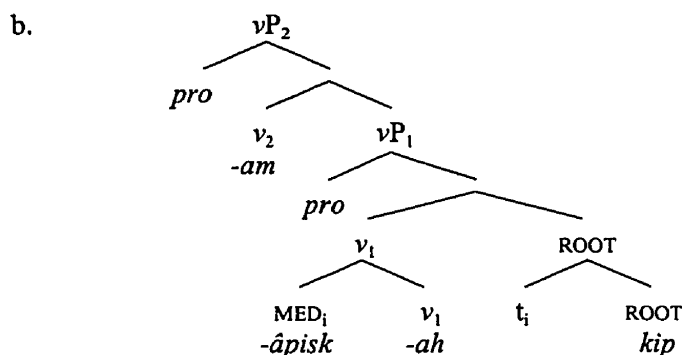
The adjunction of the medial *-âpisk* 'mineral solid' as MED to the transitive suffix *-ah* 'by tool' as v_1 results in exactly the configuration in which MED can modify v_1 in accordance with the Modification Principle. Consequently, the complex v_1 *-âpiskah* in (73b) means 'by metal.'

Finally, consider medials as internal-argument modifiers. If the Modification Principle is to govern this modification as well (which is the null hypothesis), a medial that modifies the internal argument must adjoin to the internal argument *pro* in Spec, vP_1. This is a configuration that fails to arise, however, given the proposed characterisation of a medial as a syntactic object that is base-adjoined to ROOT, and undergoes movement to adjoin to v_1. Hence, one needs to seek another possibility that gives rise to the same effect. What is available for medials as internal-argument modifiers to be governed by the Modification Principle? As an answer to this question, I point out the presence of the theta-role feature on v_1 (i.e. $\{\theta\}$), which is assigned to the internal argument in Spec, vP_1. Notice the theta-role feature is specified on v_1, on par with the instrumental manner. It then is reasonable to assume that the configuration allows a medial to modify not only the instrumental manner specified on the transitive suffix *-ah* 'by tool' as v_1 (i.e. the post-incorporation configuration), but also the theta-role feature specified on the same transitive suffix. Thus, I am proposing that the interpretive ambiguity of the medial *-âpisk* 'mineral solid' in (73a) between the manner-specification and the internal-argument modifier originates from the fact that the transitive suffix *-ah* 'by tool' is specified for both an

instrumental manner and a theta-role, and the incorporated medial -âpisk 'mineral solid' enters into the modification relation with these two specifications simultaneously.[23]

4.3.3 Summary

In sum, if medials are base-generated as adjuncts to ROOT, and undergo movement to v_1, their positively-defined characteristics follow without ad hoc stipulation. Moreover, the present proposal accounts for the negatively-defined characteristic of medials, which Denny (1978:154) characterises with the following remark:

(74)   No cases of medials classifying the subject of a transitive verb have been noticed.

The subject of a transitive verb is the external argument. In a double-layered vP structure, the external argument is generated in Spec, vP_2, and is assigned a theta-role by v_2. To modify the external argument, a medial must adjoin to v_2, so that the medial enters into the modification relation with the theta-role feature on v_2. This satisfies the Modification Principle. I propose, however, that this adjunction is ruled out by (75), the condition imposed on medial incorporation.

(75)   *Medial Condition*
        A medial targets the closest *v* head.

The notion of "closest head" is defined in (76).

(76)   *Closest Head*
        α is the closest head for β iff
        a.   α asymmetrically c-commands β, and
        b.   there is no head γ such that α asymmetrically c-commands γ, and γ asymmetrically
                c-commands β.

Given (76), v_2 is not the closest v head for a medial, as v_2 asymmetrically c-commands v_1, and v_1 in turn asymmetrically c-commands the medial adjoined to ROOT. Consequently, the long-distance movement schematically described in (77) cannot take place.

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[23] This may imply that only a conjunctive interpretation (i.e. 'with *and* as metal') obtains, and a disjunctive interpretation (i.e. 'with *or* as metal') fails to obtain, which is untrue. I stipulate that a medial adjoined to the

(77)
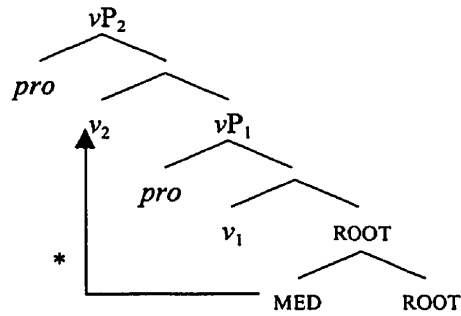
Because this illicit movement is the only way to accomplish the required adjunction configuration, external-argument modification is excluded in a principled fashion. As a result, Denny (1978:155) is incorrect in saying the following:

> In fact, the subject-classifying function has not been observed [in the transitive context], although it *cannot be ruled out*. However, in all the verbs examined the medial cannot classify the subject and therefore has an adverbial function. [italics added]

"The subject-classifying function" is properly ruled out, given the double-layered vP structure, the base-generated position of medials, and the distance of the movement that medials undergo. Being base-adjoined to ROOT, the target of medial incorporation is always v_1, the local v head. This conforms to the Medial Condition.

An apparent counterexample to Denny's generalisation is found in Ahenakew 1989:54, which is given in (78).[24]

(78) ê-kakwêc-im-â-t   kîspin   ka-kî-micim-*âskw-aho*-ko-t
      CONJ-ask-by.speech-3 if   FUT-PAST-hold-wood-by.tool-INV-3
      'he asked them if they (i.e. birch trees) would hold him fast'

This is the utterance in which the cultural hero *wîsahkêcâhk* asks two birch tress if they will hold him fast. The medial *-âskw* 'wood' in the second verbal complex is thus associated with the two birches. Since these birches are the external argument of the predicate meaning 'x hold y,' the relevant medial appears to run counter to Denny's generalisation, which states that no medial that classifies the subject of a transitive verb (i.e. the external argument) has been noticed. Denny's generalisation can remain intact, however, if one argues that what the medial *-âskw* 'wood' classifies in (78) is not the external argument

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transitive suffix *-ah* and *-ahw* 'by tool' can modify either their instrumental manner or theta-role feature, but not both at the same time. Whether the conjunctive interpretation is available at all remains to be investigated, however.

per se (or the theta-role feature on v_2), but the transitive suffix *-ahw* 'by tool' in v_1. Under this interpretation, the two birch trees are holding *wîsahkêcâhk* by themselves (i.e. by wood). This is how I maintain Denny's generalisation, which is predicted by the syntactic analysis of medials proposed here.[25]

4.4 A Note on Morpheme Linearisation

If my analysis of incorporated nouns and medials is correct, both *v*P-internal nominals undergo Move, and adjoin to the target *v* in conformity with their respective locality condition. To recaptulate, consider an instance of noun incorporation, as shown below.

(79)   a.   kisîpêk-in-*iyâkan*-ê-w
                   wash-by.hand-dish-INTR-3
   's/he does the dishes'

a.
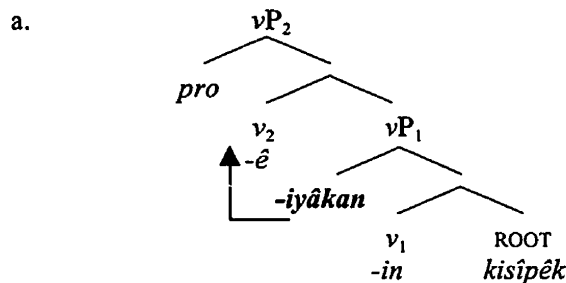
The internal argument *-iyâkan* 'dish,' which is the closest argument, incorporates into the intransitive suffix *-ê* as v_2, which is of the "right kind." This is consonant with the Target Condition. Recall, however, that incorporated nouns and medials are not the only *v*P-internal syntactic objects that undergo Move in the syntax, targeting a *v* head. As proposed in §3.1.2, ROOT and *v*s also undergo successive Move into a *v* head. This is illustrated by (80).

[25] Attention ought to be paid, however, to the fact that the relevant verbal complex is in the inverse form, rather than the direct form. If it is always the case that "apparent" counterexamples to Denny's generalisation emerge only in the inverse context, I may be missing an important descriptive generalisation, which will require an entirely different interpretive mechanism of medials, cf. §6.2.7.

(80) a. [_{vP} kisîpêk-in-am](-w) wiyâkan
          wash-by.hand-I.TH-3   dish
          's/he washes a/the dish'

  b. *movement of ROOT to v₁*
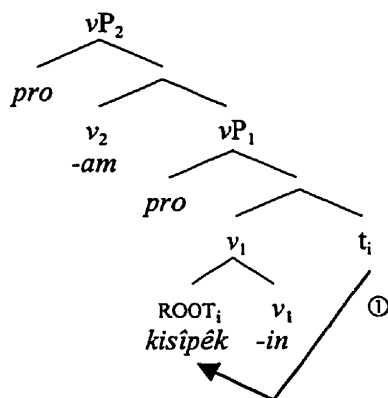
  c. *movement of the v₁ complex to v₂*
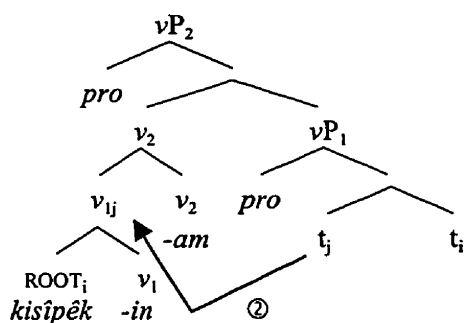


First, Move applies to *kisîpêk* 'wash' as ROOT, and adjoins it to the transitive suffix *-in* 'by hand' as v_1 (80b), and then to the resulting v_1 complex, and adjoins it to the inanimate theme sign *-am* v_2 (80c). Thus, in incorporative verbal complexes, all *v*P-internal syntactic objects—ROOT, the incorporated noun, and *v*s—undergo Move.

If so, a question arises as to which syntactic object takes precedence in targeting v_2: is it the incorporated noun (i.e. the internal argument) or the complex v_1? I illustrate this situation by means of the incorporative verbal complex in (81a). At the point when ROOT *kisîpêk* 'wash' has incorporated into v_1—the transitive suffix *-in* 'by hand'—the double-layered *v*P has the representation in (81b).

(81) a. [$_{\nu P}$ kisîpêk-in-*iyâkan*-ê]-w
wash-by.hand-dish-INTR-3
's/he does the dishes'

b.
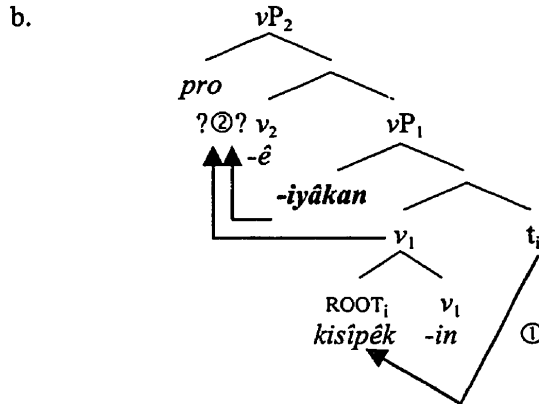
The question under consideration is whether it is the internal argument -*iyâkan* 'dish' or the complex v_1 *kisîpêkin* 'x washes y' that first moves to v_2, the intransitive suffix -*ê*. As demonstrated (in an abbreviated fashion) in (82), if the internal argument moves first, then the correct morpheme order obtains (82a). If the complex v_1 moves first, however, an incorrect morpheme order emerges (82b).

(82) a. *internal argument moves first*
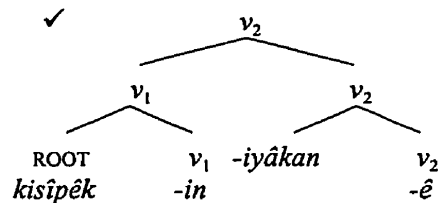
b. *complex v$_1$ moves first*
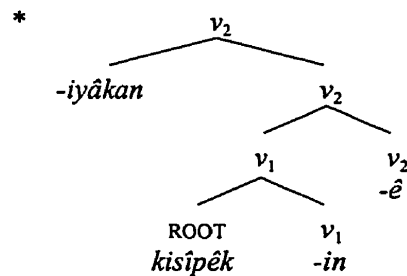
Thus, the internal argument must move to v_2 earlier than the v_1 complex. The next question therefore is what principle derives this effect. One most likely candidate is the "Minimal Link Condition" (adapted from Chomsky 1995:311).

(83)　*Minimal Link Condition (MLC)*

α targets β only if there is no γ, γ closer to β than α, such that γ targets β.

The notion of "closeness" used in MLC is defined as follows:

(84)　*Closeness*

α is closer to β than γ iff

a.　β asymmetrically c-commands α and γ, and

b.　α asymmetrically c-commands γ.

The MLC gives us the desired result. In (81b) above, the internal argument *-iyâkan* 'dish' is closer to the animate intransitive suffix *-ê* as v_2 than the complex v_1 *kisîpêkin* '*x* washes *y*.' This is because v_2 asymmetrically c-commands both the internal argument and the complex v_1, and the internal argument in turn asymmetrically c-commands the complex v_1. Hence, by the MLC, it is the internal argument *-iyâkan* 'dish' that first incorporates into the animate intransitive suffix *-ê* as v_2, giving rise to the correct configuration in (82a).

The MLC, however, cannot predict the correct morpheme order for medial incorporation, at least not as straightforwardly as for noun incorporation. This is because there is no asymmetric c-command relationship between the medial and the root.

(85)　a.　kinw-*âsko*-si-w

long-wood-STAT-3

's/he (tree) is long'

b.
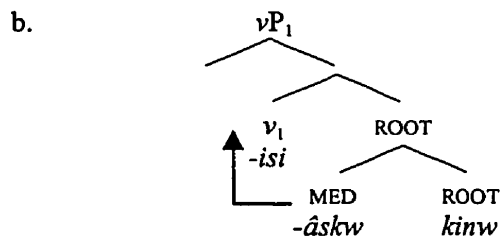
As a sister to one another, neither MED *-âskw* 'wood' nor ROOT *kinw* 'long, tall' asymmetrically c-commands the other in (85b); they mutually c-command one another. Thus, the MLC should allow for not only the derivation in (86a), which derives the correct morpheme order, but also the unwanted derivation in (86b), which derives an incorrect morpheme order.

(86) a. *MED moves first*

✓

```
                    νP₁
            _____|_____
          ν₁              ROOT
     _____|_____        ___|___
  ROOTⱼ      ν₁      tᵢ      tⱼ
  kinw     __|__
        MEDᵢ    ν₁
        -âskw   -isi
```

b. *ROOT moves first*

*

```
                    νP₁
            _____|_____
          ν₁              ROOT
     _____|_____        ___|___
  MEDⱼ      ν₁       tⱼ      tᵢ
 -âskw    __|__
       ROOTᵢ    ν₁
       kinw    -isi
```
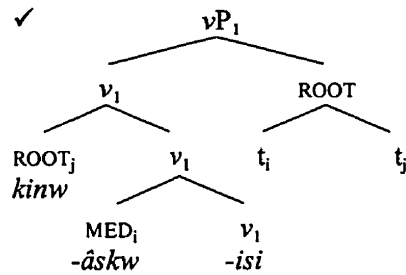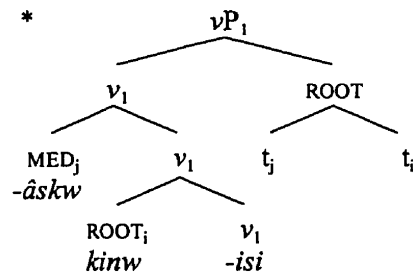
To obtain the desired result, one can define c-command in such a way that an adjunct can c-command the adjunction host, but the reverse fails to hold (Kayne 1994). This option allows MED to asymmetrically c-command ROOT, the first being adjoined to the second. Or instead, in the spirit of Chomsky (1999), one might claim that only incorporated nouns and medials move in the syntax; all the other νP-internal syntactic objects move in the phonology. This division of labour enables incorporated nouns and medials to adjoin to their target earlier than any other affixes sharing the same target, provided that syntax precedes phonology, the familiar derivational architecture. I leave the choice open.

4.5 Conclusion

This chapter has argued that two predicate-internal nominals in Plains Cree—incorporated nouns and medials—are characterised as undergoing Move or incorporation into a *v*. As is expected of syntactic objects that undergo movement in the syntax, incorporated nouns and medials exhibit c-command and locality effects. If noun and medial incorporations are in fact syntactic phenomena, then the verbal complex, within which these incorporations take place, must also be characterised in syntactic terms. Thus, the syntactic nature of noun and medial incorporation lends support to my syntactic analysis of (the predicate portion of) verbal complexes. The goal of this chapter is, therefore, accomplished.

Plains Cree incorporation phenomena are unique in two notable respects. First, noun incorporation fails to apply to both static and dynamic unaccusatives, contrary to what is observed in some other polysynthetic languages. The failure of noun incorporation in unaccusatives in Plains Cree, however, follows from the vP structures assigned to them, plus, for dynamic unaccusatives, a special reflexivisation mechanism in the form of double theta-role checking. Second, medial incorporation is an instance of adjunct incorporation. Adjunct incorporation, however, is ruled out in the conventional phrase structure, where there is a single V head. An adjunct is not a sister to V, but adjoined to V' or VP. Consequently, V, the target of incorporation, would not c-command the adjunct's trace position. In contrast, in the proposed vP structures, medials are ROOT-adjuncts, and as such, they can incorporate into v_1, the local v head. Given that the proposed system that allows for both argument and adjunct incorporation, there is no a priori reason to block the two incorporation processes from taking place simultaneously in a verbal complex. At this moment, there is no data available to confirm (or disconfirm) this prediction.

I leave open, along with several others, the issue of identifying the driving force of noun and medial incorporations. Baker's (1996) Morphological Visibility Condition (MVC), to the effect that phonologically-overt argument nominals within verbal complexes undergo syntactic incorporation for the purpose of theta-role assignment, may be applicable to noun incorporation because incorporated nouns are arguments. However, the MVC fails to apply to medial incorporation because medials are adjuncts; they are not assigned a theta-role. Thus, as far as medials are concerned, one must resort to something other than the MVC for the driving force of incorporation. It may be the case that the driving force of noun/argument incorporation and that of medial/adjunct incorporation differ, a possibility that is suggested by two distinct conditions imposed on the two incorporation processes, viz. the Target Condition and the Medial Condition. It may also be possible that there is a uniform driving force for noun and medial incorporations. If so, whatever it turns out to be, this driving force must be something that capitalises on the nominal nature of incorporated nouns and medials occurring within the verbal complex.

