

Algonquian verb structure: Plains Cree¹

Peter Bakker
Aarhus University, Denmark
& RCLT, La Trobe University, Melbourne, Australia

1 Introduction

In this paper I discuss some aspects of verbs in Plains Cree, an Algonquian language of Canada. I will focus on the structure of stems, and on the order of affixes in the Cree verb. First, I will try and construct a descriptively adequate morpheme template for Cree, and then investigate a number of theoretical models to account for that. Most literature on Cree verbal morphology discusses inflection and paradigmatic relations. My attention will go to stem formation (primary and secondary derivation) and the linear combinability of elements in the verb. I will provide a descriptively adequate morpheme template for Cree, and point out some implications for cross-linguistic models of affix ordering.

First, I will sketch briefly the place of Plains Cree within the Algonquian family (§2). Then I will discuss Cree word classes (§3) after which I will focus on verbal semantic distinctions in §4 and stem structure in §5. In §6, I survey approaches to Algonquian/Cree affix order, ultimately presenting a description of verbal affixation. In §7 I will discuss these facts in the light of cross-linguistic approaches to affix order, and some implications of this are discussed in §8 and conclusions drawn in the final section.

2 Family relations

Cree is a member of the Algonquian language family. The Algonquian languages are the geographically most widespread of North America, with speakers in British Columbia (Cree, Ojibwe) in the west to the coastal area of Labrador and Newfoundland in the east. The Algonquian languages and two languages of California, Yurok and Wiyot (the Ritwan languages) form the Algic phylum. The Plains Cree language is part of a cluster of dialects that form part of the Cree-Montagnais dialect or language continuum.

The Algonquian family consists of some 40 languages that have been

¹The transcription used for Plains Cree is the standard orthography where vowel length is indicated by macrons or circumflexes. For clarity, length is indicated by double vowels for the other Algonquian languages, and when quoting directly from an author who uses vowel doubling.

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documented to some extent. Names like Cheyenne, Blackfoot, Chippewa/Ojibwe, Illinois and Cree are well-known. The most completely documented Algonquian languages are probably Ojibwe, Cree and Fox, but even for these languages much more fieldwork and documentation is needed. All Algonquian languages are endangered. About a dozen languages formerly documented as spoken along the US east coast are now extinct. Only Kickapoo and some dialects of Cree and Ojibwe are still being learnt by children.

The Cree-Montagnais cluster can be divided into Montagnais-Naskapi and Cree. The Montagnais-Naskapi (including the Crees of Eastern James Bay, Quebec) call themselves *ilnu*, *iyiyu*, *innu* ‘people’, whereas the Crees call themselves *neehiyaw/neehiraw* (of contested etymology) etc. The Montagnais-Naskapi dialects are spoken in the Québec-Labrador peninsula and Cree from Alberta to Québec. We limit ourselves here to the Cree (**neehiLaw*) branch, specifically Plains Cree.

Cree dialects are usually distinguished on the basis of the reflex of Proto-Algonquian **l* of unknown phonetic realization, as in **neehiLaw*. This has become /r/, /l/, /n/, /δ/ or /y/ in the different Cree dialects, as in the word for ‘me’. From east to west we hear: Attikamek (Québec) *niira*, East Swampy Cree (Ontario) *niila*, West Swampy Cree (Ontario, Manitoba) *niina*, Woods Cree/Rock Cree (Manitoba, Saskatchewan) *niida* and Plains Cree (Saskatchewan/Alberta) *niya*. The Cree dialects are similar enough that they can be understood after a brief immersion.

Plains Cree has the widest geographical spread and the highest numbers of speakers of all Cree dialects. Plains Cree is spoken in Canada in Alberta, Saskatchewan, and by a few people in southwestern Manitoba. Furthermore, there are sizable numbers of immigrant speakers in British Columbia and the Northwest Territories. In the United States, it is spoken on the Rocky Boy Reservation in Montana, and until the 1990s also by a few people on the Turtle Mountain Reservation in North Dakota. Wolfart (1996) mentions between 60,000 and 70,000 Cree speakers in 1970, 26,000 of whom speak the Plains dialect. In interethnic contacts with neighboring peoples, it was often Cree that was used, for instance by Denes, Ojibwes and the Blackfoot (Bakker & Grant 1996). This may be responsible for the fact that Plains Cree is simplified in comparison to the other Cree dialects. Some of the paradigms as documented for e.g. Swampy Cree (Ellis 1983) are not found in Plains Cree, and several paradigms that are still found in earlier grammars of Plains Cree, such as the one by Lacombe (1874) and in earlier texts from the 1930s, are not common anymore in Plains Cree (e.g. the morphological dubitative evidential and two preterit forms).

Plains Cree may be simplified in relation to neighboring Cree dialects; the

language does display a complex verbal morphology. Several aspects of its structure are still not well understood, including the limits of its verbal derivational possibilities.