It is true that in my analysis of Plains Cree noun incorporation phenomena, there remain several issues yet to be settled, including the issue of motivation mentioned above. Nevertheless, the preceding sections have revealed that syntax (as implemented in terms of the proposed vP structures) provides insights into the properties of the two vP-internal nominals—properties that would have to be stipulated otherwise, as in templatic approaches to verbal complexes. Syntax rules Plains Cree verbal complexes.
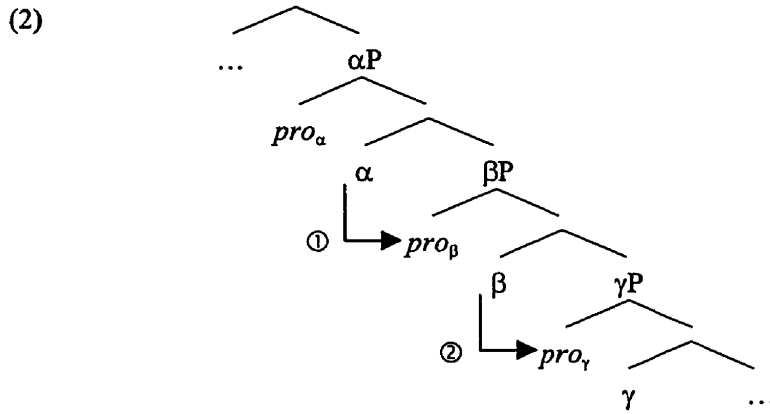
Chapter 5

*v*P Structures and Operator-Binding Phenomena
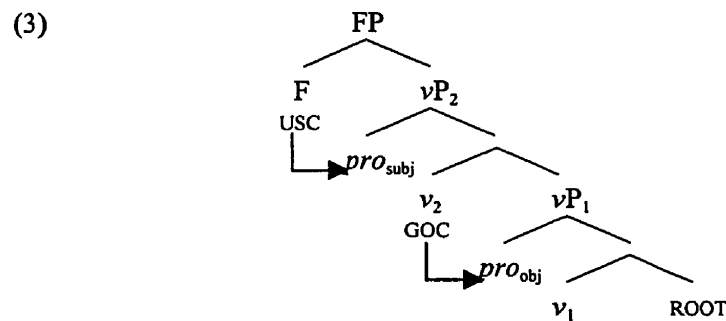
5.0 Introduction

The treatment of incorporated nouns and medials proposed in the previous chapter lends support to my syntactic analysis of Plains Cree verbal complexes (or the predicate portion thereof) in terms of stacked *v*P-structures. This chapter argues that these two incorporation phenomena are not isolated cases. To be added to the inventory of syntactic processes internal to the verbal complex are the "Generic Object Construction" (GOC) and the "Unspecified Subject Construction" (USC). These two constructions are exemplified by (1a) and (1b).

(1)   a.   [sâk-ih-*ikê*]-w   *generic object construction*
                love-TRAN-G.OBJ-3
                's/he loves people'

       b.   ê-[sâk-ih-*ikawî*]-yêk   *unspecified subject construction*
                CONJ-love-TRAN-USC-2PL
                'you (pl.) are loved'   (Dahlstrom 1991:51)

       c.   [sâk-ih-*ê*]-w
                love-TRAN-A.TH-3
                's/he loves her/him'

Both constructions are triggered by a specific suffix. The GOC suffix is *-ikê* in (1a). (1b) has one of the many variants of the USC suffix *-ikawi*. Notice that both suffixes appear to occupy a position that is otherwise occupied by the animate theme sign *-ê* in (1c). This, however, does not necessarily mean that the relevant two suffixes occupy one and the same position, the position that the animate theme sign occupies (i.e. v_2). As their names suggest, these processes affect different grammatical functions. GOC affects the object whereas USC affects the subject. In the syntax, this difference can be captured in terms of c-command and locality. Consider the following schematic phrase structure:

(2)

```
        ...        αP
                 /    \
            pro_α      \
                    /      \
                  α         βP
                  |       /    \
                  ①──▶pro_β     \
                             /      \
                           β         γP
                           |       /    \
                           ②──▶pro_γ     \
                                        /    \
                                      γ       ...
```

The head α can affect pro_β in Spec, βP because α c-commands and is local to pro_β (①). For the same reason, the head β can affect pro_γ in Spec, γP (②). However, α does not affect pro_α in Spec, αP because α fails to c-command pro_α. Nor does α affect pro_γ in Spec, γP because α is not local to pro_γ, although the c-command relation holds properly. Likewise, β can affect neither pro_α or pro_β because β c-commands neither. Returning to the relevant two constructions, one can capture the difference in their effects if one postulates α and β as the loci of the USC suffix *-ikawi* and the GOC suffix *-iké*, respectively, and if pro_β and pro_γ are the subject and object, respectively. In my terminology, the subject pro_β is the external argument in Spec, vP$_2$, and the object pro_γ is the internal argument in Spec, vP$_1$. Accordingly, β and γ are v_2 and v_1, respectively. What is α? For the purpose of this chapter, I postulate it as a functional category that takes a vP as its complement. Let us call it F. In effect, we have arrived at the following phrase structure:

(3)

```
              FP
            /    \
          F       vP_2
         USC    /    \
          |──▶pro_subj  \
                     /      \
                   v_2       vP_1
                   GOC     /    \
                    |──▶pro_obj   \
                               /      \
                             v_1       ROOT
```

If this structure is correct, our initial impression that the GOC and USC suffixes occupy one and the same morphological position is false. This conclusion follows from my morpheme linearisation machinery. Recall from §3.1.2 that morpheme linearisation within vP is implemented by means of successive movement of syntactic objects. Suppose F also enters into this picture. Then one can predict

that the following linearisation of morphemes arises, v_2 and F being the GOC and USC suffix, respectively:

(4)   ... ROOT - v_1 - v_2 - F ...

In other words, my structural analysis of the GOC and USC suffixes proposed in (3) predicts that unless some co-occurrence restriction kicks in, the two constructions can apply simultaneously, which gives rise to the morpheme order schematically depicted in (4). The concluding section of this chapter demonstrates that this prediction is indeed borne out. Before presenting this grand finale, however, I will first examine these constructions in detail to confirm their syntactic nature.

The remaining portion of the chapter proceeds in the following way. I argue in §5.1 that GOC is best analysed as involving a generic operator that binds the closest c-commanded argument. I also demonstrate that both unergatives and dynamic unaccusatives fail to undergo GOC, and I aldo argue that GOC is ruled out with these verbs for different reasons. In §5.2, I introduce Déchaine and Reinholtz' (1998) analysis of the transitive-based USC, according to which the USC suffix in F is an existential operator that binds the closest c-commanded argument, which triggers movement of the non-local argument over the local argument. I also replicate Dahlstrom's (1991) argumentation to empirically motivate the movement portion of Déchaine and Reinholtz' analysis of USC. Of relevance is the "Copying-to-Object" (CTO) phenomenon in Plains Cree. I conclude, however, that movement of the non-local argument is optional, as USC applies to all verb types, including static unaccusatives, which contain only one argument.

5.1 Generic Object Construction

Suffixation of *-iké* to a transitive verb stem derives an intransitive verb stem whose internal argument is interpreted as expressing generic plurality (i.e. 'things' or 'people') (Wolfart 1973:72).[1] I call the outcome of this derivation the "Generic Object Construction" (GOC). The (a) examples in (5) and (6) exemplify GOC.

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[1] For morphophonological reasons, Wolfart (1973:72) postulates two separate GOC suffixes *-ké* and *-iké* for two separate inflectional sets of transitive verbs, those with an animate internal argument and those with an inanimate internal argument. I abstract away from this issue here. There is another GOC suffix *-iwé*, which is suffixed to transitive verbs that categorically select only an animate internal argument (Wolfart 1973:72). I do not examine it in this section, expecting it to behave on par with *-iké*.

(5) a.   tahk-isk-*ikê*-w
          kick-by.foot-G.OBJ-3
          's/he kicks things'

     b.   tahk-isk-am(-w)
          kick-by.foot-I.TH-3
          's/he kicks it'

(6) a.   sâk-ih-*ikê*-w
          love-TRAN-G.OBJ-3
          's/he loves people'

     b.   sâk-ih-ê-w
          love-TRAN-A.TH-3
          's/he loves her/him'

The verb stem in *tahkisk* 'x kicks y (inanimate)' in (5) is a transitive verb stem that requires the internal argument to be inanimate. Suffixation of the generic object suffix *–ikê* gives rise to a generic plural ('things') reading for the internal argument in (5a). In contrast, the verb stem *sâkih* 'x loves y (animate)' in (6) is a transitive verb stem that requires the internal argument to be animate. GOC, therefore, gives rise to an animate generic plural interpretation ('people') for the internal argument in (6a).

In this section, I propose that the GOC suffix *-ikê* be identified as a generic operator that locally binds a *pro* argument. In §§5.1.1–5.1.3, I examine the application of GOC to three verb types I have analysed in terms of a double-layered *v*P. It turns out that GOC applies to transitives, whereas it fails to apply to unergatives and dynamic unaccusatives. I argue that the failure of GOC to apply to unergatives and dynamic unaccusatives is expected, given my analysis of these verb types. I propose that GOC is ill-formed in these cases due to either vacuous quantification (for unergatives) or violation of a locality (or minimality) condition imposed on A-chains (for dynamic unaccusatives). Then in §5.1.4, I examine application of GOC to applicatives, which I have analysed by means of a triple-layered *v*P. I show that despite the English translation of the applicative-based GOC in which both the applicative and internal arguments appear to be generically bound, it is in fact only the applicative argument that is generically bound by the GOC suffix. I argue that this is because the applicative argument, but not the internal argument, is the local argument for the GOC suffix in v_3. §5.1.4 summarises the section.

5.1.1 Double-Layered *v*P I: Transitives

In this subsection, I propose an analysis of GOC as applied to transitives, the class of verbs that are assigned a double-layered *v*P. I demonstrate that the postulation of the GOC suffix *-iké* as v_2 can appropriately explain the interpretation of the transitive-based GOC. To illustrate, the transitive-based GOC in (5a) is given the structural analysis in (7).

(7)   *tahkiskikêw*   's/he kicks things'
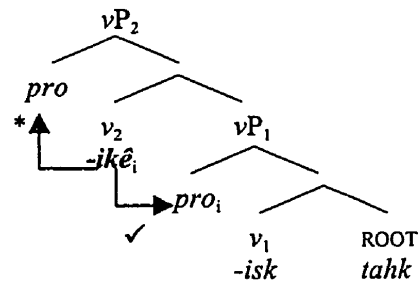
Like other operators, the scope of the generic operator *-iké* is defined in terms of c-command. The GOC suffix *-iké* as the generic operator in v_2 c-commands and thus binds the internal argument in Spec, vP$_1$, by virtue of which the latter is interpreted as generic. The external argument in Spec, vP$_2$ is not interpreted as generic because the generic operator in v_2 fails to c-command it. Thus, in this analysis, the reason that GOC targets the internal argument follows from the postulation of the GOC suffix *-iké* as a generic operator or binder occupying v_2.[2]

In the next two subsections, however, we will see that, unlike transitives, unergatives and dynamic unaccusatives fail to undergo GOC, although the latter two verb classes are also analysed by means of a double-layered *v*P. I argue that their failure to undergo GOC can be explained on the basis of the different properties I have acribed to these verb types.

---

[2] The other conceivable approach is to split the generic object suffix *-iké* into *-ik* and *-é* in line with Denny 1984:258. One can take *-ik* as a "generic nominal constant" and *-é* as the animate intransitive suffix. Given this morpheme split, one may propose that the generic nominal constant *-ik* targets and incorporates into the animate intransitive suffix *-é* as v_2, on par with the majority of incorporated nouns discussed in the previous chapter.

5.1.2 Double-Layered *v*P II: Unergatives

As is now familiar, the verb stem *kimoti* '*x* steal (*y*)' can be used both transitively (8a) and unergatively (8b) with no morphological or inflectional alteration (though in principle, the verbal complex in (8b) is transitively interpretable as 's/he steals it/her/him'). Despite the availability of the transitive use, however, there is no GOC stem *kimocikê, as (8c) demonstrates.

(8)   a.   kimot-i-w   maskihkîs-a
                    steal-INTR-3 candy-PL
                    's/he steals candies'

        b.   kimot-i-w
                    steal-INTR-3
                    's/he steals'

        c.   *kimoc-*ikê*-w   ($t \rightarrow c$ / __ *ikê*)
                    steal-G.OBJ-INTR-3

The two language consultants in fact gave me (8b) as conveying the intended meaning of the ill-formed verbal complex in (8c), when I asked "Then how do you say 's/he steals things' in Cree?"

I understand this result to reveal two things. First, it empirically justifies the hypothesis that the unergative use of the verb stem *kimoti* '*x* steals (*y*)' projects the phonologically-null generic (i.e. [–SQA]) constant in Spec, *v*P₁. Second, it suggests that without an independently-occurring nominal that corresponds to the internal argument, the default interpretation of the relevant verb stem is unergative, not transitive. If the unergative interpretation is the default for the verb stem *kimoti* '*x* steals (*y*),' in which case the internal argument is a phonologically-null generic constant, it is likely that faced with the illicit GOC verbal complex (8c), Cree speakers associate it with the *v*P structure in (9).

(9)   *kimocikêw
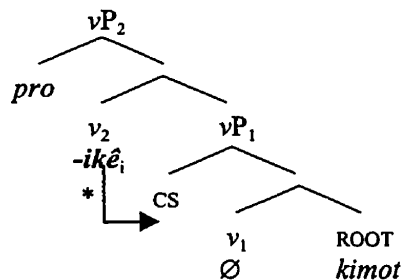
The phonologically-null internal argument in Spec, vP_1 is the meaningless cognate object constant. Although the generic operator *-ikê* as v_2 c-commands this constant, the latter cannot function as a variable for the generic operator, as it is a constant. In other words, the above configuration exemplifies a case of "vacuous quantification" in which the generic operator *-ikê* fails to bind a variable. This is a violation of the ban on "vacuous quantification" in natural language, to the effect that an operator must bind (at least) one variable (May 1977). This is how the ungrammaticality of (8c) is explained under my assumptions.

5.1.3 Double-Layered *vP* III: Dynamic Unaccusatives

Dynamic unaccusatives, though analysed by means of a double-layered *v*P structure, cannot give rise to a well-formed GOC either. The following (b) examples illustrate this:

(10)   a.   pîko-payi-w-ak môniyâw-ak
                break-INCH-3-PL white.person-PL
                '(the) white people went broke'

        b.   *pîko-payi-*kê*-w-ak
                break-INCH-G.OBJ-INTR-3-PL

(11)   a.   tiht-ipayi-w-ak misatimw-ak
                roll-INCH-3-PL   horse-PL
                '(the) horses tumbled over'

        b.   *tiht-ipayi-*kê*-w-ak
                roll-INCH-G.OBJ-INTR-3-PL

The GOC verbal complex in (10b) does not mean 'people went broke' nor does (11b) mean 'animate beings tumbled over.' I propose that these GOC verbal complexes are also illicit due to a locality condition imposed on A-chains. To see this, the structural analysis of (11b) is given in (12).

(12)   *tihtipayikêw
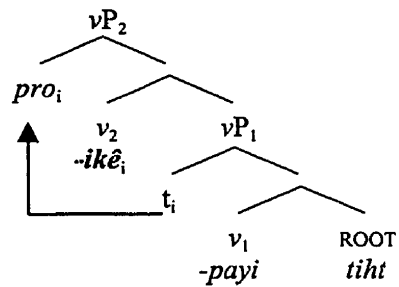
After being introduced in Spec, νP_1, the internal argument moves to Spec, νP_2, where it is licensed as the "energy source" argument by checking ν_2's theta-role feature. The movement of the internal argument can be considered to be an instance of "A-movement," since it takes place between two argument positions. In the present case, therefore, the moved internal argument *pro* and its trace form an A-chain (pro_i, t_i). If Lasnik and Saito (1992) are correct in saying that syntactic objects that constitute an A-chain must be in a local binding relation to one another, then the ungrammaticality of (10b) and (11b) follows, since the generic binder -*ikê* intervenes between the head of the chain pro_i and its tail t_i. The condition imposed on A-chains is given in (13), adopted from Lasnik and Saito 1992:93.

(13)   In an A-chain of the form ($\alpha_1,...\alpha_i$, $\alpha_{i+1},..., \alpha_n$), α_i must locally A-bind α_{i+1}.

The definition of local binding referred to in (13) is given in (14), adopted from Lasnik and Saito 1992:195.

(14)   *Local Binding*
       α locally binds β iff
       a. α binds β, and
       b.   there is no γ that binds β and is bound by α.

This definition of local binding is blind to the A/A-bar status of α, β, and γ. Therefore, -*ikê*, which is in an A-bar position by definition, meets the definition of γ in (14). Consequently, the A-chain (pro_i, t_i) becomes illicit as per (13), accounting for the ungrammaticality of GOC applied to dynamic unaccusatives.

5.1.4 Triple-Layered *v*P: Applicatives

A triple-layered *v*P is used to analyse applicatives. Applicatives (i.e. those that are marked with the applicative suffix *-amaw*) have three arguments, the external, applicative, and internal arguments, from top to bottom in the triple-layered *v*P. Among these three, which argument or arguments does GOC target? If the GOC suffix *-ikê* is generated as v_3, the topmost *v*, the external argument will be excluded as a candidate. Then which of the remaining two arguments, the internal or the applicative argument, does GOC target? Or does it target both? The verbal complexes (16a)–(18a) show that GOC appear to target both the applicative and internal arguments.[3]

(16) a.   wî-ht-amâ-*kê*-w   (*amaw* + *ikê* → *amâkê*)
               tell-by.speech-APPL-G.OBJ-3
               's/he makes predictions'   (Wolfart 1973:72)

       a.   wî-ht-amaw-ê-w
               tell-by.speech-APPL-A.TH-3
               's/he told her/him about it/her/him'

(17) a.   ni-kiskino-h-amâ-*kâ*-n   (*amaw* + *ikâ* → *amâkâ*)
               1-teach-TRAN-APPL-G.OBJ-LCAL
               'I teach'

       b.   ni-kiskino-h-amaw-â-wak   awâsis-ak
               1-teach-TRAN-APPL-A.TH-3PL child-PL
               'I teach (it to) (the) children'

(18) a.   Claudia yôhtê-n-amâ-*kê*-w   (*amaw* + *ikê* → *amâkê*)
               C.   open-by.hand-APPL-G.OBJ-3
               'Claudia opens'

       b.   Claudia yôhtê-n-amaw-ê-w   iskwâhtêm ayisiyiniw-a
               C.   open-by.hand-APPL-A.TH-3 door   person-OBV
               'Claudia opens the door for people'

The GOC verbal complexes in (16a)–(18a) are based on the applicative verb stems *wîhtamaw* '*x* tells *y* about *z*,' *kiskinohamaw* '*x* teaches *y* *z*,' *yôhtênamaw* '*x* opens *y* for *z*,' respectively. According to the translations given for these GOC verbal complexes, both the applicative and internal arguments are interpreted as generic. They may well even be translated as 'I am a fortune-teller,' 'I am a teacher,' and 'I am a doorperson,' respectively. Furthermore, the ill-formedness of the sentences in (19) appears to

show that both the applicative and internal arguments are interpreted as generic in the applicative-based GOC, since neither can be expressed overtly.[4] Both (19a) and (19b) contain a GOC verbal complex and two phonologically-overt expressions (i.e. adjuncts) that are meant to be associated with the applicative and internal arguments.

(19) a. *ni-kiskino-h-*amâ-kâ*-n   awâsis-ak nêhiyawêwin
          1-teach-TRAN-APPL-G.OBJ-LCAL child-PL   Cree

      b. *Claudia yôhtê-n-amâ-*kê*-w   iskwâhtêm-a ayisiyiniw-a
          C.   open-by.hand-APPL-G.OBJ-3 door-PL   person-OBV

On the assumption that generically-bound (or more generally, quantified) arguments fail to license associated phonologically-overt expressions, the ungrammaticality of these GOC verbal complexes follows.