3 Cree

Cree is a typical polysynthetic language in the sense that almost all of the grammatical information is given in the verb, and very little in the noun. This means that verbs are frequent and also morphologically complex. Before discussing the verb, I will first briefly discuss other word classes and their morphological properties. Cree has nouns, verbs and particles. Under ‘particles’ one can identify adpositions and several kinds of pronouns and adverbs.

Nominal morphology is limited to a handful of suffixes: there is a **diminutive** suffix, a plural **number** suffix, and a **locative** suffix, all three with fairly simple and predictable allomorphs. Further there is one nominal inflectional ending, called **obviative** in the literature, which contrasts with zero-marking, called **proximate**. The obviative is used to keep the third person agent and patient distinct in a discourse. The topic is typically unmarked, whereas the newly introduced third person is marked obviative. There are **possessive** affixes: nouns can have possessive prefixes, sometimes combined with affixes, and also some extra suffixes to mark further obviative, or rather possession by a possessed entity (e.g. ‘his father’s horse’). Possessive affixes mark the possessor, and possession is marked obligatorily for, roughly, inalienable possession.

Most of these nominal suffixes recur in the verbal paradigms, with roughly the same forms and meanings. The rest of the paper zooms in on verbs.

4 Verbs in Cree

Verbs contain most of the information. It contains obligatory reference to grammatical roles and number of its arguments (subject, direct and indirect object), and optionally also several valency-changing affixes (causative, applicative, detransitivizer, passive), gender-changing suffixes (from animate to inanimate, and the reverse) plus adverbial modifiers, tense, mood, aspect, Aktionsart, discourse markers, and further also incorporated nouns, classifiers, and diminutive suffixes. Even the stems are complex, most verbs consisting of at least two formative elements suggestive of a form of Aktionsart. Consequently, one Cree verb can sometimes be equivalent to a whole sentence in English.

Cree nouns and verbs make a few inflectional distinctions that need explanation before embarking on Cree verbal morphology. First, Cree grammar distinguishes between **inclusive** and **exclusive** ‘we’. Inclusive (marked 12 in glosses) includes the hearer (‘we humans’) and the exclusive does not include

the hearer ('our son'). This distinction is found in many American languages. It is marked in personal pronouns, possessive inflection of nouns and verbal inflection in Cree.

Second, Cree has a category of **obviation**. The obviative is marked on the (animate) noun and in the verb. Its function is to keep two third persons in a discourse apart, by marking the least topicalized with an obviative suffix *-a/-wa*, which is neutral for number. In addition, it is used to mark agreement with a possessed noun (**possessive agreement**), e.g. 'his (older) brother': *ostês-a*. The obviative is also marked in the verb: possessed subjects or objects trigger the suffixes *-yi-* and *-im-* in different positions in the verb.²

- (1) a. *ostês-a* *wâpam-ê-yi-w-a* (subject is third person possessed)
 brother-OBV see.VTA-DIR-POSS-3-OBV
 'His/her (older) brother sees him.'
 ('him' refers neither to 'he/she', nor to the 'brother')
- b. *ostês-iyiw-a* *wâpam-im-ê-w* (object is third person possessed)
 brother-4-OBV see.VTA-DIR-DIR-3-OBV
 'He/she sees someone else's (older) brother.'

Third, Cree has a **person hierarchy**, which is reflected in the order of person-marking morphemes in the verb and in the transitive verb morphology. This person hierarchy is:

- (2) 2 > 1 > 3 > 3' (new third person, or obviative)

In overt person marking, the person markers higher in the hierarchy will always

²The following abbreviations are used: ABS = absolutive (transitive object, intransitive subject), AGR = agreement, AI = animate intransitive, AN = animate, APPL = applicative, BEN = benefactive, CAU = causative, CON = conjunct order, DEAN = deanimatizer, DETR = detransitivizer, DIR = direction marker, direct, DUR = durative, F = final, FUT = future, I = initial, II = inanimate intransitive, INAN = inanimate, INC = incorporation marker, INC.N = incorporated noun, INDEF = indefinite, INDEP, IO = independent order, INFL = inflectional, INST = instrumental affix, INV = inverse, IRR = irrealis, ITER = iterative, LEX = lexical, M = medial, MID = middle, NEG = negative, negation, O = object, OBV = obviative, P = person inflection, PASS = passive, PL = plural, POS = positive, POSS = possession, POT = potential, PRED = predication, PST = past, REC = reciprocal, RED = reduplication, REFL = reflexive, REL = relational, SoA = state-of-affairs, S = subject, SYNT = syntactic, TA = transitive animate, TI = transitive inanimate, TMA = tense, mood, aspect, VAI = intransitive animate, VII = intransitive inanimate, VTA = transitive animate, VTI = transitive inanimate and VOL = volitional.

linearly precede the ones more to the right in the hierarchy. In addition, there is an element in the verb, preceding the person suffixes and following possible derivational suffixes which marks whether the semantic roles of the persons follow the person hierarchy (**direct**) or not (**inverse**). In both examples (3a) and (3b), the second person precedes the first linearly. The direct and inverse suffixes indicate the semantic roles, where *-i-* is a direct marker in (3a) and *-iti-* the inverse in (3b):

- (3) a. *ki-wâpam-i-n* ‘you see me’ (2-1 semantic, 2-1 linear; direct)
 b. *ki-wâpam-iti-n* ‘I see you’ (1-2 semantic, 2-1 linear; inverse)
 2-see.TA-DIR.or.INV-non3

If the semantic roles follow the person hierarchy in (2), then direct forms are used. If they go against the hierarchy, then the inverse forms are used. Examples (3a,b) relate to the first and the second person. If third persons are involved, the direct and inverse markers have different shapes: direct *-ê-* for 3S >3O, direct *-â-* for 3S-non3O, and inverse *-ik(w)/-ik(u)* for 3S.

- (4) a. *wâpam-ê-w* ‘he sees him/the other’ (*ê* - direct)
 b. *ni-wâpam-â-w* ‘I see him’ (*â* - direct)
 c. *wâpam-ik[w]* ‘the other sees him/
 he is seen by someone’ (*ik(w)* - inverse)
 d. *ni-wâpam-ik* ‘he sees me’ (*ik* - inverse)

These constructions should not be confused with passives: in contrast to the latter, direct/inverse forms are obligatory. Cree also has passive constructions with their own morphological marking.

Fourth, all nouns belong to **animate** or **inanimate gender**. Wolfart (1996) makes the following generalization with regards to nouns: human beings, animals, spirits, trees, animal hides and garments, some body parts (e.g. kidney), some natural phenomena (snow, rock, sun/moon), some household items (snowshoe, sock, kettle) and certain plants and their products (nut, bread) are animate. Abstract nouns, formed with the deverbal suffix *-(i)win*, and instrumental nouns, formed with the suffix *-(i)kan*, are always inanimate (*nêhiyawê-* ‘speak Cree’, *nêhiyawêwin* ‘Cree language’; *cikah-am* ‘he chops it’, *cikah-ikan* ‘axe’). **Animacy** is not overtly expressed in nouns, but demonstratives and verbs display agreement in animacy with nouns. Verbs sometimes have different stems for different subjects (in intransitive verbs) or objects (in transitive verbs), depending on their animacy, and the person inflection depends on the animacy of the subject and the object.

The other major verbal category is **transitivity**. Verbs have different inflections depending on whether they are transitive or intransitive, and in some cases also distinct stems (e.g. *m̄cisow* ‘he is eating’, *m̄wêw* ‘he eats him’, *m̄ciw* ‘he eats it’). Algonquian verbs are usually divided into four classes based on animacy and transitivity, and the following abbreviations are conventions in the Algonquianist literature.

(5) intransitive animate:	VAI	AI
intransitive inanimate:	VII	II
transitive animate:	VTA	TA
transitive inanimate:	VTI	TI

Some of these can be subdivided: Wolfart (1996: 403, Table 4) distinguishes nine classes in all.

Verbal paradigms appear in two sets, traditionally called the **conjunct** and the **independent order** (sometimes ‘mode’) in the Algonquianist tradition. Algonquianists often distinguish a third order, called **subjunctive**, but that one is regularly derived from the conjunct by an extra suffix in Cree; it is used for conditional sentences.

In the conjunct order, person inflection is expressed only by suffixation, whereas the independent order uses both suffixes and prefixes. The sets of affixes show no formal similarity across the two orders. The inflection of the independent order, however, appears virtually identical to possessive inflection in the nominal paradigm.

These semantic distinctions needed more explanation, because they are more or less typical for Algonquian. In addition, stems are complex as well, including verbal classification and noun incorporation. Furthermore, Cree verbs also display marking of among others tense, mood, aspect (all prefixed), voice, valency and changes in animacy (all suffixed), etc. In the next sections I will deal first with stem structure and then with the order of affixes.

5 Stem structure

The structure of stems in Algonquian languages is commonly described and analyzed in the structuralist terms proposed by Bloomfield in his grammatical studies of Algonquian (e.g. his 1946 sketch or his grammars of Eastern Ojibwe (1958) and Menomini (1962)). Algonquian verb stems consist of at least two elements, initials and finals, and they may also contain medials. In addition, there is also the possibility of having morphemes in between these three, called pre-finals and post-initials. Each of these formatives can be complex. These terms obviously make no reference at all to the meaning of these elements, as

they only refer to the position of these elements within the stems. They do share certain semantic patterns.

Perhaps the most detailed analysis of Algonquian stem structure, and also one that does take meaning into consideration, is Goddard (1990). He states that initials denote a **state or a configuration**, whereas finals refer to the **means** by which this state or configuration has come about, and also mark the inflectional valency of the verb, i.e. the type of verb with regards to (in)transitivity and (in)animacy. Medials are always **noun-like** (Goddard 1990: 463 n. 36). Medials may be classificatory (i.e. convey information on the nature of the subject or object such as ‘stone-like’), or incorporated nouns, with generalized meanings.

The following examples may illustrate this.