This argument is indecisive, however. This is because the sentences in (20) remain ungrammatical even if only one of the two arguments (i.e. applicative or internal) is generically bound, as shown by the following examples:

(20) a. *ni-kiskino-h-*amâ-kâ*-n   awâsis-ak
          1-teach-TRAN-APPL-G.OBJ-LCAL child-PL

      b. *Claudia yôhtê-n-amâ-*kê*-w   ayisiyiniw-a
          C.   open-by.hand-APPL-G.OBJ-3 person-OBV

(21) a. ni-kiskino-h-*amâ-kâ*-n   nêhiyawêwin
          1-teach-TRAN-APPL-G.OBJ-LCAL Cree
          'I teach Cree'

      b. Claudia yôhtê-n-amâ-*kê*-w   iskwâhtêm
          C.   open-by.hand-APPL-G.OBJ-3 door
          'Claudia opens the door for people'

On one hand, the sentences in (20) each contain a phonologically-overt expression that corresponds to the applicative argument, and they are ill-formed. On the other hand, the sentences in (21) each contain a phonologically-overt expression that corresponds to the internal argument, and they are well-formed.

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[3] The form of *-ikâ* is a variant of *-ikê*, which is used with a local (i.e. 1st or 2nd person) subject in the independent order.

[4] Bloomfield (1962:279) translates the Menomini dative-based GOC *me ʼkow* as 'he gives something to someone, to people,' as if both the internal and applicative arguments are generically (or existentially?) bound.

Continuing to assume that an argument expression bound by an operator fails to be associated with a phonologically-overt expression, the grammaticality contrast between (20) and (21) suggests the following: in the applicative-based GOC, it is only the applicative argument that is generically bound; the internal argument is not generically bound. This follows if the GOC suffix *-ikê* is a local binder, which occupies the v_3 position in the applicative triple-layered vP, and binds the closest argument *pro* that it c-commands, i.e. the local argument. The definition of the closest argument is repeated in (22).

(22)   *Closest Argument*
    α is the closest argument for a head β iff
    a. β asymmetrically c-commands α, and
    b.   there is no argument γ such that β asymmetrically c-commands γ, and γ asymmetrically c-commands α.

The relevant closest argument *pro* for the GOC suffix in v_3 is the applicative argument in Spec, $v\mathrm{P}_2$, as there is no argument that satisfies (22b). To illustrate, (23) is the representation of the applicative-based GOC verbal complex *nikiskinohamâkân* 'I teach.'

(23)   *nikiskinohamâkân*   'I teach'
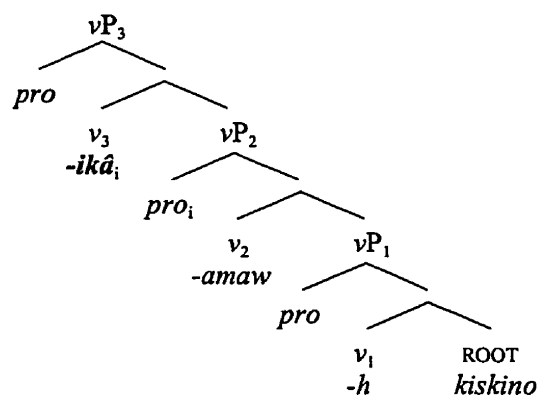
As the applicative argument *pro* in Spec, $v\mathrm{P}_2$ is locally bound by the generic operator *-ikâ* as v_3, it fails to license an associated phonologically-overt expression, as was observed in (20). In contrast, the internal argument *pro* in Spec, $v\mathrm{P}_1$ is not the closest argument for the generic operator *-ikâ* as v_3, as the applicative argument *pro* in Spec, $v\mathrm{P}_2$ qualifies as γ in (22b). As a result, the internal argument *pro* is not generically bound, and is thus able to license an associated phonologically-overt expression, as was observed in (21).

into 'someone, people' and 'something,' respectively for Menomini.

While it is true that the postulation of the GOC suffix -ikê as the local binder occupying v_3 accounts for the contrast between (20) and (21), it leaves unexplained the observation in (16a)–(18a) that in an applicative-based GOC, not only the applicative argument, but also the internal argument, appears to be generically interpreted. At this point, I have no explanation for this effect.

Finally, the proposed analysis of the GOC suffix -ikê as a local generic binder makes a specific prediction about the GOC verbal complex based on the root-only ditransitive miy 'x give y to z.' The verbal complex containing this ditransitive verb is analysed by means of a triple-layered vP in the dative alignment, in which Spec, vP_2 is occupied by the internal (or theme) argument, and Spec, vP_1 is occupied by the applicative argument. Given the local nature of the generic binding and the locus of the GOC suffix -ikê in v_3 in a triple-layered vP, it is predicted that it is the internal (or theme) argument in Spec, vP_2, not the applicative argument in Spec, vP_1, that is generically bound in the verbal complex constructed on the root-only ditransitive miy 'give.' Unfortunately, there is no available data to test this prediction, however. If the prediction is borne out, the GOC based on this prototypical ditransitive verb will lend further support to the structural analysis I have proposed.

5.1.5 Summary

In this section, I have argued that GOC is best described in operator-binding terms. In doing so, I have accomplished three things. First, the identification of the GOC suffix -ikê as v_2 (transitives) or v_3 (applicatives) in cooperation with its operator status explains why GOC is never "GSC" (i.e. Generic Subject Construction) in the first place. Second, GOC with unergatives or dynamic unaccusatives is ruled out for independently reasons. Third, the postulation of the GOC suffix -ikê as a local binder captures the fact that only the applicative, but not the internal argument, is generically bound in the applicative-based GOC. Since all these results are obtained via principles based on the elementary syntactic notion of c-command, they corroborate my syntactic treatment of Plains Cree verbal complexes.

5.2 Unspecified Subject Construction

This section examines the "Unspecified Subject Construction" (USC) in Plains Cree, which is exemplified by the verbal complexes in (24a) and (25a).

(24)   a.   ni-sâk-ih-*ikawi*-n
               1-enter-TRAN-USC-LCAL
               'someone loves me'

        b.   ni-sâk-ih-ik(w)-w-ak
               1-love-TRAN-INV-3-3PL
               'they love me'   (Dahlstrom 1991:51)

(25)   a.   ê-sâk-ih-*ikawi*-yêk
               CONJ-love-TRAN-USC-2PL
               'someone loves you (pl.)'

        b.   ê-sâk-ih-iko-yêk   -ok
               CONJ-love-TRAN-INV-2PL-3PL
               'they love you (pl.)'   (Dahlstrom 1991:51)

Judging from the given English translations, the USC verbal complexes may receive a passive interpretation. Thematically, the subject is the internal argument of the loving relation, and the external argument is missing. Compare these USC verbal complexes with their non-USC equivalents in (24b) and (25b), respectively, where not only the internal, but also the external argument appears in the translations. In other words, the external argument in USC is "suppressed" in the syntax. This is demonstrated by the fact that no phonologically-overt nominal can be interpreted as referring to the external argument in USC. This is what (26) demonstrates.

(26)   a.   *ni-kî-wâpam-*ikawi*-n *wacask*
               1-PAST-see-USC-LCAL   muskrat
               ≠ 'I was seen by a/the muskrat'

        b.   ni-kî-wâpam-ik(w)-(w) *wacask*
               1-PAST-see-INV-3   muskrat
               'the muskrat saw me'

        c.   ni-kî-wâpam-*ikawi*-n
               1-PAST-see-USC-LCAL
               'I was seen or someone saw me'   (Déchaine & Reinholtz 1998:3)

It is impossible for the independently-occurring nominal *wacask* 'muskrat' to stand for the external argument of the USC verbal complex (26a), whereas this is possible with the corresponding non-USC verbal complex (26b). Without the nominal, the USC verbal complex is well-formed (26c). The "suppression" effect is also observable in the form of the possessor prefix of a nominal that co-occurs with a USC verbal complex, which is marked with *-ih*, an allomorph of *-ikawi*.[5]

(27)   ...*mi*-stikwân ta-kisîpêk-in-am-*ih*-k...
         UP-head   FUT-wash-by.hand-I.TH-USC-0
         'one has to wash one's head'   (Wolfart & Ahenakew 1993:70)

The possessor prefix *mi-* is the form that occurs when its referent is unspecific (Ahenakew 1987:37, Wolfart 1973:§2.12).[6] As is evident from the given translation, this unspecified possessor co-refers with the external argument of *kisîpêkinam* '*x* washes *y* (inanimate),' giving rise to a bound variable interpretation.[7] The fact that the unspecified possessor prefix *mi-* is bound to the external argument of washing implies that the relevant external argument is also referentially unspecified.

The rest of this section is partitioned into four different subsections. First, §5.2.1 briefly describes Déchaine and Reinholtz' (1998) analysis of USC, which involves existential quantification over the external argument and movement of the internal argument. Second, in §5.2.2, I exploit Dahlstrom's (1991) argument in favour of the "subject" status of the internal argument in USC to argue for movement of the internal argument. I use the so-called "Copying to Object" phenomenon in Plains Cree , as a diagnostic of the "subjecthood." Then I show in §5.2.3 that USC applies indifferently to verb types, drawing the conclusion that the movement operation in USC must be optional. §5.2.4 ends the section with a summary.

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[5] The *-ih* variant of the USC suffix is the one that is used in verbal complexes in the conjunct order (Wolfart 1991:183–4). The treatment of *-ih* as an independent morpheme differs from Wolfart's (1973, 1991, 1996), who treats *-(i)h* as part of the following agreement suffix, cf. Frantz 1976:201.
[6] If the conclusion drawn by Frantz and Creighton (1982) for Blackfoot is on the right track, and is valid for Plains Cree as well, *mi-* is not an independent morpheme, but part of the noun. The choice between the two analyses, however, is immaterial to the point that I am making.
[7] If the prefix *mi-* is substituted for by the the third person prefix *o-*, the intended bound variable interpretation will be lost.

5.2.1 An Analysis of USC: Déchaine and Reinholtz 1998

Déchaine and Reinholtz (1998) analyse the transitive-based USC formed by suffixation of *-ikawi* in terms of existential binding and movement.[8] In their analysis, the USC suffix *-ikawi* occupies a functional head external to *v*P, and serves two functions: to existentially bind the external argument (i.e. the local argument), and to attract the internal argument to its specifier position. For illustration, the relevant portion of the USC verbal complex *nisâkihikawin* 'I am loved or someone loves me' is represented in (28). As proposed in the introductory section of this chapter, the USC suffix *-ikawi* is a functional category F, which in (28), takes *v*P$_2$ as its complement[9]

(28)   *nisâkihikawin*   'I am loved or someone loves me'
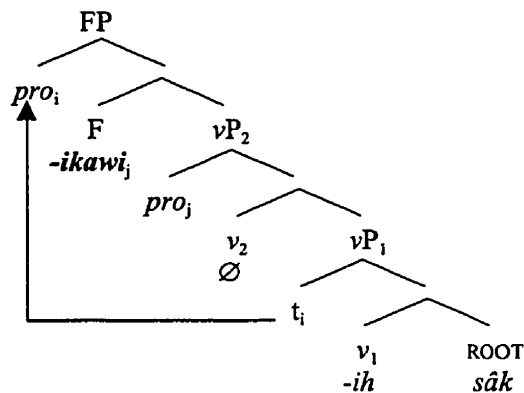
In this configuration, the USC suffix *-ikawi* in F binds and existentially quantifies the external argument in Spec, *v*P$_2$, the closest argument that it c-commands. The suffix also attracts the internal argument from Spec, *v*P$_1$ to its specifier position, Spec, FP, crucially past the existentially-bound external argument in Spec, *v*P$_2$. Two passive-like properties are captured by (28). First, the existential binding of the external argument gives rise to the "suppressed" argument effect. It also blocks the occurrence of a phonologically-overt nominal expression that corresponds to the external argument on the assumption that an existentially-bound *pro* cannot license such nominal expressions. Second, the movement of the internal argument to a syntactic position higher than the external argument position gives rise to the

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[8] Déchaine and Reinholtz' (1998) primary objective is to analyse the Algonquian "direction" (i.e. "direct" vs. "inverse," cf. §1.6.3) system as a "split Case" system. They argue that direct verbal complexes have an nominative-accusative syntax, whereas inverse verbal complexes have an ergative-absolutive syntax. The USC obtained by suffixation of *-ikawi* is argued to be part of the latter paradigm.

[9] In Déchaine and Reinholtz' (1998) analysis, the USC suffix occupies the Infl head. The choice of functional categories, however, has no bearing on my examination of USC.

subject-like properties of the internal argument. Put in a somewhat simplified way, the subject of a sentence is the argument that occupies the highest structural position of all the arguments.

In sum, the preceding discussion has introduced the basic machinery of USC, which I adopt from Déchaine and Reinholtz 1998. Nevertheless, I will later argue that of the two operations involved in USC, only existential binding is obligatory, whereas movement operation must be optional. Before providing evidence for the optionality of movement, however, I first provide independent support for a movement analysis of USC from the "Copying to Object" phenomenon (Dahlstrom 1991).

5.2.2 Evidence for Movement: "Copying to Object"

Suppose a change in the structural height of an argument relative to others correlates with a change in the grammatical function of the argument and vice versa. Then one can take phenomena that are suggestive of a grammatical function change to be evidence for a positional change, i.e. movement. This subsection argues that given this assumption, the so-called "Copying to Object" phenomenon, examined by Dahlstrom (1991), can be used to support the movement portion of Déchaine and Reinholtz' (1998) analysis of USC.[10] I will first describe the phenomenon, and then demonstrate how it interacts with USC.

The transitive suffix of the matrix verb stem optionally is realised either in the animate or inanimate form when the subject of its complement clause is animate.

(29)   a.   ni-kisk-*êyim*-â-w   ê-nôhtê-sipwêht-ê-t
            1-know-by.mind-A.TH-3 CONJ-want.to-leave-INTR-3
            'I know s/he wants to leave'

       b.   ni-kisk-*êyiht*-ê-n   ê-nôhtê-sipwêht-ê-t
            1-know-by.mind-I.TH-LCAL CONJ-want.to-leave-INTR-3
            'I know s/he wants to leave'   (Dahlstrom 1991:67)

The manner-specified transitive suffix meaning 'by mind' is realised by the inanimate form -*êyiht* in (28a), reflecting the inanimate status of the embedded clause as the internal argument or object of the matrix transitive verb. In contrast, it is realised by the animate form -*êyim* in (29b), reflecting the gender of the embedded third person subject (i.e. animate). In other words, the subject of the embedded clause

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[10] To my knowledge, the use of the "Copying to Object" phenomenon as a syntactic diagnostic of subjecthood was first pointed out by Frantz (1976).

is treated as if it were the object of the matrix clause.[11] This gives the phenomenon its name, "Copying to Object." To save space, I abbreviate the term as "CTO." That it is the subject, not the object, of the embedded clause that licenses the animate form of the matrix transitive suffix is illustrated by the CTO sentences in (30) (Dahlstrom 1991:72–3):

(30) a. ni-kisk-*êyim*-â-*w*   George ê-sâk-ih-â-t   o-kosis-a
          1-know-by.mind-A.TH-3 G.   CONJ-love-TRAN-A.TH-3 3-son-OBV
          'I know George loves his son(s)'

      b. *ni-kisk-*êyim-im*-â-*w-a*   George ê-sâk-ih-â-t   o-kosis-a
          1-know-by.mind-OBV-A.TH-3-OBV G. CONJ-love-TRAN-A.TH-3 3-son-OBV

In (30a), the third person agreement suffix -*w* of the matrix verbal complex encodes the person and number of the "proximate" subject of the embedded clause *George*, and the sentence is grammatical.[12] In contrast, the sentence in (30b) is ungrammatical; its matrix verbal complex shows "obviative" object agreement (i.e. the obviation-marking suffixes -*im* and -*a*), which can be triggered only by the obviative object of the embedded clause *okosisa* 'her/his child/ren.' It follows then that it is the embedded subject, not the embedded object, that determines the object agreement morphology, and thus the animate form of the transitive suffix -*eyim* 'by mind' of the matrix verbal complex.

Dahlstrom (1991) takes advantage of these properties of CTO, and argues that the internal argument of the embedded USC is in fact the surface subject of the clause. The relevant example is given in (31), where the USC suffix in the embedded verbal complex is -*(i)h*.

(31) ni-kisk-*êyim*-â-*wak*   ê-kî-sêk-ih-*ih-cik*
      1-know-by.mind-A.TH-3PL CONJ-PAST-scare-TRAN-USC-3PL
      'I know they were scared'   (Dahlstrom 1991:74)

In this example, the matrix verbal complex contains the third-person plural agreement suffix -*wak*. Because only the internal argument of the embedded USC verbal complex is third person and plural

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[11] Phenomena similar to the CTO are found in other languages too. So-called "Exceptional Case Marking" is representative of them.
(i) a. I believe that *she* is innocent
     b. I believe *her* to be innocent
     c. I believe *her*
In (ia), the embedded subject is in the nominative case *she*, whereas in (ib) it is in the accusative case *her* as if it were the object of the matrix verb *believe* (ic).

(indicated by the agreement suffix *-cik*), the agreement must reflect the person and number of this argument. Since CTO is triggered by the subject of the embedded clause, rather than the object, I conclude that the internal argument serves the subject function in the embedded USC verbal complex in (31). For confirmation, (32) demonstrates that the embedded USC formed by suffixation of *-ikawi*, which is used in Déchaine and Reinholtz 1998, behaves in the same way with respect to CTO.

(32)   ki-kisk-*êyim*-i-*nân*   ê-kî-sêk-ih-*ikawi-yâhk*
        2-know-by.mind-A.TH-1PL CONJ-PAST-scare-TRAN-USC-1PL
        'you (sg./pl.) know we were scared'

Again, it is the first person plural internal argument of the embedded USC verbal complex (indicated by the agreement suffix *-yâhk*) that determines the object agreement of the matrix verbal complex; the object agreement suffix of the matrix verbal complex is *-nân*, which identifies the first person plural object. Accordingly, on the assumption that promotion of the object to the subject is implemented by syntactic movement of the internal argument over the external argument, the CTO facts above lend support to the movement analysis of USC advanced by Déchaine and Reinholtz (1998). Considering exactly how this "copying" process must be implemented in syntactic terms, however, goes beyond the scope of this section. Instead, the next subsection argues that movement is an optional operation in USC.

5.2.3 Indifference of USC to Verb Type

In my analysis, the USC suffix is a functional category F that takes a vP as its complement. This predicts that USC applies not only to transitives, but to all verb types indiscriminately.[13] This prediction is borne out—incompletely, however, as data of the applicative/ditransitive-based USC are missing.[14] (33)–(35) contain well-formed USC verbal complexes based on static unaccusatives, dynamic unaccusatives, and unergatives, respectively.

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[12] Loosely, the "proximate" vs. "obviative" distinction is a matter of the promixity of more than one third person participant in the discourse to the speaker. In the default transitive context involving two third person arguments, the external argument is proximate and the internal argument is obviative, cf. §1.6.4.