- (6) *nip-* *i-* *w*
die(I)- AI(F)- 3(P)
‘he dies’ (only initial, with inflection)
- (7) *kîsk-* *isw-* *ê-* *w*
severed(I)- cut.TA(F)- DIR- 3S.3O(P)
‘he cuts him off’ (initial + final, with inflection)
- (8) *kîsk-* *ikât-* *ê-* *w*
severed(I)- leg.INC(M) DIR - 3S.3O(P)
‘He is cut off at the leg’
- (9) *kask-* *âpisk-* *ah-* *am*
closed(I)- metal(M)- INST(F)- AI.3S.3O(P)
‘he closes it with metal, he locks it with a key’ (initial+class.medial+final)
- (10) *kîsk-* *ikw-* *ê-* *sw-* *ê-* *w*
severed(I)- neck.INC.N(M)- INC- cut.TA(F)- DIR- 3S.3O(P)
‘he cuts off his head’ (‘he head-cut him’) (initial + medial + final, with inflection)

The medial in (9) is one of half a dozen classificatory medials (‘stone, metal-like’), and the medials in (8) and (10) are body part medials. Medials and incorporated nouns often do not show formal similarities with lexemes with the same meaning. Incorporated nouns, but not noun classificatory elements, are always followed by the incorporation marker *-ê*, as in (10).

Stems can be more complex than these examples, but this may suffice for now. One can call them ‘bipartite stems’ or ‘multipartite’ stems. The next section focuses on secondary derivation and inflection.

6 Survey: Cree affix order

It will be clear by now that Algonquian verbs can be quite complex, and not only the stems. Verbs display distinct derivational and inflectional morphemes for tense, aspect, mood (often subsumed, together with other elements in Algonquianist terms, under the label ‘preverbs’), Aktionsart, valency, voice, gender, transitivity, diminutivity and person agreement, as well as (not mentioned before) adverbial elements.

6.1 Bloomfield

Several persons have attempted to describe, model or explain (parts of) the Algonquian or Cree verbal morphology. I will deal with these first, and then present a much improved morpheme template. Bloomfield posthumous Menominee grammar (1962: 214ff.) makes a few remarks on the order of preverbs, distinguishing two classes. Class 1 preverbs are limited in number, frequent in use and they occur only as preverbs. Their internal order is ‘largely fixed’, and they precede class 2 preverbs. Semantically they cover among others tense, mood and aspect (TMA). Class 2 preverbs are unlimited in number, and they follow class 1 preverbs. Semantically they cover direction, manner and the like. Individual items are not frequent. Their internal order seems relatively free, notably that of the ‘modal preverbs’. In other words, Aktionsart and direction are closer to the stem than TMA.

6.2 Edwards

Mary Edwards (1954, chapters 17, 18, 52; here from a 1986 reprint of the second edition of 1961, p. 51) came up with a template for the order of preverbs in Cree, which she called verbal affixes, upon which Table 1 below is based. The model itself and the forms are Edwards’, and the labels in CAPITALS are added by me.

Edwards’ template lists only a small number of possible elements, among them the most frequent ones and only pre-stem elements. It focuses on what she calls ‘proclitics’. They cover Bloomfield’s preverbs. Probably Edwards’ categories 1-4 would fall under Bloomfield’s Class 1 preverbs, and categories 5-7 under Class 2 preverbs.

There are clear patterns observable in the ordering. Both of the outer layers show person markers. If we look at the meaning of the elements in the columns marked 1st to 6th, it is easy to note that they all denote tense, mood, aspect, and Aktionsart, roughly in this order. Columns 1-3 denote tense, with some mood; columns 4, 5 and 6 denote mood and aspect, with some tense. The morphemes in column 7 are the most lexical, and would be expressed as directional and manner adverbs in a language like English.

Table 1. Morpheme template based on Edwards (1954)

(Person) Prefix	1 st position	2 nd position	3 rd position	4 th position	5 th position	6 th position	7 th position	VERB ROOT	(10) Person suffix
1 <i>ni</i> 2 <i>ki</i> 3 -- 1PL <i>ni</i> 2-1 <i>ki</i> 2PL <i>ki</i> 3PL --	<i>ohci</i> PAST (with NEG)	<i>ka</i> FUT	<i>ki</i> PAST	<i>nohté</i> WISH	<i>pé</i> COME	<i>nitawi</i> GO AND	<i>wəwawí</i> TO THE OUTSIDE		<i>n non3</i> <i>w 3</i> <i>nán 1PL</i> <i>nánaw 1PL</i> <i>náwáw PL</i>
		<i>kíta</i> FUT	<i>wí</i> FUT/ FUT/	<i>kakwé</i> TRY		<i>póni</i> QUIT	<i>tako</i> WITH, ALONG		
				<i>ati</i> START		<i>máci</i> START	<i>miyo</i> WELL		
						<i>sápo</i> TOTALLY, THROUGH			
						<i>nihá</i> ABLE			

There are two main problems, however, with the descriptive adequacy of this template. Wolfart (1973: 77) already criticized Edwards, as her model is not consistent with the data. He observed: “Contrary to the claim of Edwards (1954: 17) no order of occurrence has been established among (...) preverbs, although *kī* past *kakī* ‘able to’ and *wī* ‘intend to’ tend to precede, and *isi* ‘thus’ to follow the others”. One can raise two kinds of objections against Edwards. First, the template/model is far from complete. There are hundreds, if not more, of these preverbal elements in Cree (Valentine 2001 even states that there are thousands in closely related Ojibwe). Edwards’ overview, however, only lists around one and a half dozen. Second, even for the elements given in the table, it is not factually correct. Alternative orders are sometimes encountered.