[13] Preliminary evidence suggests that USC applies only if the target argument of USC is animate. This animacy condition needs confirmation, however.

[14] Sentences such as in (i) should be well-formed.

(i)   yôhtê-n-amaw-*ikawi*-w   Mary iskwâhtêm-a
       open-by.hand-APPL-USC-3 M.   door-PL
       'someone opens doors for Mary'

This prediction needs checking, of course. Note, in passing, the final [aw] of the applicative suffix *-amaw* and the initial [i] of the USC suffix *-ikawi* is expected to contract into [â].

(33)   *static unaccusatives*

    a.   ê(y)-âhko-si-*h*-k[15]
          CONJ-sick-STAT-USC-0
          'there is sickness going on'

    b.   ê-kino-si-*h*-k
          CONJ-tall-STAT-USC-0
          'a group of people are tall'

    c.   ê-miyo-si-*h*-k
          CONJ-good-STAT-USC-0
          'a group of people are beautiful'

(34)   *dynamic unaccusatives*

    a.   ê-pîko-payi-*h*-k
          CONJ-break-INCH-USC-0
          'a group of people are going broke'

    b.   ê-tiht-ipayi-*h*-k
          CONJ-roll-INCH-USC-0
          'a group of people are rolling over'

    c.   ê-tako-payi-*h*-k
          CONJ-arrive-INCH-USC-0
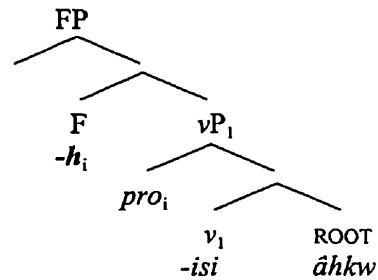   'a group of people are arriving'

(35)   *unergatives*

    a.   ê-mêtaw-ê-*h*-k
          CONJ-play-INTR-USC-0
          'there is a game going on'

    b.   ê-pâhp-i-*h*-k
          CONJ-laugh-INTR-USC-0
          'there is laughter going on'

    c.   ê-pim-paht-â-*h*-k
          CONJ-along-by.running-INTR-USC-0
          'there is running going on (e.g. a marathon race)'

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[15] I identify the agreement suffix -*k* occurring in the USC verbal complexes with the inanimate singular agreement suffix -*k* of the conjunct order. This treatment departs from Wolfart's (1973, 1991, 1996).
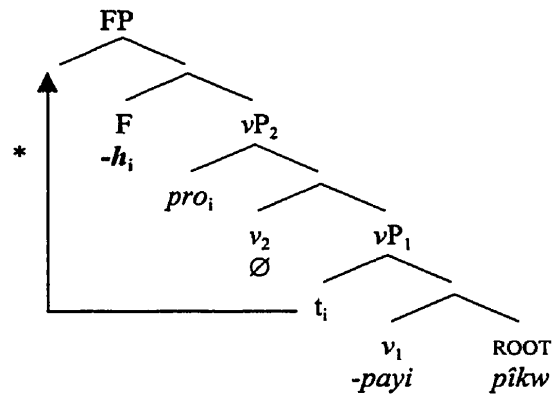
Static unaccusatives are analysed by means of a single-layered vP structure. This means that there is only one argument expression available for static unaccusatives. For instance, the USC verbal complex in (33a) has the following structure:

(36)   *ê(y)âhkosihk*   'there is sickness going on'

```
              FP
             /  \
            /    \
           /      \
          F       vP₁
         -hᵢ      /  \
              proᵢ   /  \
                   /     \
                  v₁    ROOT
                 -isi    âhkw
```

The USC suffix *-h* in F existentially binds *pro* in Spec, vP$_1$. However, there is no argument that the USC suffix can attract in this structure. If existential binding of one argument and movement of another argument are both obligatorily operative to effect USC, then a USC based on static unaccusatives should be ill-formed. This is not the case, as the grammatical USC verbal complexes in (33) show. Thus, one needs to conclude that the primary and obligatory operation of USC is existential binding; the movement operation is secondary and optional in USC. The same conclusion must be drawn for dynamic unaccusatives as well. (37) represents the structure of the USC verbal complex in (34a).
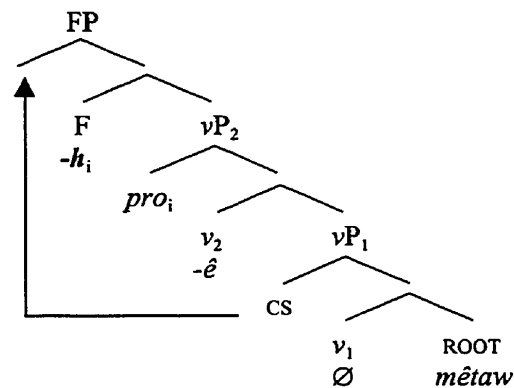
(37)   *êpîkopayihk*   'a group of people are going broke'

```
                   FP
                  /  \
                 /    \
           ↑    /      \
           |   F       vP₂
        *  |  -hᵢ      /  \
           |       proᵢ   /  \
           |            /     \
           |           v₂     vP₁
           |           Ø      /  \
           |_____ tᵢ     /  \
                          /     \
                         v₁    ROOT
                        -payi   pîkw
```

In my analysis, dynamic unaccusatives have a double-layered vP structure, reflecting their dynamic nature (i.e. temporality τ on v_1 = [+ADD TO]). Their internal argument, which is base-generated in Spec, vP$_1$ by checking the theta-role feature of v_1, moves to Spec, vP$_2$ to check the theta-role of v_2. The USC

suffix -*h* in F then existentially binds the moved internal argument. However, there is no argument in Spec, *v*P$_1$ for the USC suffix to attract except the trace of the moved internal argument. Traces are inattractable or "immobile" (Chomsky 1995:304). If so, the movement operation of USC fails to apply to dynamic unaccusatives. Nevertheless, this does not affect the grammaticality of a USC based on dynamic unaccusatives, as is evident from the well-formed USC verbal complexes in (34). Hence, it is existential binding, not movement, that is central to USC.

The picture may be different for the unergative-based USC, however. This is because unergatives have an argument that can undergo movement, unlike static and dynamic unaccusatives. This is illustrated by the structure in (38), which represents the unergative-based USC verbal complex in (35a).

(38)   *êmêtawêhk*   'there is a game going on'

```
                    FP
                   /  \
            ┌──→  F    vP₂
            │     F   /   \
            │    -hᵢ pro  /  \
            │          vᵢ    vP₁
            │          v₂   /   \
            │          -ê  CS   /  \
            └──────────────── vᵢ   ROOT
                              ∅    mêtaw
```

Along with dynamic unaccusatives, unergatives have a double-layered *v*P structure, despite their surface intransitivity. This is because their v_1 carries temporality τ which is [+ADD TO]. The "single" argument of unergatives is base-generated in Spec, *v*P$_2$. The internal argument of unergatives in Spec, *v*P$_1$ is either a "meaningless cognate object" constant (simple unergatives) or a "path" (unergatives of movement) in my analysis (which is quantificationally unbounded (i.e. [–SQA]), giving rise to the atelic property at the *v*P level). The USC suffix -*h* in F existentially binds the "single" argument in Spec, *v*P$_2$, since Spec, *v*P$_2$ is the closest argument to F. How about the movement of the internal argument? There seems to be no independent reason to prohibit it. If so, in the unergative-based USC, movement may apply as well as existential binding, unlike in the two other intransitive structures in Plains Cree.

The outcome of USC as applied to intransitives is a type of "impersonal construction," as the translations of (33)–(35) suggest.[16] Notice that the impersonal nature of USC is also signalled by the "inanimate" singular agreement suffix -*k*. This suffix -*k* must be inserted by default for USC verbal complexes based on static and dynamic unaccusatives, since they lack an argument trigger. The default nature of -*k* is illustrated by the sentence in (39).

(39)   âsay   ê-kîsik-â-yi-*k*   kâ-takohtê-t
         already CONJ-day-S.STAT-OBV-0 OPR-arrive-3
         'it was already morning when s/he arrived'   (Ahenakew 1987:74)

The first verbal complex contains the stem *kîsikâ* 'be day,' which arguably assigns no theta-role. If so, then -*k* appears in the verbal complex by default as dummy or expletive agreement morphology in (39). For the unergative-based USC, however, -*k* agrees with the moved "meaningless cognate object" or "path" internal argument, which is arguably inanimate.

To summarise, I have made three claims in this subsection. First, as is predicted by the status of the USC suffix as F, which takes a *v*P as its complement, USC applies indiscriminately to all verb types (although indeterminacy remains with applicatives/ditransitives). Second, of the two operations that constitute Déchaine and Reinholtz' (1998) analysis of USC, existential binding is the obligatory, primary operation, whereas movement is the optional, secondary operation, as the availability of USC for static and dynamic unaccusatives suggests. Third, the inanimate agreement suffix -*k* occurs in the intransitive-based USC either by default (static and dynamic unaccusatives) or in agreement with the gender of the moved internal argument (unergatives).

5.2.4 Summary

As a point of departure, this section has adopted Déchaine and Reinholtz's (1998) analysis of USC, which exploits two syntactic operations, existential binding and movement. After justifying USC as movement by reinterpreting Dahlstrom's (1991) "subjecthood" argumentation in derivational terms, I have argued that this movement operation must be optional. This is a necessary conclusion, as USC applies to all verb types, including static unaccusatives, which license only one argument expression.

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[16] How "impersonal" USC translates varies, as Wolfart (1991:177) states: "...whether [(35a)] is translated as 'there is playing,' 'they play,' 'one plays' or even (as the traditional label of these forms might suggest) as 'someone plays' is a matter of English style rather than of Cree grammar..."

This property itself follows if as I claim, the USC suffix is a functional category F that selects a *v*P as its complement.

5.3 Conclusion

This chapter has examined two operator-binding phenomena in Plains Cree, the "Generic Object Construction" (GOC) and the "Unspecified Subject Construction" (USC). I have proposed that the GOC suffix *-ikê* is a local binder with generic force, and that it occupies v_2 in a double-layered *v*P structure and v_3 in a triple-layered *v*P structure. This explains why the internal argument of transitives and the applicative, but not the internal argument, of applicatives receive a generic interpretation. The external argument is never understood as generic because it always fails to be c-commanded by the GOC suffix *-ikê*. In contrast, the external argument is subject to USC because the USC suffix *-ikawi* (among many allomorphs) is a functional category F that takes a *v*P as its complement, and existentially binds the local argument. Use of c-command and locality (or minimality) in the description of these constructions is suggestive of their syntactic nature, corroborating my syntactic treatment of Plains Cree verbal complexes.

As I pointed out at the beginning of the chapter, if my analysis of GOC and USC is on the right track, it is predicted that these two constructions can apply simultaneously, since the GOC and USC suffixes occupy different syntactic positions. This prediction is borne out, as the transitive-based "impersonal" verbal complex in (40a) demonstrates.
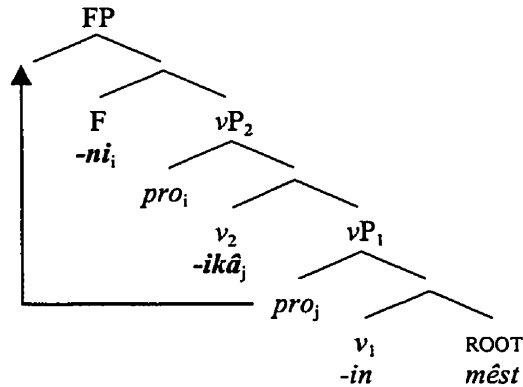
(40) a.   mêst-in-***ikâ-ni***-*wa*
            use-by.hand-G.OBJ-USC-0PL
            'there is no wasting'   (Wolfart 1973:62)

      b.   mêst-in-am(-w)
            use-by.hand-I.TH-3
            's/he uses it up'

In (40a), the generic object suffix *-ikâ* (a variant of *-ikê*) is followed by an allomorph of the USC suffix *-ni*.[17] This impersonal verbal complex receives the following structural analysis:

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[17] This allomorph of the USC is suffixed to inflectionally intransitive verbs that select the animate subject (i.e. "animate intransitive verbs") in the independent order. Its form varies between *-ni, -niwi, -niwan,* and *-niwin* (Wolfart 1991:184).

(41)   *mêstinikâniwa*   'there is no wasting'

```
              FP
           /\
        /    \
      F      vP₂
    -niᵢ    /\
        proᵢ  /\
            v₂    vP₁
           -ikâⱼ  /\
              proⱼ  /\
                  v₁    ROOT
                  -in    mêst
```

In this configuration, the generic operator *-ikâ* in v_2 binds the internal argument. The USC suffix *-ni* in F binds the external argument to quantify it existentially. By hypothesis, the USC suffix also attracts the internal argument to its specifier position (whenever possible). Notice that it is this moved generic internal argument that determines the inanimate plural agreement suffix *-wa* in (40a); if it is inserted by default, then the agreement morphology must be the inanimate singular suffix *-w*, as discussed in §5.2.3.[18] Thus, my analysis of GOC and USC properly captures the predicted interaction between the two constructions. Moreover, if Move successively applies to syntactic objects (excluding those in Spec, vP) all the way up to F in (41), the outcome is the complex F in (42), deriving the correct morpheme order.

(42)

```
              F
           /\
        v₂      F
       /\      -ni
     v₁    v₂
    /\    -ikâ
  ROOT   v₁
  mêst   -in
```
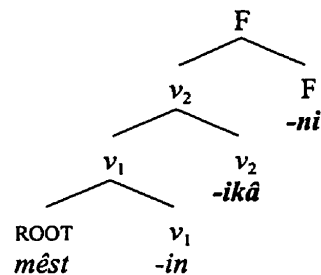
This follows from Baker's (1985) "Mirror Principle," which claims that morpheme order directly reflects order of syntactic derivation and vice versa. Of course, it is true that morpheme orders could also be captured by a morphological template. For instance, one could specify the GOC suffix *-ikâ* and the USC

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[18] The suffix *-w* is the counterpart in the independent inflectional order of the suffix *-k* in the conjunct inflectoinal order.

suffix -*ni*, such that the first precedes the second in the template. However, a templatic analysis must stipulate which morpheme affects which argument(s). For instance, one would have to stipulate that the GOC suffix -*ikâ* affects the internal argument, and the USC suffix -*ni* affects the external argument in (40a). In other words, there is no correlation between the order of the two suffixes and the grammatical relations which they affect; what would be wrong with the USC suffix -*ni* preceding the GOC suffix -*ikâ* in (40a)? In contrast, in my syntactic analysis, which morpheme affects which argument(s) follows from the syntactic positions that the two morphemes occupy (inferred from their positions in the verbal complex), in cooperation with constraints defined in terms of c-command and locality. In my syntactic analysis, the USC suffix -*ni must* follow the GOC suffix -*ikâ* in (40a).[19] The existence of syntax in Plains Cree verbal complexes is solidly grounded.

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[19] Even on the syntactic approach taken here, however, I have no account for why Plains Cree has not developed a "Generic Subject Construction" and/or an "Unspecified Object Construction." In other words, why must the subject be existentially quantified, and the object generically quantified, rather than vice versa.

Chapter 6

Conclusion

6.0 Introduction

This concluding chapter first summarises what was accomplished in the preceding chapters. I then discuss seven outstanding issues that should be addressed in relation to my proposal. Concluding remarks follow.
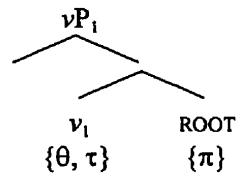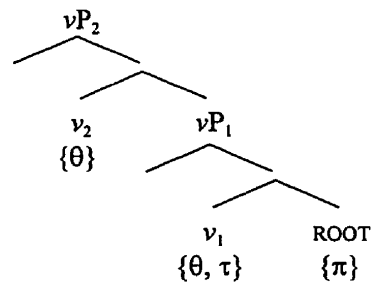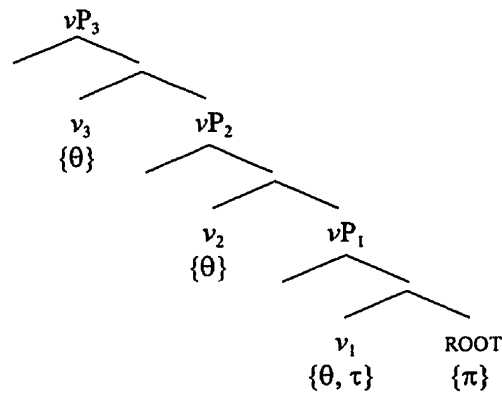
6.1 Origins of Predicates

This thesis has advanced the claim that natural language predicates consist of three atomic parts.

(1)   *predicate* $\wp$ $=_{def}$ {θ, τ, π}

The three symbols θ, τ, and π in (1) stand for the three defining properties of a predicate, namely (i) argument-taking ability, (ii) temporality, and (iii) conceptual content. Moreover, I have proposed that these three defining properties of predicates are distributed in the syntax, such that there is no syntactic object that can be legitimately called a predicate at the point of lexical insertion. In other words, in the current proposal, predicates are not lexical primitives, but syntactic constructs. To implement this idea, I have proposed a mode of representing predicates in the syntax by means of the following three *v*P structures:

(2)   a.   *single-layered vP*

$$vP_1$$

$$v_1 \qquad ROOT$$
$$\{θ, τ\} \qquad \{π\}$$

b. *double-layered vP*

$$vP_2$$
$$v_2 \quad\quad vP_1$$
$$\{\theta\}$$
$$v_1 \quad\quad \text{ROOT}$$
$$\{\theta, \tau\} \quad\quad \{\pi\}$$

c. *triple-layered vP*

$$vP_3$$
$$v_3 \quad\quad vP_2$$
$$\{\theta\}$$
$$v_2 \quad\quad vP_1$$
$$\{\theta\}$$
$$v_1 \quad\quad \text{ROOT}$$
$$\{\theta, \tau\} \quad\quad \{\pi\}$$

In these vP structures, argument-taking ability is a property of v. Each v bears a theta-role feature (i.e. $\{\theta\}$), which is checked either via Merge or Move, on par with other formal features exploited in the minimalist program. Temporality τ is localised on v_1, and conceptual content π is localised on ROOT. Taking morphemes that constitute (the predicate portion of) verbal complexes to be syntactic objects that are aligned with the vP structures illustrated above, the preceding chapters have demonstrated that these vP structures provide us with insights into the morphosemantic and morphosyntactic properties of Plains Cree.

On the morphosemantic side, my postulation of ROOT as a syntactic object that lacks temporality (i.e. the Zero Eventuality Hypothesis) and argument-taking ability accounts for the fact that Plains Cree roots cannot function alone as predicates that form propositions together with appropriate pronominal agreement morphology. Second, my assignment of temporality τ as a semantico-syntactic feature [±ADD TO] in the sense of Verkuyl 1972, 1993 explains why Plains Cree verbs generally exhibit no aspectual stacking, unlike most other theories of eventuality composition.

On the morphosyntactic side, the assignment of argument-taking ability to v, rather than ROOT, correctly captures the range of noun incorporation possibilities in Plains Cree. In addition, my postulation of ROOT and v_1 as syntactic objects in a sister relationship allows me to capture the properties of medials via syntactic movement. Finally, my claim that two operator-like affixes occupy two different syntactic positions accounts for their different semantic scopes as well as their linear positions. All of these phenomena exhibit c-command and locality effects, which otherwise (e.g. in a morphological template analysis) must simply be stipulated.