6.3 Wolfart

Wolfart (1996, based on his 1973 work) presents another template for verbal morpheme order. This template differs radically from the one given by Edwards, in that it is limited to the inflectional morphemes, or rather the inflectional suffixes (tense, number and person). It is given in Table 2. Wolfart’s terms differ in some respects from those used by me: column 1 and 3 correspond to my possessive agreement (§4), his column 2 with my direct/inverse. Furthermore, his columns 4, 6 and 7 deal with somewhat archaic paradigms that I have not mentioned yet. Wolfart (1973) already considered them rare in his fieldwork in the 1960s. In contemporary Plains Cree the so-called h-preterit and p-preterits (slots 4, 6 and 7 in Table 2) have almost completely disappeared.

6.4 Pinnow

Heinz-Jürgen Pinnow (1986) also devised a template for verbal suffixation (Table 3), which looks rather different from Wolfart’s. His labels for some of the elements are rather unorthodox, as is his listing of five consecutive person markers. Another special feature of his template is that he tries to make it valid for a range of Algonquian languages, and therefore perhaps Proto-Algonquian. For almost all forms, Pinnow adduces comparative evidence and presents reconstructed forms for Proto-Algonquian. This is both its strength and its main problem. For a number of Cree forms, Pinnow goes through a rather complex set of changes that justify developments like those from **ak-yaan* to *-ak* (‘I-him’) and from *ak-yin* to *-at* (‘you-him’). Pinnow does not deal with the prefixes, which in his view are secondary developments; the original system consisted only of suffixes.

Table 2. Template for inflectional suffixes (after Wolfart 1996: 410; see also Dahlstrom 1991; Wolfart 1973; Bloomfield 1958, 1962)

	1	2	3	4	5	6	7	8	9	10
VERB ROOT	Thematic OBV	Theme signs VTA, VTI	Thematic OBV	Mode: preterite	Person: non3 person	Mode: p-preterite, dubitative	Mode: p-preterite, dubitative	Person: 3 rd person	3 rd person plural and obviative	Mode: subjunctive and iterative
	/em/ (-im)	(á, é, etc.)	/eyi/ (-yit-)	-h and -hp	-n, -isk, etc.			-w, -n, -t	-ak, -ik	-i

Table 3. Template for Cree verbal suffixes according to Pinnow (1986)
Reconstructed forms given by Pinnow in italics; I have replaced them with the actual Cree morphemes.

	1 = A	2 = B	3 = C	4 = C	5 = D	6 = D	7 = E
VERB ROOT	S/O, ect. DIR markers	Person marker: O or pseudo-O	Person marker: S or O (depends on A)	Person marker: S or O (depends on A)	Person marker: S or O (depends on A)	Person marker: S or O (depends on A)	Animate number: PL
	zero: hierarchical -ek- iko S marker 'by' -eθ- [it] O marker 'to'	-w- (REL) -im-	[see fn. 3 for forms]	[see fn. 3 for forms] -yi-	[see fn. 3 for forms]	[see fn. 3 for forms]	-ik-

One of his other unorthodox conclusions is that the person hierarchy in the suffixes is 0-3"-3'-3-2-1, and not the one usually proposed for Algonquian: 2-1-3-3'. He can have meant neither the order relative to the stem nor the hierarchy relative to the inverse/direct marking, even if one assumed that he reversed it.³

Here and there Pinnow mentions problems with his template. There are a few forms that do not fit, and there are a few forms that he chose not to deal with, and some of these also lay outside the domain of person inflection. He mentions the *-h-* preterit forms, which according to him would fit between his positions C and D, but he does not do so for some other forms. He does not deal with passive inflection either.

Pinnow's template leaves us with a rather abstract model of a presumed original system. If we compare Pinnow's 'idealized' system with Wolfart's Cree template, there are a few striking differences. First, consider the position of the obviative suffixes. Wolfart's 'thematic obviative' *-im-* (**-em-*) suffix precedes the 'thematic obviative' *-yi-* (in Pinnow's Moose Cree *-li-*) suffix, whereas the order is the reverse in Pinnow. Wolfart's template is in accordance with observed facts. Second, Wolfart has a separate position for third person suffixes, which Pinnow lumps with non-third person suffixes. Wolfart is justified in doing so, because the p-preterits and dubitatives follow the first/second person suffixes, whereas they precede the third person suffixes. Pinnow, like Wolfart, leaves out most derivational suffixes that can intervene between stems and inflection, as well as the diminutive, and the hearsay-evidential, and also Wolfart's preterit suffix.