I take the accomplishments outlined above to demonstrate the advantages of a structural view of predicates. To the extent that I have succeeded in this enterprise, the three defining properties of predicates, θ (argument-taking ability) τ (temporality), and π (conceptual content), and the three vP structures which correspond to their syntactic realisation constitute a universal theory of the "origins of predicates" (OP) in natural language.

6.2 Implications of OP: Further Issues and Remaining Questions

OP gives rise to a number of further issues. This section addresses seven of them. §6.2.1 discusses "defective" predicates in natural language, a possibility that arises if a predicate is allowed to exist with only one or two of the three defining properties $\{\theta, \tau, \pi\}$. §6.2.2 takes up the issue of recursivity of the thee predicate-defining properties. §6.2.3 considers the category-neutrality of ROOT, a potential challenge to the derivation of Plains Cree nominals. §6.2.4 addresses issues concerning the range of possible realisation and conflation patterns of syntactic objects within vP. §6.2.5 mentions the possibility of parametrising the shape of vP structures. §6.2.6 points out the possibility of further decomposing v_1 into two separate heads, one encoding temporality, the other argument-taking ability. §6.2.7 is devoted to a discussion of direction-related phenomena in Plains Cree (i.e. direct vs. inverse morphology) in the context of the current proposal.

6.2.1 Combinations of the Three Features

Natural language predicates are composed of the following three elements:

(3)   *predicate* $\wp =_{def} \{\theta, \tau, \pi\}$

Contrary to this definition, suppose "predicates" in natural language are allowed to be only partially specified for the features in (3). Predicates of this type may be called "defective predicates," as opposed to fully-specified predicates, which may be called "full predicates." Now, if defective predicates exist in natural language at all, what would they be? Given the three defining properties θ (argument-taking ability), τ (temporality), and π (conceptual content), there arise six defective predicates (i.e. $_3C_2 + {_3}C_1$) as logical possibilities (precluding predicates furnished with no feature).

(4)   *six defective predicates*

    a. $\{\theta, \tau\}$ = *causativising predicate?*
    b. $\{\theta, \pi\}$ = *predicate nominal/secondary predicate?*
    c. $\{\tau, \pi\}$ = *"weather" predicate?*
    d. $\{\pi\}$ = *??*
    e. $\{\tau\}$ = *copula?*
    f. $\{\theta\}$ = *??*

Out of these six possibilities, perhaps four may be claimed to exist. First, defective predicates that are defined by argument-taking ability and temporality (4a) can be identified with verbs, such as *make* and *cause*, that head the causative construction.

(5)   a.   John *made* me mad
        b.   The construction *caused* there to be a heavy traffic jam

The "meaning" of this type of defective predicate arguably consists of their dynamic temporality (i.e. [+ADD TO]), introduction of the causer/agent argument expression, and their syntactic configuration, lacking conceptual content, cf. Suzuki 1999.[1]

Second, defective predicates that are defined by argument-taking ability and conceptual content (4b) can be identified with predicate nominals (6) and secondary predicates (7).

(6)   a.   The committee elected John *chairperson*
        b.   John is *the chairperson* of the committee

(7)   a.   Who doesn't like to eat fish *raw*?
        b.   The student wiped the whiteboard *clean*

---

[1] I remain indeterminate whether lack of conceptual content implies lack of ROOT.

Predicate nominals, being nominal, are reasonably considered devoid of temporality. With regards to secondary predicates, lack of temporality is presumably what renders those predicates secondary, as opposed to primary. Primary predicates must be furnished with temporality, as temporality τ—a set of (spatio-)temporal indices in the formalisation advanced by Verkuyl (1993)—is a prerequisite for the interpretation of tense.

Third, defective predicates that are defined by temporality and conceptual content (4c) can be identified with "weather" predicates.

(8)   a.   It *rained* very hard yesterday
        b.   It is *hailing* in Leipzig

This identification hinges on the status of *it* in (8) as an expletive subject, not as the "quasi-argument" of weather verbs (Chomsky 1981, cf. Bolinger 1973).

Fourth, defective predicates that are defined only by temporality (4e) can be identified with copula verbs.

(9)   a.   John *is* the chairperson of the committee
        b.   These students *are* all brilliant

It is conceivable that the copula *be* is necessary in these sentences because the predicate nominal *the chairman* and the adjective *brilliant* lack temporality; without temporality, a proposition fails to receive a tense interpretation (Verkuyl 1993, cf. Déchaine 1993).

Of course, this discussion of defective predicates in only an initial approximation. Yet, on the assumption that this is on the right track, it is worth figuring out whether there are indeed no defective predicates that are defined solely by conceptual content (4d) or argument-taking ability (4f) in natural language. If it turns out that there are indeed no such defective predicates, then one can ask whether they are accidental gaps, or tell us something about what natural language predicates are like. I leave this issue open for further investigation.

6.2.2 Recursivity of the Predicate-Defining Properties

The preceding subsection asked whether any subset of the three defining properties can exist as a syntactic object in its own right. This section addresses the issue of recursivity of the predicate-defining properties. It turns out that argument-taking ability θ (i.e. the theta-role feature) is unique among the three defining properties of a predicate in that it can be recursive. By this, I refer to the existence of double-layered and triple-layered vPs, which contain more than one bearer of argument-taking ability, i.e. v. A double-layered vP contains two vs and thus two theta-role features. Likewise, a triple-layered vP contains two vs and thus three theta-role features. Recursivity does not characterise the other two defining properties of a predicate, namely temporality τ and conceptual content π, regardless of its derivational history. Regardless of the number of v layers, a given vP contains only one specification of temporality and one specification of conceptual content. This is a fact. The question is why this fact holds. At this point, I do not have an answer to this question. Another conundrum is why argument-taking ability recurs up to three and no further. That is, natural languages contain predicates that take one argument (i.e. intransitive), two arguments (i.e. transitive), and three arguments (i.e. ditransitive), but arguably no predicates take four arguments. The maximum degree of recursion with respect to argument-taking ability (i.e. three) remains a stipulation in the OP framework. Any future study of natural language predicates must be directed toward answering these questions.

6.2.3 Category-Neutrality of the Root

My phrase structure system has a category-neutral syntactic object in it, namely ROOT, the source of extra-linguistic, real-world knowledge (i.e. conceptual content). As such, ROOT does not determine a category label. Rather, category labels are determined by syntactic objects that take ROOT as their complement. Thus, for instance, if a verbal head merges with ROOT, then a verbal projection results. Likewise, if a nominal head merges with ROOT, then a nominal projection results. Now, suppose there is a root that conveys the conceptual content 'kind.' If this root merges with a verbal head, then a verbal projection that denotes 'be kind' is expected to arise, according to the above scenario. Similarly, if the same root merges with a nominal head, the a nominal projection that denotes 'kindness' is expected to arise. This is schematised in (10), where the verbal and nominal heads are v and n.

(10) a.   ROOT = 'kind'
      b.   [ROOT + v] = 'be kind'
      c.   [ROOT + n] = 'kindness'

However, the predicted parallel between verbal and nominal projections depicted in the schemata here generally does not hold in Plains Cree. While the verbal projection emerges as predicted (11a), the nominal projection does not (11b). Contrary to the prediction, the nominalising suffix -*win* takes the verb stem *kisêwâtisi* 'x is kind' to form the abstract noun stem *kisêwâtisiwin* 'kindness.' These forms are adapted from Wolfart and Ahenakew 1998:60.

(11)   a.   [kisêwat-*isi*]-w   *verbal*
                  kind-STAT-3
                  's/he is sick'

        b.   [[kisêwat-*isi*]-win]   *nominal*
                  kind-STAT-NML
                  'sickness'

Though I have not yet checked the data, I fully expect the nominalisation *kisêwât[i]win* ([i] epenthesised) to be ill-formed. The fact that noun stems do not derive directly from a root, as appears to be the case, undermines the category-neutral status of ROOT in Plains Cree. I have claimed that temporality τ is not a property of a root (i.e. ROOT), but of the transitivity suffix (i.e. v_1), and therefore of the verb stem (i.e. ROOT + v_1). In that case, the fact outlined above may suggest the following: abstract noun stems in Plains Cree require temporality as well as conceptual content as part of their meaning, whereas some nouns require only conceptual content. Investigating how other languages behave in this respect should tell us whether and to what extent roots can be treated as category-neutral syntactic objects.[2]

6.2.4 Patterns of Realisation and Conflation of Syntactic Objects

I claim that the three vP structures given in (2) above are the phrase structures common to all human languages. This implies that the Plains Cree sentence in (12a) and the English sentence in (12b), for instance, are both analysed by means of a triple-layered vP structure, as there are three argument expressions present in these sentences.
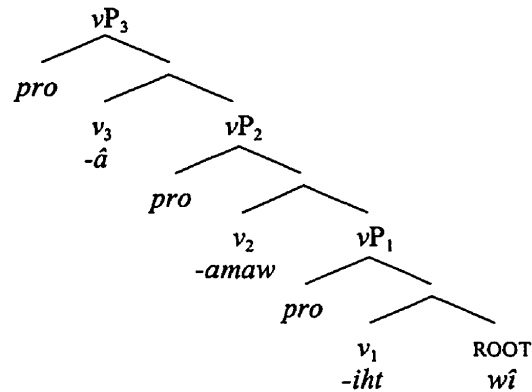
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[2] Semitic languages fit well with the schemata in (10) if their morphology is appropriately understood in syntactic terms, arguably lending support to the category-neutral status of roots, cf. Doron 1999.
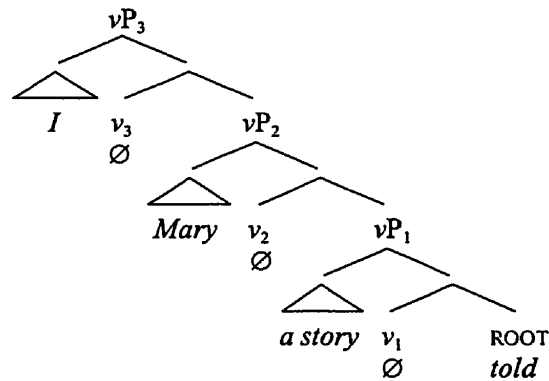
(12) a. ni-wî-ht-amaw-â-w   Mary âcimowin
          1-tell-by.speech-APPL-A.TH-3 M.   story
          'I told Mary a story'

      b. I told Mary a story

These sentences have the structures in (13a) and (13b), respectively.

(13) a. *niwîhtamawâw* 'I tell it for her/him'

```
                vP₃
              /     \
           pro      /  \
                  v₃    vP₂
                  -â   /    \
                     pro   /   \
                          v₂   vP₁
                        -amaw  /   \
                             pro   /   \
                                  v₁    ROOT
                                 -iht    wî
```

      b. *I told Mary a story*

```
                vP₃
              /     \
           △      /     \
           I   v₃      vP₂
               ∅      /    \
                     △    /    \
                   Mary  v₂    vP₁
                         ∅    /    \
                            △     /   \
                         a story v₁   ROOT
                                 ∅    told
```


Besides the different phonological realisations of the predicate, the proposed vP analysis attributes the difference between the two languages to which syntactic heads are pronounced. It is hypothesised that all four heads (i.e. ROOT and three vs) are pronounced in Plains Cree (13a), whereas only one head, ROOT, is pronounced in English; all three v heads are phonologically null (13b). If one assumes that ROOT is pronounced in every language, there must be eight different patterns for pronunciation of syntactic heads involved in the formation of a ditransitive/applicative predicate in natural language.

(14)   *eight patterns of phonological realisation of v heads*

a. $v_1 - v_2 - v_3$ ← *Plains Cree*
b. $\varnothing - v_2 - v_3$ ← ??
c. $v_1 - \varnothing - v_3$ ← ??
d. $v_1 - v_2 - \varnothing$ ← ??
e. $\varnothing - \varnothing - v_3$ ← ??
f. $v_1 - \varnothing - \varnothing$ ← ??
g. $\varnothing - v_2 - \varnothing$ ← ??
h. $\varnothing - \varnothing - \varnothing$ ← *English*

Plains Cree represents the upper extreme, with all three *v*s being pronounced, whereas English represents the lower extreme, with none of the three *v*s being pronounced. Whether the other six predicted patterns are all attested in natural language remains to be seen.

But why is it that ROOT must be pronounced, whereas *v*s can be phonologically null? The answer seems to be attributable to the fact that ROOT is the syntactic object that conveys conceptual content. If so, the question can be rephrased: what is special about conceptual content compared to temporality and argument-taking ability? Intuitively, conceptual content supplies the most distinctive "label" of a predicate, and as such it cannot be phonologically null if a predicate is to be properly identified. Aside from v_1, which as the host of temporality τ, can take at least two different forms, depending on whether τ is [+ADD TO] or [−ADD TO], there is no reason to spell out any *v*. It is conceptual content, rather than transitivity or temporality, that distinguishes between the ten italicised dynamic transitive verbs in (15).

(15)   a.   Claudia *wiped* the table
        b.   Claudia *painted* the table
        c.   Claudia *hit* the table
        d.   Claudia *kicked* the table
        e.   Claudia *broke* the table
        f.   Claudia *burned* the table
        g.   Claudia *fixed* the table
        h.   Claudia *carried* the table
        i.   Claudia *threw* the table
   j   Claudia *stole* the table

In all ten of these transitive verbs, v_1 is specified as [+ADD TO], and v_1 and v_2 each introduce an argument expression. There is no point of associating a phonological matrix with either v_1 or v_2, since their content is fully derivable from their syntactic configuration. In conclusion, only ROOT must be pronounced by

virtue of hosting conceptual content, whereas v layers are largely predictable from their syntactic context.

Another respect in which languages may differ is whether "conflation" of relevant syntactic objects via movement, which results in the complex v_3 (i.e. $[_{v3} [_{v2} [_{v1} \text{ROOT} + v_1] + v_2] + v_3]$), takes place "overtly" or "covertly"—i.e. prior or subsequent to "Spell-Out" in the sense of Chomsky 1995.[3] Both in Plains Cree and English, conflation of the relevant four syntactic objects must occur overtly to obtain the surface morpheme/word order. However, there is no a priori reason to consider this overt conflation to be the rule. There may be languages that apply this predicate-forming conflation covertly.

6.2.5 Ordering the Merger of Features/Syntactic Objects

On one hand, OP makes use of bare phrase structure theory (Chomsky 1995) in contextual relativising the phrase structure status (e.g. X^0 vs. XP) of a syntactic object. This allows a syntactic object in a specifier or adjunct position to incorporate into a c-commanding head without violating the Uniformity Condition, cf. §1.5.1. The implementation of noun and medial incorporations developed in Chapter 4 draws on this idea. On the other hand, however, OP does not make use of the botttom-up structure-building aspect of bare phrase structure theory, and its vP structures remain as templatic as the pre-minimalist X-bar schemata of conventional phrase structure. To illustrate the issue, compare the following two schematic configurations:

(16)   a.   b.

            vP$_1$ vP$_1$

ARG$_1$ ROOT

     v_1 ROOT $\{\pi\}$ v_1 ARG$_1$

   $\{\theta, \tau\}$ $\{\pi\}$ $\{\theta, \tau\}$
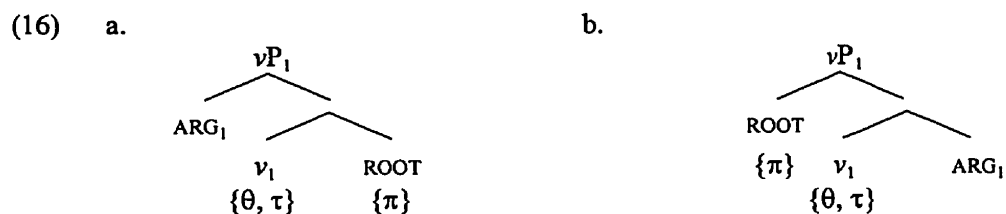
(16a) is the single-layered vP that is adopted in OP. In this structure, v_1 first merges with ROOT, and then the resultant verbal syntactic object merges with an argument expression. I am proposing that the single-layered vP in (16a) is universal. This vP, however, is simply given as a template; I have not yet developed a structure-building mechanism that derives this putatively universal configuration. This means that there is no principle available that blocks the single-layered vP structure in (16b) from being

constructed. In (16b), v_1 first merges with an argument expression, and then the resulting verbal syntactic object merges with ROOT. If so, the realisation of vP structures will be subject to parametric variation. However, I have claimed that (16a) is the only legitimate single-layered vP, and (16b) is ruled out. In order to ensure this result, one might conjecture that either temporality and conceptual content must meet one another on entering into syntax or that the theta-role feature on v_1 is not checkable unless it meets conceptual content. Attempts to build a rigid derivational theory of phrase structure will provide insight into the issues.

6.2.6 Split of v_1?[4]

In my vP structures, v_1 is unique compared to v_2, v_3, and ROOT. That is, v_1 differs from v_2, v_3, and ROOT in that it conveys two defining properties of a predicate, namely temporality and argument-taking ability. The others convey only one property each; v_2 and v_3 convey argument-taking ability, and ROOT conveys predicative concept. Recall the central hypothesis of this dissertation involves radical syntactic (de)composition of predicates. This implies that temporality should be stripped from v_1, and τ should then project to τP on its own. The net result is that all syntactic atoms bear one and the only one defining property. This proposal may be called the "extended" OP. In (17), I compare the single-layered vP structure of OP (17a) with that the extended OP (17b).[5]

(17)   a.   *OP*

$$v\text{P}_1$$

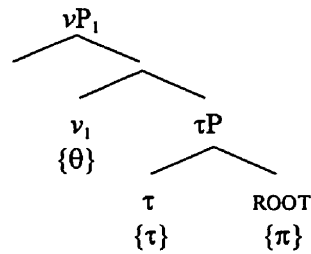$$v_1 \qquad \text{ROOT}$$
$$\{\theta, \tau\} \qquad \{\pi\}$$

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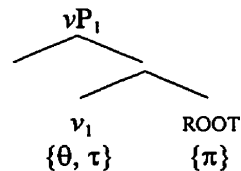
[3] "Spell-Out" is an arbitrary point at which a derivation splits into LF and PF. Movements (unless string-vacuous) before Spell-Out affect morpheme/word order, whereas those after do not.
[4] I thank Matthew Ritchie (personal communication) for raising this issue.
[5] In (17b), the sister of ROOT is τ, not v_1. Although this is an arbitrary decision, I have made it for two reasons. First, there are cases in which temporality hinges on conceptual content, cf. §2.1.2. Second, in this way, if there is more than one v head present in the structure, these projections uniformly constitute higher layers of the structure without being interrupted by τP.

b.   *Extended OP*

```
              vP₁
            ╱      ╲
          ╱    ╲
        v₁       τP
        {θ}    ╱    ╲
             τ        ROOT
             {τ}      {π}
```

In the extended OP structure (17b), the labour of syntactically characterising a predicate is evenly divided between the three syntactic objects; ROOT specifies conceptual content, τ specifies whether the predicate is dynamic or static, and each v_1 is in charge of introducing an argument expression. Thus, the extended OP may be deemed to embody the ultimate syntactic (de)composition of a predicate. The remaining question is whether this shift will be empirically supported or not. This issue is left for future research.