The parallels and differences between Wolfart's (Table 2) and Pinnow's numbered columns (Table 3) are: Wolfart's 10 = Pinnow's 8; Wolfart's 9 = Pinnow's 7; Wolfart's 8 = Pinnow's 3, 6; Wolfart's 6 and 7 are not discussed by Pinnow; Wolfart's 5 = Pinnow's 3, 4, 5, 6.

³ Pinnow states that the relational *-w-* under B is always combined with certain markers under C: *-aa/-ee* (IO) or *-ak/-at/-ee-* (CO).

In columns 3/C and 6/D a range of forms can be used. For convenience these are given here. The zeros in Table 3 usually stand for a specified element that changed to zero. I have changed Pinnow's Moose Cree form *-li-* (column C) to its Plains Cree near-equivalent *-yi-*. IO means independent order, CO means 'conjunct order verb':

1SG: *-yaan, -aan, -yan* (CO), *-n* (IO), \emptyset (IO, CO); **2SG:** *-yan, -yin, -an* (CO), *-n* (IO), *-i-, -e-, -n, -\emptyset (IO, CO); **1PL:** *-yaahk, -aahk, -iht/ihc-* (CO), *-naan* (IO); **21:** *-(y)ahk(w), -ahko* (CO), *-naanaw, -naw* (IO); **2PL:** *(i)yeekw, -yeek(w), -eek(w), aak(w), ak(w)* (CO), *inaawaaw, (e)naawaaw, -waaw* (IO); **3SG, AN:** *-aaw, -w, -aa, ee, -\emptyset (IO), *-(a)k, -at/-ac, it/-ic* (DO), *-am*; **3SG, INAN:** *-w, -o, -ee* (IO), *-k* (DO), *-am*; **INDEF person:** *-awi-, -aa-* (IO, CO), *-iht/ihc* (CO); **OBV:** *-(i)yi-w, -(i)yi-k, (i)yi-t, -im-aa(w), -im-ee;* etc.**

Table 4. Template covering all derivation and inflection (slightly revised from Bakker & Papien 1997)

1 (max. 1)	2 (max. 1)	3 (several)	4 (one)	5 (one)	6 (several)	7 (one)	8 (max. 1)	9 (one)
CON ORDER marker <i>e:</i> <i>ka:</i> <i>ci:</i> <i>kita</i> <u>OR:</u>	TENSE/ MOOD <i>ohci-</i> NEG PST <i>ki:</i> POS PST <i>ka/kita</i> FUT <i>wi:</i> VOL <i>kaki:</i> IRR/POT	PRE-VERBS (open ended: several slots)	VERB ROOT (open ended: several slots)	DIRECTION/ THEME <i>a:</i> non3S.3O <i>e:</i> (3S.3O) <i>i</i> (2S.1O) <i>iti</i> (1S.2O) <i>iko</i> (3S, non3O)	VOICE/ VALENCY <i>h</i> CAU, <i>iso</i> REFL, <i>ito</i> REC, <i>o</i> MID, <i>iw</i> APPL, <i>ike</i> DETR, <i>ikawī</i> PASS, <i>sī</i> BEN, <i>hikāso</i> 'pretend'	INDEP PERSON AGR <i>na:n</i> 1PL <i>na:w</i> 12 <i>na:w</i> 2PL	PL ABS <i>ik/ak</i> (INDEP) <i>waw</i> (CON)	CONDITIONAL <i>i/u</i>
PERSON in INDEP ORDER <i>ni-</i> 1 <i>ki-</i> 2					ANIMACY <i>am</i> INAN.O <i>maka</i> DEAN <i>iwe</i> AN INDEF O (antipassive?) <i>ite:</i> INAN PASS <i>ika:</i> AN PASS	CON PERS. AGR <i>ya:n</i> 1 <i>yan</i> 2 <i>ya:hk</i> 1PL <i>yahk</i> 21 <i>ye:k</i> 2PL <i>t/hat/k/hk</i> 3		
					OBV AGR <i>yī</i> OBV.S <i>im</i> OBV (pos- sessed) O			
					AGR INDEP ORDER <i>n</i> non3, <i>w/n</i> 3			

6.5 Bakker & Papen

In Bakker & Papen (1997: 314) and Bakker (1997) an attempt was made to provide a more semantically based template for verbal affixation and which included both prefixes and suffixes, and inflection and derivation. A slightly revised version is given in Table 4. It will be the basis of a more elaborate template given below.

6.6 The revised template

None of the templates shown here displays the whole theoretical range of morphemes. Bloomfield, Edwards, Wolfart and Pinnow all limit themselves to a subset of possible morphemes, and the last table from Bakker & Papen, even though attempting completeness, omits some. Table 4 is the most comprehensive one, but even this one is not complete. First, the extinct or rare preterit paradigms are omitted (column 6 and 7 in Table 2). These three sets would, following Wolfart, split column 11 into four or five columns. Second, the diminutive and frequentative are not inserted. The diminutive should appear somewhere between columns 12 and 19, but not enough examples were encountered with both diminutive and voice/valency suffixes that could help determine its exact position. The same is true for the frequentative.

We are now ready to come with a more complete template for Cree. The final table (Table 5) also omits the three preterits, the diminutives and the rare frequentative suffix *-sk*. Still, it is by far the most complete template. In this table both traditional Algonquianist structuralist terms are given and more cross-linguistic semantic terms.

The first row shows semantic labels for the slots. The second row numbers the morphemes: 1 through 7 are prefixes, 8 through 10 are parts of the stem, and 11-21 are suffixes. One column contains four numbers (14-17), because one verb may contain several of them in a row, but in practice never more than four. The third row will be discussed below. The bottom row gives the traditional structuralist labels used by Algonquianists. This template is a theoretical construct in that no verb will in practice contain more than ten morphemes.

This descriptive template will be the basis for my analysis of the order of verbal affixes in some models of affix ordering in the next section, putting it in a typological perspective.

Table 5. Revised template for Cree verbal morphemes										
Part 1. Positions 1-7										
CON [or Person]	Person [or conjunct]	Tense	Mood	Aspect 1	Aspect 2	Aspect 3	Aktionsart			
1a	1b	2	3	4	5	6	7			
TRADITIO- NAL TERMS		class 1 preverb	class 1 + 2 preverb	class 2 preverb	light RED / DUR	heavy RED / ITER	class 2 preverb ???			
Part 2. Positions 8-21										
STEM Situation	STEM INC.N	STEM Means, manner	Possessed O	Direction/ theme	Val- ency	Voice	Pos- sessed S	Person	PL ABS	Conditional
8	9	10	11	12	13	14 or 17	18	19	20	21
Initial	Medial	Final	OBV	Theme	??	??	OBV	Person	PL	Subjunctive

7 Cree and some cross-linguistic approaches to affix order

A number of models for affix order have been proposed with presumably universal properties, some of which will be discussed here, and weighted against the Cree data. The models presented below show the relative position of the affixes to the root. Please note that the models for affix orders are always presented beginning with a verbal root on the left side, followed by suffixes, and with prefixes given in reversed linear order, i.e. as if all morphemes would be suffixes, hence to the right of the stem. If the affixes in reality precede the verb, the order is of course, in absolute terms, the reverse from the model: it is the relevance of the elements to the stem and to other elements in the sentence that plays a role, with the stem as the point of departure.

Please note that the models are not always directly comparable because Cree is both prefixing and suffixing, and some affixes precede the verb (person, tense, mood, aspect, discourse cohesion markers) and others follow (valency, voice, person, number).

7.1 Derivation and inflection

A rather general observation on affix order, which is so common that it cannot be attributed to a particular author, is the observation that derivational affixes occur closer to the stem than inflectional affixes. Inflectional affixes can be expected to occur at the extremes of words, since inflection as a rule is more relevant for syntax and other elements in the sentence, whereas derivation is more relevant to the semantics of the verb, and hence occurs closer to the stem. There are a few exceptions to this rule, but generally it is true, also for Cree.

7.2 Muysken's syntactic approach

Muysken (1986) discussed a number of languages, and he based himself especially on Quechua data, an exclusively suffixing language. He proposed the following ordering principle:

- (11) ROOT - lexical mode - syntactic mode - inflectional mode

The **lexical** mode is roughly equivalent to what others have called derivational: the meaning of these morphemes is often idiosyncratic, they are limited in number, and according to Muysken their relative order is fixed. Muysken includes here verbalizing suffixes and frequentative suffixes.

The next layer is the **syntactic** mode: These elements display a variable order. Their meaning is independent, and there may be an unlimited number. Examples of such affixes are reciprocal, desiderative, diminutive, causative and others.

Finally at the outer edge we find the **inflectional** mode: of these, the order is fixed, the morphemes have no lexical meaning and they are limited in number. Examples of these are passive, benefactive, durative, 1/2 object, tense, subject, plural, etc.

If we assume that the concrete categories mentioned here would belong to the same ‘mod’ in Cree as they would in this model (but this is not at all certain), we can take this model’s order as predictions for Cree affix order. The iterative in position 6 in Table 5, almost immediately adjacent to the stem in 8-10, would fall under ‘lexical’. The frequentative or iterative reduplicative prefix (lexical mode) is indeed closest to the stem (heavy reduplication), as predicted, although the frequentative suffix *-sk-* (not discussed here because of insufficient data) seems to appear much closer to the periphery. The suffixes of the syntactic mode should all be closer to the stem than the inflectional mode.