6.2.7 Beyond *v*P Structures: Capturing Two Direction-Related Generalisations

The *v*P structures I have proposed only cover the predicate portion of a verbal complex, which in general corresponds to the stem. Since most of the phenomena examined in this thesis apply in the stem domain, they can be described only in terms of *v*P structures. Only one phenomenon, namely the Unspecified Subject Construction examined in Chapter 5, necessarily refers to syntactic structure external to *v*P. As it turns out, there are at least two more phenomena that benefit from going beyond *v*P structures. Those phenomena are the interpretation of the manner specification on transitive suffixes and that of medials. It is observed that the specified manner is generally interpreted with respect to the external argument (§3.2.2.1), and that the argument-modifying medial is generally interpreted with respect to the internal argument (§4.3.3). However, cases are attested in which a specified manner is interpreted with respect to the internal argument (18), and a medial is interpreted with respect to the external argument (19), contrary to the general patterns.

(18)   *specified manner interpreted with respect to the internal argument*

     a.   ta-maskaw-*îskâ-ko*-yahk   (80)
           FUT-strong-by.body-INV-21
           'for it to make us (inclusive) strong'

     b.   ê-kî-mây-*iskâ-ko*-t   (87)
           CONJ-PAST-bad-by.body-INV-3
           'it used to cause allergic reactions in him'

(19)   *medial interpreted with respect to the external argument*

     ê-kakwêc-im-â-t   kîspin   ka-kî-micim-*âskw*-aho-*ko*-t
     CONJ-ask-by.speech-3   if   FUT-PAST-hold-wood-by.tool-INV-3
     'he asked them if they (i.e. birch trees) would hold him fast'

The examples in (18) are adapted from Wolfart and Ahenakew 1998. (The number in the parentheses on the right of each example is the page number of the reference.) In these examples, the animate transitive suffix -*iskaw* 'by body' (→ *iskâ* / _ *i*) is interpreted with respect to the first person plural (inclusive) and the third person singular internal argument in (18a) and (18b), respectively. In the example in (19), which is adapted from Ahenakew 1989:54, the medial -*âskw* 'wood' modifies the third person (plural) external argument, which is identified as two birch trees (i.e. *nîso waskwaya*) from the preceding sentence. These examples admittedly may not represent general patterns, but they have something in common; all the verbal complexes under consideration are in the inverse form (marked with the inverse suffix -*ikw*). Now, if it is the case that these allegedly deviant patterns of manner and medial interpretations arise only if the verbal complex is in the inverse form (but never arise when the verbal complex is in the direct form), we are witnessing two important generalisations that the grammar must explain. These generalisations are as follows:

(20)   *Manner Interpretation*
The (instrumental) manner specified on a transitive suffix is interpreted with respect to the external argument in the direct verbal complex, whereas it is interpreted with respect to the internal argument in the inverse verbal complex.

(21)   *Medial Interpretation*
A (argument-modifying) medial is interpreted with respect to the internal argument in the direct verbal complex, whereas it is interpreted with respect to the external argument in the inverse verbal complex.
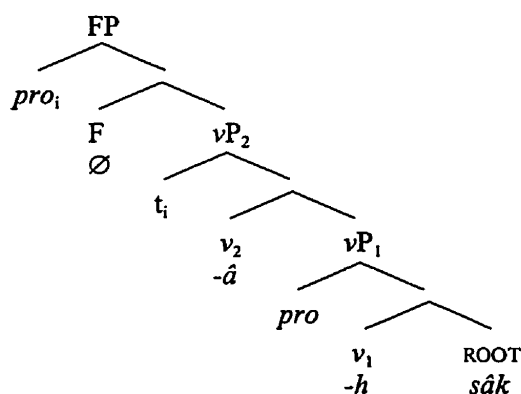
Déchaine and Reinholtz (1998) provide a possible answer as to why the direct vs. inverse distinction plays a role in these generalisations. The rest of this subsection illustrates how this is done.

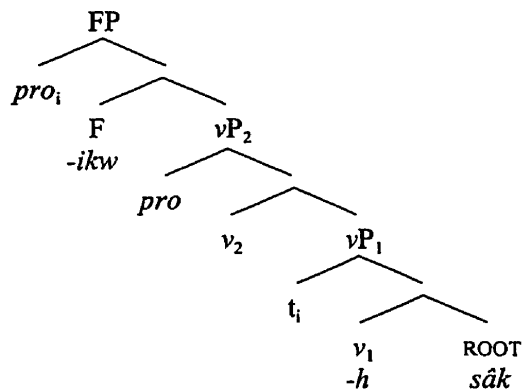The direct-inverse alternation in Plains Cree is exemplified by (22).

(22)   a.   ni-sâk-ih-*â*-w   *direct (nominative-accusative)*
                    1-love-TRAN-A.TH-3
                    'I love her/him'

       b.   ni-sâk-ih-*ik*(w-w)   *inverse (absolutive-ergative)*
                    1-love-TRAN-INV-3
                    's/he loves me'

In the direct verbal complex in (22a), the external argument is the first person singular, whereas the internal argument is the third person singular. In the inverse verbal complex in (22b), the external argument is the third person singular, whereas the internal argument is the first person singular; i.e. the argument alignment is reversed. Notice this argument alignment is managed only by means of the theme sign -*â* and the inverse suffix -*ikw*. The agreement morphology remains identical regardless of the direction; *ni*- indicates the first person, whereas -*w* represents the third person. In their attempt to capture these properties, Déchaine and Reinholtz (1998) claim that the direct-inverse alternation is regarded as an alternation between two Case-alignment systems, the nominative-accusative alignment (direct) and the absolutive-ergative alignment (inverse). Somewhat simplified and adapted to the current assumptions, Déchaine and Reinholtz propose the following: there is a functional category that regulates Case assignment, nominative in the nominative-accusative alignment, and absolutive in the absolutive-ergative alignment. Moreover, what is attracted by this functional category is the external argument in the nominative-accusative alignment, but the internal argument in the absolutive-ergative alignment. This is illustrated in (23).

(23)   a.   *nisâkihâw*   'I love her/him'   *nominative-accusative (direct)*

```
                    FP
                  /    \
              pro_i     \
                      /    \
                     F      vP_2
                     Ø    /    \
                        t_i     \
                              /    \
                            v_2     vP_1
                            -â    /    \
                                pro    \
                                     /    \
                                    v_1    ROOT
                                    -h     sâk
```

(24)   a.   *nisâkihik(ww)*   's/he loves me'   *absolutive-ergative (inverse)*

```
                    FP
                  /    \
              pro_i    /  \
                     F      vP_2
                   -ikw    /   \
                        pro    /  \
                             v_2   vP_1
                                  /   \
                               t_i    /  \
                                    v_1   ROOT
                                    -h    sâk
```

Now, given these structures, one can propose that the argument in Spec, FP determines the form of the agreement prefix, and that the argument that remains in situ (or within *v*P) determines the form of the agreement suffix. In both structures, the argument expression in Spec, FP is a *pro* that represents the first person, and the argument expression that remains in situ (or within *v*P) is a *pro* that represents the third person. This is how Déchaine and Reinholtz (1998) capture the identical agreement morphology between the alternating verbal complexes in (22).

Déchaine and Reinholtz' (1998) proposal allows us to simply the generalisations concerning the manner and the medial interpretation, which are repeated as (25) and (26).
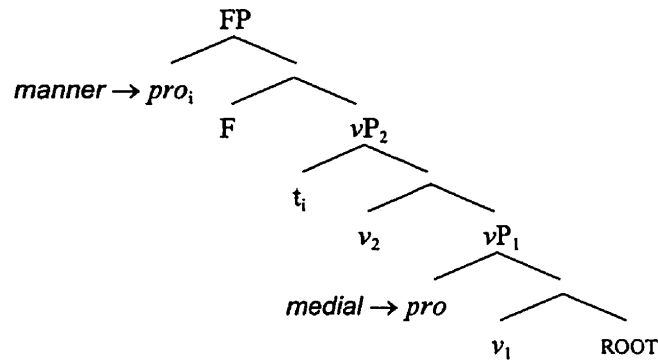
(25)   *Manner Interpretation*
The (instrumental) manner specified on a transitive suffix is interpreted with respect to the external argument in the direct verbal complex, whereas it is interpreted with respect to the internal argument in the inverse verbal complex.
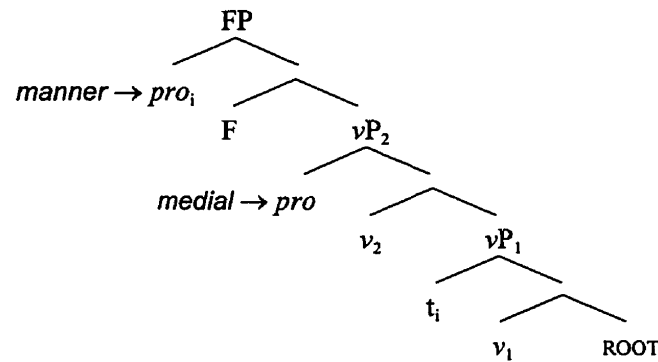
(26)   *Medial Interpretation*
An (argument-modifying) medial is interpreted with respect to the internal argument in the direct verbal complex, whereas it is interpreted with respect to the external argument in the inverse verbal complex.

If one maps the claims of these generalisations onto the schematic direct and inverse configurations, the following obtains:

(27) a. *nominative-accusative (direct) alignment*

```
                        FP
                      /    \
        manner → proᵢ      /  \
                          F    vP₂
                              /   \
                             tᵢ    /  \
                                  v₂   vP₁
                                      /    \
                        medial → pro      /  \
                                         v₁   ROOT
```

b. *absolutive-ergative (inverse) alignment*

```
                        FP
                      /    \
        manner → proᵢ      /  \
                          F    vP₂
                              /   \
                medial → pro      /  \
                                 v₂   vP₁
                                     /    \
                                    tᵢ    /  \
                                         v₁   ROOT
```

In both structures, the manner specification is interpreted with respec to the *pro* in Spec, FP, and the medial is interpreted with respec to the *pro* that remains in situ (or within *v*P). Consequently, the two generalisations above may be simplified into (28) and (29), respectively.

(28) *Manner Interpretation (revised)*
The (instrumental manner) specified on a transitive suffix is interpreted with respect to the argument expression that is in Spec, FP).

(29) *Medial Interpretation (revised)*
An (argument-modifying) medial is interpreted with respect to the argument expression that remains in situ (or within *v*P).

The correlation beween the direction (i.e. the direct vs. inverse distinction) and the argument expression with which the manner of the medial is interpreted is now clear; the direct and inverse alignments put different argument expressions into the configurations designated for interpreting the manner specification of a transitive suffix and the medial. The manner specification that modifies the internal argument is found only in the inverse verbal complex because only in the inverse context does the

internal argument occupy Spec, FP. Similarly, the medial that modifies the external argument is found only in the inverse verbal complex because only in the inverse context does the external argument remain in situ within vP.

This simplification of the generalisations concerning the manner and the medial interpretation is accomplished only if the dynamics of the direct-inverse alternation are taken into consideration, in line with Déchaine and Reinholtz (1998), who take advantage of syntactic structure external to vP. The discussion in this subsection, therefore, has shown that one needs to go beyond vP structures to fully account for the distribution of medials and of manner specifications.

6.3 Conclusion

It is true that OP is modelled on Plains Cree alone, but it is by no means geared specifically to it. I claim that the predicate-formation mechanism I have outlined is a property of UG. As such, it must survive scrutiny in other languages, including, of course, other Algonquian languages. It is also imperative to test vP structure in a wider range of phenomena in Plains Cree. Moreover, data elicited in artificial 'laboratory' environments should be supported by data from textual corpora to enhance the credibility of the research. The end of this dissertation is the beginning of these next projects.

Chapter 7

Appendix:
Deriving Dynamic Unaccusatives via Reflexivisation

7.0 Introduction

This appendix chapter first presents empirical evidence for analysing dynamic unaccusatives in Plains Cree as a kind of reflexive predicate, and then explains why I adopt reflexivisation. Recall from §3.2.4 that I treat dynamic unaccusative verbal complexes such as *pîkopayiw* '*x* breaks (by itself)' in (1a) as in (1b).

(1) a. pîko-*payi*-w wiyâkan   *dynamic unaccusative*
        break-INCH-0 dish
        'the dish broke (by itself)'

    b.
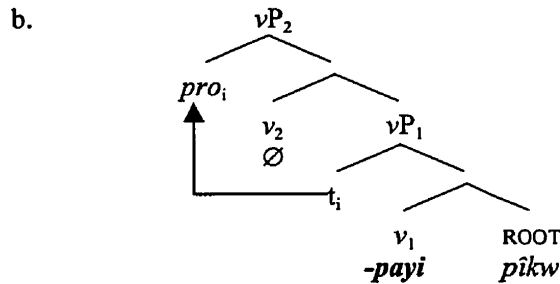
The single *pro* argument is first introduced in Spec, vP_1 to check the "measuring-out" theta-role feature of the inchoative suffix *-payi* as v_1, and then moves to Spec, vP_2 to check the "energy source" theta-role feature of the phonologically-null v_2. This movement is in a sense reflexivisation, as one argument bears more than one theta-role. I will show why movement is chosen over binding, and propose a way to distinguish "unaccusative reflexivisation" from "reflexive reflexivisation." I conclude this chapter by considering some implications my analysis has for the so-called "causative-inchoative alternation."

7.1 *-Payi* as a Reflexive Suffix

Perhaps, the most straightforward way to justify a reflexivisation analysis of dynamic unaccusatives is to demonstrate that the morphology that appears in a reflexive context also appears in an unaccusative

context. Though very scarce, data are available that identify the inchoative suffix -*payi* as the inanimate counterpart of the reflexive suffix -*iso* in Plains Cree. In a verbal complex that denotes a reflexive relation whose participant is animate, the reflexive suffix -*iso* occurs in the position of the animate theme sign. The result of affixing -*iso* to a stem is an intransitive reflexive verb.[1]

(2) a.   Claudia [sâki-*h-ê*]-w   Ottilie-wa
             C.   love-TRAN-A.TH-3 O.   -OBV
             'Claudia loves Ottilie'

      b.   Claudia [sâki-*h-iso*]-w
             C.   love-TRAN-REFL-3
             'Claudia loves herself'

The loving relation expressed in (2a) is a transitive relation holding between two third person individuals. The animate theme sign is -*ê*, appropriate for this relation. In (2b), the reflexive suffix -*iso* occurs instead of the animate theme sign -*ê*. The resulting loving relation is a reflexive one, as the translation suggests. This is how a reflexive predicate is formed in Plains Cree when the participant is animate.

To my knowledge, there is no work on Plains Cree that tells us what would happen if the participant of a reflexive relation were inanimate. However, this does not mean that it is impossible for an inanimate individual to participate in a reflexive relation. If the context permits, inanimates can also be the subject of reflexive sentences in Plains Cree.

(3) a.   [kanâc-ihc-*ipayi*]-w sîpiy[2]   ($t \rightarrow c$ / __ i)
             clean-TRAN-INCH-0 river
             'the river cleaned itself'

      b.   ayisiyiniw-ak [kanâc-iht-*â*]-wak   sîpiy
             person-PL   clean-TRAN-I.TH-3PL river
             'people cleaned the river'

---

[1] There is no independently-occurring reflexive pronoun such as *myself* in Plains Cree.

[2] To emphasise the contrast to the reflexive sentence (3a), a speaker's translation of the inchoative counterpart (i) is accompanied by the adverbial anaphor *by itself*.

(i) kanâc-*ipayi*-w sîpiy
    clean-INCH-0 river
    'the river cleaned *by itself*'

Besides *by oneself*, dynamic unaccusative sentences in Plains Cree are translated with an adverbial expression, such as *suddenly*, *spontaneously*, and *quickly*. The last adverbial *quickly* seems a reflection of the etymology of -*payi*, which implies use of fast-moving transportation (e.g. *takopayiw* 's/he arrives by car, horse').

Sentence (3a) describes a reflexive cleaning relation that involves the inanimate noun *sîpiy* 'river.' Notice the inchoative suffix *-payi* occurs in the reflexive verbal complex. It follows the inanimate transitive verb stem *kanâciht* '*x* cleans *y* (inanimate),' replacing the inanimate theme sign *-â* in the corresponding transitive verbal complex in (3b). A river can be conceived of as actively engaged in cleaning itself since it is able to sweep mud and rubbish away in its flow.[3] Another example of the inanimate reflexive verbal complex is given in (4a), where the inanimate transitive verb stem is *mêskociht* '*x* changes *y* (inanimate).'[4]

(4)   a.   [mêskoc(-itawâ)-ihc-*ipayi*]-w sîpiy $(t \rightarrow c / \underline{\quad} i)$
                change-??-TRAN-INCH-0   river
                'the river changes its own direction'

    b.   ayisiyiniw-ak [mêskoc-itawâ-ht-*â*]-wak sîpiy[5]
                person-PL   change-??-TRAN-I.TH-3PL river
                'people change the direction of the river'

Again, the inchoative suffix *-payi* occurs where the inanimate theme sign *-â* occurs in the transitive counterpart. The reflexive sentence (4a) can be used, for instance, if a river is conceptualised as actively responsible for the change of the route it takes. (Imagine a huge river that snakes its way through the vast land, and changes its direction whenever it floods.)

This subsection has witnessed the use of the inchoative suffix *-payi* as a reflexive suffix, i.e. as the inanimate equivalent of the animate reflexive suffix *-iso*. The occurrence of *-payi* in reflexives as well as in dynamic unaccusatives remains a coincidence, unless the derivation of the latter involves reflexivisation. On the other hand, if dynamic unaccusatives are derived via reflexivisation, then it comes as no surprise for *-payi* to appear in both dynamic unaccusative and reflexive verbal complexes.

---

[3] A speaker commented that the reflexive verbal complex in (3a) is the inanimate counterpart of the reflexive verbal complex (i), which contains the reflexive suffix *-iso*.
(i) kanâc-ih-*iso*-w   awâsis
     clean-TRAN-REFL-3 child
     'the child cleaned him/herself'
This speaker's intuition seems to confirm the reflexive use of the inchoative suffix *-payi*.
[4] In both inanimate reflexive examples, the transitive suffix is the manner-neutral *-iht*. This may not be accidental. As discussed in §3.2.2.1, the manner specified on a transitive suffix is instrumental, and thus implies the existence of an animate agent (in unmarked contexts).
[5] I do not know what the morpheme *-itawâ* (perhaps, a "medial") means and why it is optional in (4a), but obligatory in (4b). The dynamic unaccusative version of (4a) is (i).
(i) [mêskoc(-itawâ)]-*ipayi*-w sîpiy
     change-??-INCH-0   river
     'the river changes the direction'
The translation alters from "its own direction" (4a) to "the direction" (i) accordingly.

The use of the inchoative suffix *-payi* in reflexive contexts, therefore, lends support to a reflexivisation analysis of Plains Cree dynamic unaccusatives. Once the inchoative suffix *-payi* is identified as the morpheme that triggers reflexivisation, on par with the reflexive suffix *-iso*, the remaining task is to articulate how reflexivisation is implemented and how inchoatives and reflexives can be distinguished within the current theoretical assumptions. This is the task of the next section.

7.2 An Implementation of Reflexivisation

There are two options to implement reflexivisation in syntactic terms, either in terms of movement or in terms of binding. In this section, I first explain why movement must be chosen over binding on theoretical and empirical grounds. Then I propose a way to distinguish between the reflexivisation that gives rise to dynamic unaccusatives and the reflexivisation that gives rise to reflexives.

7.2.1 Raising over Binding

In terms of vP structures, reflexivisation can be defined in two distinct ways. One way is to move or "raise" the internal argument *pro*, which is introduced in Spec, vP$_1$, to Spec, vP$_2$, where it is licensed as the external argument (5a). This may be called the "raising" analysis. The other way is for the external argument to bind the internal argument (5b), where the binding relation is expressed by means of conventional coindexation of the two *pro*s. This may be called the "binding" analysis.

(5)   a.   *raising analysis*

b.   *binding analysis*

$$* \quad vP_2$$

$$pro_i \quad vP$$

$$v_2 \qquad vP_1$$

$$pro_i \qquad vP$$

$$v_1 \qquad ROOT$$
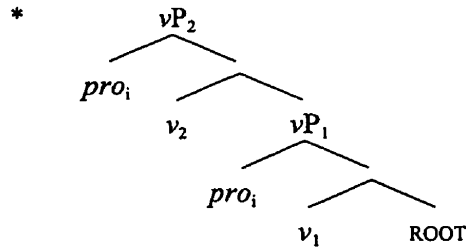
The raising structure is well-formed. The raised *pro* receives two theta-roles by checking the theta-role feature of v_1 in Spec, vP_1 and that of v_2 in Spec, vP_2. This violates the Theta Criterion of Chomsky 1981, 1986, to the effect that there is a one-to-one correspondence between an argument expression and a theta-role. I do not adopt the Theta Criterion in this dissertation, however. Instead, I adopt the "Relativised Theta Criterion," repeated in (6).

(6)   *Relativised Theta Criterion*
       Each v bears one and only one theta-role feature, and each theta-role feature is borne by one and only one v.

The Relativised Theta Criterion prohibits a v head from assigning more than one theta-role. Thus, as long as the two theta-roles assigned to the raised *pro* come from two different *v*s, there is no violation of the criterion. Since the two theta-roles assigned to the raised *pro* have two different sources, namely v_1 and v_2, the Relativised Theta Criterion is respected, and therefore the raising structure in (5a) is legitimate. In contrast, the binding structure in (5b) is ill-formed. This is because *pro* is the phonologically-null pronominal (Chomsky 1982), and the internal argument *pro* is bound by the external argument *pro*. This is a violation of Condition B of the binding theory.

(7)   *Condition B*   A pronoun must be free in a local domain.

In the binding structure, the entire *v*P (i.e. vP_2) is the local domain referred to in (7). Since the internal argument *pro* is not free in this local domain, it incurs a Condition B violation, and therefore the binding structure in (5b) is illegitimate. Accordingly, one must choose the raising analysis over the binding analysis.

The raising analysis is independently motivated on empirical grounds; it makes a correct prediction about reflexivisation of applicatives. When applicatives (derived by suffixation of the

applicative suffix *-amaw* to the inanimate transitive stem) are reflexivised by means of the reflexive suffix *-iso*, referential identity holds only between the external argument and the applicative argument. Consider the reflexivised applicative sentence (8) for illustration.

(8)   ni-pakam-ah-*amâ-so*-n   John   (*-amaw* + *-iso* → *-amâso*)
      1-hit-by.tool-APPL-REFL-LCAL J.
      a.   'I hit John for myself'
      b.   *'I hit myself for John'

The reflexivised applicative sentence means only (8a), where the external argument and the applicative argument are coreferential. It does not mean (8b), where the external argument and the internal argument are intended to corefer.[6] The raising analysis assigns the triple-layered vP structure in (9) to the verbal complex in the ungrammatical reading (8b). In accordance with the proposal made in §3.2.5, the external argument occupies Spec, vP$_3$, the applicative argument occupies Spec, vP$_2$, and the internal argument occupies Spec, vP$_1$. The applicative suffix *-amaw* and the reflexive suffix *-iso* are postulated as v_2 and v_3, respectively.

(9)   *nipakamahamâson*   *'I hit myself for her/him'
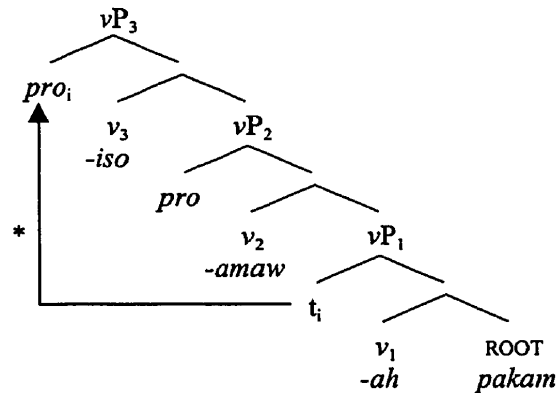
Movement of the internal argument is from Spec, vP$_1$ to Spec, vP$_3$ (i.e. the external argument position). This movement is ruled out because of the Target Conditon in (10), as the internal argument is not the closest argument defined in (11); the applicative argument in Spec, vP$_2$ is γ in (11b).

---

[6] The other logical possibility, in which the internal argument and the applicative argument are coreferential, is ungrammatical too.
(i)   *'I hit John for himself'
Here, a *pro* moves from Spec, vP$_1$ to Spec, vP$_2$. As the reflexive suffix *-iso* in v_3 as the trigger, however, the target must be Spec, vP$_3$, not Spec, vP$_2$. Hence, the reading in (i) is not obtainable.

(10) *Target Condition (revised)*
α targets β only if
    a.   α is the closest argument for β, and
    b.   β is of the right kind.

(11) *Closest Argument*
α is the closest argument for a head β iff
    a.   β asymmetrically c-commands α, and
    b.   there is no argument γ such that β asymmetrically c-commands γ, and γ asymmetrically c-commands α.

Rather, it is the applicative argument in Spec, vP_2 that is the closest argument for the reflexive suffix *-iso* in v_3 (which attracts the applicative argument to its specifier positon). If reflexivisation is analysed in terms of movement, therefore, the absence of the (b) reading from the reflexivised applicative verbal complex in (8) follows.

In sum, I choose the raising analysis over the binding analysis of reflexivisation for Plains Cree dynamic unaccusatives and reflexives. I call both the inchoative suffix *-payi* and the reflexive suffix *-iso* the "raising suffixes" in the rest of this section. The next subsection introduces a way to distinguish dynamic unaccusatives from reflexives in Plains Cree.

7.2.2 Internal vs. External Reflexivisation

The final step of my reflexivisation analysis is to distinguish dynamic unaccusatives from reflexives in Plains Cree, even though one raising operation is responsible for the derivation of both types of verbs. In this subsection, I attain this goal by adapting the two reduction operations of Reinhart (1997).

In the spirit of Chierchia (1989), Reinhart (1997) derives dynamic unaccusatives from corresponding transitives via a "reduction" operation applied at the level of argument structure. This is illustrated by the following:

(12) *transitive*
    a.   *argument structure:* $V(\theta_1, \theta_2)$
    b.   *semantics:* $V'(x, y)$

(13)   *internal reflexivisation → dynamic unaccusative*
    a.   *argument structure:* $R(V) (\theta_2)$
    b.   *semantics:* $R(V')(y) \leftrightarrow V'(y, y)$[7]

This reduction operation (symbolised with R) takes the argument structure of a transitive verb (symbolised with V) in (12a), and returns the argument structure of the corresponding dynamic unaccusative in (13a). In the process, the number of the theta-roles is reduced from two to one, hence the name of the operation. Notice the theta role that survives this reduction operation is the one which is assigned to the internal argument (i.e. θ_2). This accounts for the semantic outcome shown in (13b) (where V' stands for the verb denotation) as a reflexive relation that is ascribed to the internal argument (i.e. y). I call this reduction operation "internal reflexivisation," as the surviving theta-role is the internal one. The other logical possibility is "external reflexivisation," whereby the external theta-role escapes erasure, illustrated in (14a). The resulting semantics shown in (14b) is of a reflexive relation ascribed to the external argument (i.e. x).

(14)   *external reflexivisation → unergative*
    a.   *argument structure:* $R(V) (\theta_1)$
    b.   *semantics:* $R(V')(x) \leftrightarrow V'(x, x)$

Reinhart claims that external reflexivisation is responsible for deriving unergative verbs such as *dress* in (15a), which contrasts with its "overtly" reflexive counterpart *dress oneself* in (15b).[8]

(15)   a.   Claudia *dressed* quickly   *unergative*
      b.   Claudia *dressed herself* quickly   *reflexive*

Here, I suggest that in Plains Cree, dynamic unaccusatives are derived by internal reflexivisation, whereas reflexives are derived by external reflexivisation. There is a problem in their implementation, however. For Reinhart, the two reflexivisation processes are reduction operations that apply to the predicate's argument structure. Argument structure as a level of grammatical description, however, is absent from the current assumptions; I have vP structures only. Thus, I must define the two reflexivisation operations within my syntactic machinery. In this regard, I propose the following:

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[7] Chierchia (1989:24) assigns a meaning postulate to his reflexivisation operation to the effect that "[t]he causing factor is not perceived as an action performed by the [internal argument], but as a property or state of the [internal argument]."
[8] Thus, Reinhart (1997) differs from us in the treatment of unergatives, cf. §3.2.3.

(16)   *Internal Reflexivisation*
   The raising of the argument α is internal reflexivisation iff α checks the theta-role feature of the raising suffix β in Spec, vP_1.

(17)   *External Reflexivisation*
   The raising of the argument α is external reflexivisation iff α checks the theta-role feature the raising suffix β in Spec, vP_2 (or Spec, vP_3)

These definitions capitalise on the specifier position in which the raised argument checks the theta-role feature of the raising suffix. To see how they work, consider the inchoative and the reflexive verbal complexes in (18), and their respective vP structures in (19).

(18)   a.   kanâc-*ipayi*-w   *dynamic unaccusative*
            clean-INCH-0
            'it cleans by itself'

       b.   kanâc-ihc-*ipayi*-w   *reflexive*
            clean-TRAN-INCH-0
            'it cleans itself'

(19)   a.   *kanâcipayiw*   'it cleans by itself'
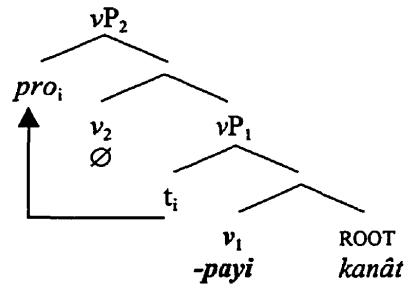

       b.   *kanâcihcipayiw*   'it cleans itself'
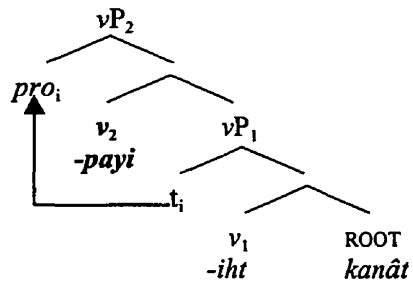
Both verbal complexes in (18) contain the raising suffix -*payi*. On one hand, in the dynamic unaccusative vP structure in (19a), -*payi* is realised as v_1. Thus, the raised argument checks the theta-role

feature of the raising suffix -*payi* in Spec, vP_1, prior to its movement to Spec, vP_2. This conforms to the definition of internal reflexivisation in (16). Hence, the inchoative verbal complex *kanâcipayiw* 'it cleans by itself' is interpreted according to the semantics in (13b) above. On the other hand, in the reflexive vP structure in (19b), -*payi* is realised as v_2. Thus, the raised argument checks the theta-role feature of the raising suffix -*payi* in Spec, vP_2, subsequent to movement. (17) ensures that this raising operation is an instance of external reflexivisation. Consequently, the reflexive verbal complex *kanâcihcipayiw* 'it cleans itself' is interpreted in conformity to (14b) above. To complete the picture, the reflexive verbal complex that contain the raising suffix -*iso* (20a) is structurally analysed as (20b).

(20) a. pîko-n-*iso*-w
          break-by.hand-REFL-3
          's/he breaks her/himself (i.e. financially)'

   b.
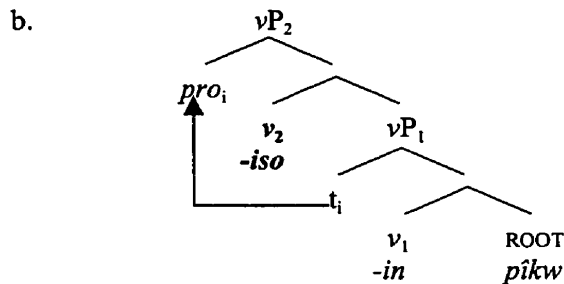
The raised *pro* checks the theta-role feature of the raising suffix -*iso* in v_2. This conforms to the definition of external reflexivisation in (17). The reflexive verbal complex *pikonisow* 's/he breaks her/himself (i.e. financially)' receives an interpretation in accordance with (14b).

In sum, I have proposed that the syntactic position that the raising suffix occupies distinguishes between inchoatives and reflexives in Plains Cree. If the raising suffix is in v_1, the outcome is a dynamic unaccusative. If the raising suffix is in v_2, the outcome is a reflexive.[9] This distinction is made in such a way that it reflects the distinction of the two reduction operations proposed in Reinhart 1997.

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[9] The reflexive suffix -*iso* does not function as the inchoative suffix. I suggest that this is because it fails to occupy v_1, the reason being perhaps that it lacks temporality τ, unlike the inchoative suffix -*payi*. I also speculate that when occupying v_2, temporality τ of the inchoative suffix -*payi* is inactive.

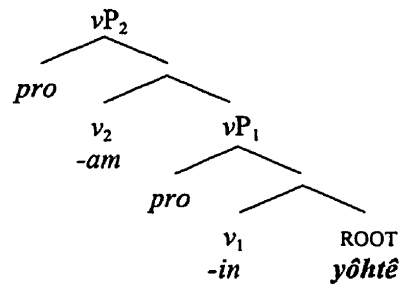## 7.3 In Place of a Conclusion: On (No) Causative-Inchoative Alternation

The preceding sections of this chapter have shown how Plains Cree dynamic unaccusatives can be analysed as reflexivisation in the form of raising. This analysis of dynamic unaccusatives has at least two implications with regard to the transitivity alternation known as the "causative-inchoative alternation" in the literature. In this alternation, the meaning of the intransitive alternant appears to be contained in the meaning of the transitive alternant. To illustrate, both alternants in (21) describe a situation in which the door comes to be open.

(21) a. Claudia *opened* the door   *causative (transitive)*
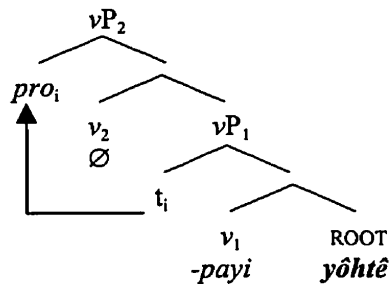   b. The door *opened*   *inchoative (dynamic unaccusative)*

The difference between them is that the causative alternant in (21a) specifies *Claudia* as the causer or agent of the change, which is absent from the inchoative alternant in (21b). Thus, in the causative-inchoative alternation, a semantic part-whole relationship appears to hold between the inchoative and the causative alternant. This part-whole relationship (along with the morphology of alternating verbs in some languages) contributes to the claim that one alternant derives from the other. For instance, on the one hand, Hale and Keyser (1993), Pesetsky (1995), among others, hold that the causative alternant derives from the inchoative alternant. On the other hand, Chierchia (1989), Reinhart (1997), among others, hold that the inchoative alternant derives from the causative alternant. My analysis of Plains Cree dynamic unaccusatives, however, denies the existence of such alternation. Consider the two verbal complexes that exemplify the Plains Cree causative-inchoative alternation in (22), and their associated *v*P structures in (23).

(22) a. Claudia yôhtê-n-am(-w) *iskwâhtêm*   *causative*
      C. open-by.hand-ɪ.ᴛʜ-3 door   *(transitive)*
      'Claudia opened the door'

   b. yôhtê-payi-w *iskwâhtêm*   *inchoative*
      open-ɪɴᴄʜ-0 door   *(dynamic unaccusative)*
      'the door opened (by itself)'

(23) a. *yôhtênam(w)* 's/he opens it' *causative*
(transitive)

```
              vP₂
             /    \
        pro      /    \
               v₂      vP₁
              -am     /    \
                  pro    /    \
                       v₁      ROOT
                      -in     yôhtê
```

b. *yôhtêpayiw* 'it breaks (by itself)' *inchoative*
(dynamic unaccusative)

```
              vP₂
             /    \
       proᵢ    /    \
              v₂      vP₁
              Ø      /    \
                   tᵢ    /    \
                       v₁      ROOT
                     -payi    yôhtê
```

The two *v* heads are realised differently in these structures. v_1 is occupied by the transitive suffix *-in* 'by hand' for the causative, whereas it is occupied by the inchoative suffix *-payi* for the inchoative. Likewise, v_2 is occupied by the inanimate theme sign *-am* for the causative, whereas it is occupied by a phonologically-null morpheme for the inchoative. The common syntactic object ROOT *yôhtê* 'open,' however, is not a predicate itself, although it conveys one defining property of the predicate, namely "conceptual content." A full-fledged predicate obtains only at the vP_2 level, when the other two defining properties of the predicate are supplied. Since neither *v*P structure contains the other in (23), there is no derivational relationship between them. Notice the internal argument of the inchoative structure in (23b) above undergoes Move from Spec, vP_1 to Spec, vP_2. This movement is triggered to check the theta-role feature of v_2. Since the moved internal argument has already checked the theta-role feature of v_1 in Spec, vP_1, it ends up with two theta-roles. This means that the internal argument of inchoatives is at the same time the external argument. In contrast, the internal argument of causatives does not bear the role of the external argument. If so, *iskwâhtêm* 'door' in (22a) is thematically different from *iskwâhtêm* 'door' in (22b), although it is the argument "common" to the causative and inchoative alternants on the surface. Hence, there is no causative alternation in Plains Cree if my syntactic analysis of dynamic unaccusatives is on the right track. This is the first implication.

The second implication concerns the way the external argument is "suppressed" in the inchoative alternant. Recall from §7.1 that I have grounded the "suppression" of the external argument of Plains Cree inchoatives (or dynamic unaccusatives) in the dual function of the morpheme *-payi* as the inchoative suffix and as the (inanimate) reflexive suffix. In fact, many languages show this property, including Romance and Semitic languages (Chierchia 1989, Reinhart 1997, cf. Haspelmath 1993). It is expected, therefore, that the proposed reflexivisation analysis of inchoatives is applicable to inchoatives of these languages, perhaps with appropriate adjustments added. For a parallel morphological reason, however, there are languages in which the "suppression" of the external argument is likely to be analysed as a kind of passivisation, rather than reflexivisation. These are the languages in which inchoative morphology is similar or identical to passive morphology, rather than reflexive morphology. For instance, many inchoatives in Japanese contain a morpheme that shows a resemblance to the passive morpheme *-rare* (24), cf. Shibatani 1990:§10.4. Likewise, many inchoatives in Korean are morphologically identical to passives (25).

(24)   *Japanese*

a.	kow-*are*-ru	'break'	*inchoative*
	kow-*as-are*-ru	'be broken'	*passive*
b.	kobo-*re*-ru	'spill'	*inchoative*
	kobo-s-*are*-ru	'be spilled'	*passive*
c.	tam-*ar*-ru	'accumulate'	*inchoative*
	tam-*e-rare*-ru	'be accumulated'	*passive*

(25)   *Korean*

a.	yel-*li*-ta	'open'	*inchoative*
	yel-*li*-ta	'be opened'	*passive*
b.	tat-*hi*-ta	'close'	*inchoative*
	tat-*hi*-ta	'be closed'	*passive*
c.	ssah-*i*-ta	'pile'	*inchoative*
	ssah-*i*-ta	'be piled'	*passive*

The morphological similarity of inchoative verbs to passive or passivised verbs suggests as the null hypothesis that the external argument of these languages' inchoatives is not "reduced," but "saturated." Then the question is how to distinguish between passives and inchoatives in terms of saturation of the

external argument (i.e. existential quantification over the external argument, cf. Chierchia 1989).[10] To work out this problem, however, is beyond the scope of this dissertation.[11] Also left open here is whether inchoatives that exhibit no such morphological clue, e.g. inchoatives in English, are to be treated in terms of reduction or saturation, provided that both reduction and saturation serve as viable analyses of inchoativisation. I leave these issues for future research.

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[10] One such difference may be the contrast between inchoatives and passives pertaining to the accessibility of the external argument in the syntax exemplified in (i).

(i) a. *The boat *sank* to collect insurance   *inchoative*
    b. The boat *was sunk* to collect the insurance   *passive*   (Roeper 1987:268)

The inchoative sentence with a purpose clause is ungrammatical (ia), whereas the passive sentence with the same purpose clause is grammatical (ib). The contrast may well be attributable to the absence versus the presence of the external argument as the "controller" of the purpose clause in (ia) and (ib), respectively (Roeper 1987, Chierchia 1989, Levin and Rappaport Hovav 1995, and Reinhart 1997, among others). See Williams 1985 and Lasnik 1988 for a different interpretation of the ill-formedness of (ib).

[11] Levin and Rappaport Hovav (1995), advocates of a saturation analysis of inchoativisation, distinguishes between passives and inchoatives, such that saturation of the external argument takes place a the level of argument structure for passives, whereas it takes place at the level of the "lexical semantic representation," the input to the argument structure, for inchoatives, cf. Pustejovsky 1995.

References

Ahenakew, Freda. 1987. *Cree language structures: A Cree approach*. Winnipeg: Pemmican Publications.

Ahenakew, Freda. ed. 1989. *Kiskinahamawâkan-âcimowinisa (Student stories)*. Saskatoon: Saskatchewan Indian Cultural Centre.

Ahenakew, Freda and H. C. Wolfart. 1983. Productive reduplication in Plains Cree. In *Actes du quatorzième Congrès des Algonquinistes*. ed. W. Cowan. Ottawa: Carleton University. 369–377.

Bach, Emmon. 1986. The algebra of events. *Linguistics and Philosophy* 9. 5–16.

Baker, Mark C. 1985. The Mirror Principle and morphosyntactic explanation. *Linguistic Inquiry* 16. 373–416.

Baker, Mark C. 1988. *Incorporation: A theory of grammatical function changing*. Chicago, IL.: University of Chicago Press.

Baker, Mark C. 1991. On some subject/object non-asymmetries in Mohawk. *Natural Language and Linguistic Theory* 9. 537–576.

Baker, Mark. C. 1996. *The polysynthesis parameter*. New York: Oxford University Press.

Blain, Eleanor M. 1997. *Wh-constructions in Nêhiyawêwin (Plains Cree)*. Doctoral dissertation, University of British Columbia.

Bloomfield, Leonard. 1946. Algonquian. In *Linguistic structures of native America (Viking Fund Publications in Anthropology 6)*. ed. Harry Hoijer et al. New York: Viking Fund. 85–129.

Bloomfield, Leonard. 1962. *The Menomini Language*. New Haven, Conn.: Yale University Press.

Bolinger, Dwight. 1973. Ambient *it* is meaningful too. *Journal of Linguistics* 9. 261–270.

Borer, Hagit. 1994. The projection of arguments. In *Functional projections*. ed. E. Benedicto and J. Runner. 19–47. GLSA, Department of Linguistics, University of Massachusetts, Amherst.

Bošković, Zeljko and Daiko Takahashi. 1998. Scrambling and Last Resort. *Lingusitic Inquiry* 29. 347–366.

Brittain, Julie. 1997. The conjunct verb in Sheshashit Montagnais. *Canadian Journal of Linguistics* 42. 253–284.

Carlson, Greg N. 1977. *Reference to kinds in English*. Doctoral dissertation, University of Massachusetts, Amherst.

Carlson, Lauri. 1981. Aspect and quantification. In *Syntax and semantics 14: Tense and aspect*. ed. P. Tedeschi and A. Zaenen. 31–64. New York: Academic Press.

Chierchia, Gennaro. 1989. A semantics for unaccusatives and its syntactic consequences. ms. Cornell University. Ithaca, New York.

Chierchia, Gennaro and Sally McConnell-Ginet. 1990. *Meaning and grammar: An introduction to semantics.* Cambridge, Mass.: MIT Press.

Chomsky, Noam. 1981. *Lectures on government and binding.* Dordrecht: Foris.

Chomsky, Noam. 1982. *Some concepts and consequences of the theory of government and binding.* Cambridge, Mass.: MIT Press.

Chomsky, Noam. 1986. *Knowledge of language: Its nature, origin, and use.* New York: Praeger.

Chomsky, Noam. 1995. *Minimalist program.* Cambridge, Mass.: MIT Press.

Chomsky, Noam. 1998. *Minmalist inquiries: The framework (MIT occasional papers in linguistics 15).*

Chomsky, Noam. 1999. *Derivation by phase (MIT occasional papers in linguistics 18).*

Comrie, Bernard. 1976. *Aspect.* Cambridge: Cambridge University Press.

Dahlstrom, Amy. 1991. *Plains Cree Morphosyntax.* New York: Garland.

Déchaine, Rose-Marie. 1993. *Predicates across categories: Towards a category-neutral syntax.* Doctoral dissertation, University of Massachusetts, Amherst.

Déchaine, Rose-Marie. 1999. What Algonquian morphology is really like: Hockett Revisited. In *Papers from the workshop on structure and constituency in native American languages (MIT occasional papers in linguistics 17).* ed. L. Bar-el, R.-M. Déchaine, and C. Reinholtz. 25–72.

Déchaine, Rose-Marie and Charlotte Reinholtz. 1998. Direct/Inverse as Case-licensing. Paper presented at the workshop on structure and constituency in the languages of the Americas. Saskatchewan Indian Federated College, Regina, 27–29 March.

Denny, Peter. 1978. The semantic roles of medials within Algonquian verbs. *International Journal of American Linguistics* 44. 153–155.

Denny, Peter. 1984. Semantic verb classes and abstract finals. In *Papers of the fifteenth Algonquian Conference.* ed. W. Cowan. Ottawa: Carlton University. 241–271.

Denny, Peter. 1989. The nature of polysynthesis in Algonquian and Eskimo. In *Theoretical perspectives on native American languages.* ed. Donna. B. Gerdts and Karin Michelson. New York: State University of New York Press. 230–258.

Di Sciullo, Anna-Maria and Edwin Williams. 1987. *On the definition of word.* Cambridge, Mass.: MIT Press.

Doron, Edit. 1999. A syntactic derivation of Semitic verbs. In *Proceedings of the 18th West Coast Conference on Formal Linguistics.* ed. Sonya Bird, Andrew Carnie, Jason D. Haugen, and Peter Norquest. 106–120.

Dowty, David. 1979. *Word meaning and Montague grammar*. Dordrecht: Reidel.

Frantz, Donald G. 1975. Unspecified-subject phenomena in Algonquian. In *Papers of the seventh Algonquian Conference*. ed. W. Cowan. Ottawa: Carlton University. 197–216.

Frantz, Donald G. and Eugene Creighton. 1982. The indefinite possessor prefix in Blackfoot. In *Papers of the thirteenth Algonquian Conference*. ed. W. Cowan. Ottawa: Carlton University. 137–142.

Gerdts, Donna B. 1991. Unaccusative mismatches in Halkomelem Salish. *International Journal of American Linguistics* 57. 230–250.

Goddard, Ives. 1967. The Algonquian independent indicative. In *Bulletin 214 Contributions to anthropology: Linguistics I*. 66–106. Ottawa: National Museum of Canada.

Goddard, Ives. 1979. *Delaware verbal morphology: A descriptive and comparative study*. New York: Garland.

Goddard, Ives. 1988. Post-transformational stem derivation in Fox. *Papers and Studies in Contranstive Linguistics* 22. 59–72.

Goddard, Ives. 1990. Primary and secondary stem derivation in Algonquian. *International Journal of American Linguistics* 56.4: 449–83.

Grimshaw, Jane. 1990. *Argument structure*. Cambridge, Mass.: MIT Press.

Grimshaw, Jane. 1991. Extended projections. Ms., Rutgers University.

Hale, Kenneth. 1983. Warlpiri and the grammar of nonconfigurational languages. *Natural Language and Linguistic Theory* 1. 5–49.

Hale, Kenneth. 1986. Notes on world view and semantic categories: Some Warlpiri examples. In *Features and projections*. ed. P. Muysken and H. van Riemsdijk. 233–254. Dordrecht: Foris.

Hale, Kenneth and Samuel J. Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In *The view from building 20: Essays in linguistics in honor of Sylvian Bromberger*. ed. K. Hale and S.J. Keyser. 53–109. Cambridge, Mass.: MIT Press.

Hale, Kenneth and Samuel J. Keyser. 1998. On the syntactic projection of predicate argument structure. Ms., MIT.

Hall, Barbara. 1979. *Subject and object in English*. New York: Garland.

Halle, Morris and Alec Marantz. Distributed morphology and the pieces of inflection. In *The view from building 20: Essays in linguistics in honor of Sylvian Bromberger*. ed. K. Hale and S.J. Keyser. 112–176. Cambridge, Mass.: MIT Press.

Haspelmath, Martin. 1993. More on the typology of inchoative/causative verb alternations. In *Causatives and Transitivity*, ed. B. Comrie and M. Polinsky. 87–120. Amsterdam: John Benjamins.

Hirose, Tomio. 2000. Plains Cree is head-initial: Morphophonological evidence. Ms., University of British Columbia.

Hornstein, Norbert. 1999. Movement and Control. *Linguistic Inquiry* 30. 69–96.

Jelinek, Eloise. 1984. Empty categories, case, and configurationality. *Natural Language and Linguistic Theory* 2. 39–76.

Kayne, Richard. 1994. *The antisymmetry of syntax.* Cambridge, Mass.: MIT Press.

Kenny, Anthony. 1963. *Action, emotion and will.* London: Routledge & Kegan Paul.

Kitahara, Hisatsugu. 1997. *Elementary operations and optimal derivations.* Cambridge, Mass.: MIT Press.

Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 21. 589–632.

Lasnik, Howard. 1988. Subjects and the theta criterion. *Natural Language and Linguistic Theory* 6. 1–17.

Lasnik, Howard. 1995. Last Resort and Affect F. In *Proceedings of FLSM* 6. Indiana University Linguistics Club.

Lasnik, Howard and Mamoru Saito. 1992. *Move α: Conditions on its application and output.* Cambridge, Mass.: MIT Press.

Levin, Beth. 1993. *English verb classes and alternations: A preliminary investigation.* Chicago, IL.: University of Chicago Press.

Levin, Beth and M. Rappaport Hovav. 1995. *Unaccusativity: At the syntax-lexical semantics interface.* Cambridge, Mass.: MIT Press.

Manzini, M. Rita and Leonardo. M. Savoia. 1998. Clitics and auxiliary choice in Italian dialects: Their relevance for the person ergativity split. *Recherches Linguistiques de Vincennes* 27. 115–138.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *University of Pennsylvania working papers in linguistics* 4.2. ed. A. Dimitriadis, et al. 201–225.

Mathiot, Madeleine. n.d. *A dictionary of Papago usage.* Bloomington: Indiana University Press.

Massam, Dianne. 1990. Cognate objects as thematic objects. *Canadian journal of linguistics* 35. 161–190.

May, Robert. 1977. *The grammar of quantification.* Doctoral dissertation, MIT.

McClure, William T. 1995. *Syntactic projections of the semantics of aspect.* Tokyo: Hituzi Syobo.

Mellow, 1989. A syntactic account of noun incorporation in Cree. In *Papers of the twentieth Algonquian Conference.* ed. W. Cowan. Ottawa: Carlton University. 247–257.

Mellow, J. Dean. 1990. Asymmetries between compounding and noun incorporation in Plains Cree. In *Papers of the twenty-first Algonquian Conference*. ed. W. Cowan. Ottawa: Carlton University. 247–257.

Mithun, Marianne. 1984. The evolution of noun incorporation. *Language* 60. 847–895.

Mithun, Marianne. 1999. *The languages of native North America*. Cambridge: Cambridge University Press.

Mourelatos, Alexander P. D. Events, processes, and states. In *Syntax and semantics 14: Tense and aspect*. ed. P. Tedeschi and A. Zaenen. 191–212. New York: Academic Press.

Muysken, Pieter. 1986. Approaches to affix order. In *Linguistics* 24. 629–643.

Nespor, Marina and Irene Vogel. 1986. *Prosodic phonology*. Dordrecht: Foris.

Parsons, Terence. 1990. *Events in the semantics of English: A study in subatomic semantics*. Cambridge, Mass.: MIT Press.

Perlmutter, David. 1978. Impersonal passives and the unaccusative hypothesis. In *Proceedings of the Berkeley Linguistics Society* 4. University of California, Berkeley.

Piggot, Glynne. L. 1979. Verb classification in Ojibwa. In *Montreal Working Papers in Linguistics* 12. ed. Alan Ford and Jim Lees. 149–186.

Pollock, Jean-Yves. 1989. Verb movement, Universal Grammar, and the structure of IP. *Linguistic Inquiry* 20. 365–424.

Postal, Paul. 1969. Anaphoric islands. In *Papers from the fifth regional meeting of Chicago Linguistic Society*. 205–239.

Pustejovsky, James. 1991. The syntax of event structure. In *Lexical and conceptual semantics*, ed. B. Levin and S. Pinker. 47–81. Cambridge, Mass.: Blackwell.

Pustejovsky, James. 1995. *The generative lexicon*. Cambridge, Mass.: MIT Press.

Reinhart, Tanya. 1997. Syntactic effects of lexical operations: Reflexives and unaccusatives. In *OTS Working Papers in Linguistics*. 1–35. University of Utrecht.

Rhodes, Richard. 1976. *The morphosyntax of the Central Ojibwa verb*. Doctoral dissertation, University of Michigan.

Roeper, Thomas. 1987. Implicit arguments and the head-complement relation. *Linguistic Inquiry* 18. 267–310.

Rosen, Sara Thomas. 1989. Two types of noun incorporation: A lexical analysis. *Language* 65. 294–317.

Rothstein, Susan. 1983. *The syntactic forms of predication*. Doctoral dissertation, MIT.

Russell, Kevin. 1999. Tne "word" in two polysynthetic languages. In *Studies on the phonological word*. ed. T. Alan Hall and Ursula Kleinhentz. 203–221. Amsterdam: John Benjamins.

Selkirk, Elisabeth O. 1984. *Phonology and syntax: The relation between sound and structure*. Cambridge, Mass.: MIT Press.

Shibatani, Masayoshi. 1990. *The languages of Japan*. Cambridge: Cambridge University Press.

Smith, Carlota S. 1991. *The parameter of aspect*. Dordrecht: Kluwar.

Sportiche, Dominique. 1998. *Partitions and atoms of clause structure: Subjects, agreement, case and clitics*. London: Routledge.

Stowell, Timothy. 1981. *Origins of phrase structure*. Doctoral dissertation, MIT.

Suzuki, Takeru. 1999. *A theory of lexical functors: Light heads in the lexicon and the syntax*. Tokyo: Hitsuzi Syobo.

Tenny, Carol. 1987. *Grammaticalizing aspect and affectedness*. Doctoral dissertation, MIT.

Tenny, Carol. 1994. *Aspectual roles and the syntax-semantics interface*. Dordrecht: Kluwer.

Tesnière, Lucien. 1959. *Éléments de syntaxe structurale*. Paris: Librairie C. Klincksieck.

Travis, Lisa. 1984. *Parameters and effects of word order variation*. Doctoral dissertation, MIT.

Ura, Hiroyuki. 2000. *Checking theory and grammatical functions in Universal Grammar*. New York: Oxford University Press.

Valentine, Jerry R. 1994. *Ojibwe dialect relations*. Doctoral dissertation, University of Texas, Austin.

van Hout, Angeliek. 1996. *Event semantics of verb frame alternations: A case study of Dutch and its acquisition*. Tilburg Dissertation in Language Studies. Tilburg.

Vendler, Zeno. 1967. *Linguistics in philosophy*. Ithaca, New York: Cornell University Press.

Verkuyl, Henk J. 1972. *On the compositional nature of the aspects*. Dordrecht: Reidel.

Verkuyl, Henk J. 1993. *A theory of aspectuality: The interaction between temporal and atemporal structure*. Cambridge: Cambridge University Press.

Waugh, Earle. ed. 1998. *Alberta elders' Cree dictionary (alperta ohci kehtehayak nehiyaw otwestamâkewasinahikan)*. Edmonton: University of Alberta Press.

Williams, Edwin. 1980. Predication. *Linguistic Inquiry* 11. 203–238.

Willaims, Edwin. 1985. PRO and subject of NP. *Natural Language and Linguistic Theory* 3. 297–315.

Wolfart, H. Christoph. 1971. Plains Cree internal syntax and the problem of noun incorporation. In *Proceedings of the international congress of Americanists* 38.3. 511–518.

Wolfart, H. Christoph. 1973. *Plains Cree: A grammatical study*. American Philosophical Society Transactions. Vol. 63. Philadelphia.

Wolfart, H. Christoph. 1978. How many obviatives: Sense and reference in a Cree verb paradigm. In *Linguistic studies of native Canada*. ed. E.-D. Cook and J. Kaye. 255–272. Vancouver: University of British Columbia Press.

Wolfart, H. Christoph. 1991. Passives with and without agents. In *Linguistic studies presented to John L. Finlay*. ed. H.C. Wolfart. 171–190. Winnipeg: Algonquian and Iroquoian Linguistics.

Wolfart, H. Christoph. 1996. Sketch of Cree, an Algonquian language. In *Handbook of North American Indians* 17. ed. W.C. Sturtevant. 390–439. Washington D.C.: Smithsonian Institution.

Wolfart, H. Christoph and Freda Ahenakew. ed. 1993. *Kinêhiyâwiwininaw nêhiyawêwin (The Cree language is our identity: The la ronge lectures of Sarah Whitecalf)*. Winnipeg: University of Manitoba Press.