There are several problems there: the inflectional suffixes for passive voice, plural, object and subject appear close to the periphery rather than to the stem. The syntactic suffixes would be found in the Cree template under 13 and 3, whereas the inflectional suffixes would fall under 14-17, 19, 20, and 5 and 20. The Cree durative (inflectional in Muysken’s terms) is closer to the stem than the desiderative (syntactic) (5 resp. 3). In other words, Muysken’s model fits the Cree data reasonably well, but it does not account for a significant number of the affixes.

7.3 Bybee’s semantic approach

Bybee (1985) took a more semantic approach to affix order. Her predictions were that “categories that are more relevant for the verb will occur closer to the stem than those that are less relevant” (24). On the basis of a 50-language sample, and with her definition of relevance, she arrived at a cross-linguistic tendency of morpheme order, which looks like this (only the prefixes are shown here; suffixes are shown later), but in the reversed order so that parallelism is clearer. The numbers refer to the template in Table 5.

(12) VERB STEM - aspect - tense - mood - person
 8-10 4-6 2 3 1

This model appears to be fairly close to the Cree data, as can be seen from the template numbers below the categories. The main exception is that mood in Cree is closer to the stem than tense. In fact, Bybee mentions closely related Ojibwe as an exception to this general order.

In a more detailed way, she also took other categories into consideration: valency, voice, aspect, tense, mood, number agreement, person agreement, and

gender agreement. Her predicted order would be (numbers refer again to Table 5, letters are added for later reference):

(13)	VERB STEM-valency-voice-aspect-tense-mood-number-person-gender								
	8-10								
		A	B	C	D	E	F	G	H
	<i>suffixes:</i>	13	14-17				20	19	(8-10)
	<i>prefixes:</i>			6	2	3			(8-10)

There are three deviations from this model when we relate it to Cree. As already mentioned, mood is closer to the stem than tense in Cree. Further, person markers appear closer to the stem than number: “**concord** with one or more of the arguments of the verb” (G-F, not F-G). Finally, gender is in a sense marked in the person category, since person markers differ according to gender. On the other hand, animacy/inanimacy gender also plays a role in the verb stem in Cree (slots 8-10). Apart from these three points, the model fits remarkably well.

7.4 Affix order in Minimalist Morphology

Minimalist morphology is a model developed by Dieter Wunderlich and Ray Fabri which attempts to account for the wide variety of inflectional systems found in the languages of the world. It makes use of a small set of general principles that are specific to morphology. This section is based on the summary in Fabri (1996), who applies it to Plains Cree. There are three components, each with their own specific principles: (i) the base (or lexicon), (ii) a combinatorial mechanism, (iii) a paradigm mechanism. Their claim is that the “order of affixation must conform to the hierarchy of functional categories” (Fabri 1996: 28). This hierarchy of functional categories is given as follows, with numbers again referring to Table 5:

(14) order	I	II	III	IV	V	VI	VI	VIII
VERB:	< voice	< aspect	< tense	< mood	< gender	< number	< person	< status
<i>Suffixes</i>		14-17				19?	20	19
<i>Prefixes</i>			6	2	3			

Here, ‘mood’ refers to categories such as conjunctive, and ‘status’ refers to categories like imperative and evidential (Fabri 1996: 27). It is not stated on which linguistic facts or theoretical principles this hierarchy is based. This model shows remarkable similarities to Bybee’s model, with the exception of the absence of the category ‘valency’ and the presence of ‘status’.

Not surprisingly, we can notice the same three exceptions: Cree person is

closer to the stem than number. Gender is part of the stem and the person suffixes. Mood is closer to the stem than tense.

7.5 Dik's Functional grammar

Perhaps the most sophisticated predictions come from the theoreticians of the Functional Grammar school initiated by Simon Dik. They presume a layered structure of the clause (Hengeveld 1987, 1988; Dik 1989), with four levels/orders. These are, from most basic to the most general, the term and the predicate, then the predication, then the proposition and finally the clause. The term (roughly, a noun) denotes an entity, the predicate (verb) a property or a relation, the predication a state of affairs, a proposition a possible fact and a clause a speech act. Schematically:

Table 6. The layered clause

order	level	designation
1	term: predicate:	entity property or relation
2	predication:	state of affairs (SoA)
3	proposition:	possible fact
4	clause:	speech act

Every level has its operator type. These operators have scope over the semantic domains, and can be expressed by different grammatical operators. Level 1 predicate operators specify **additional properties** of the set of SoA's expressed by the predicate. Level 2 predication operators **locate** the state of affairs in a real or imaginary world. Level 3 proposition operators represent the **attitude** of the speaker towards the truth of the proposition. Finally, Level 4 clause operators modify the basic **illocution**. The following table summarizes this information:

Table 7. Operators for each layer

	semantic domain:	grammatical category:
1	Π1 predicate operator:	specify additional properties of the set of SoA's
2	Π2 predication operator:	locates the state of affairs in as real or imaginary world
3	Π3 proposition operator:	attitude of speaker towards the truth of the proposition.
4	Π4 clause operator:	modification of basic illocution

Table 6. Revised template for Cree verbal morphemes							
Part 1. Positions 1-7							
[or Person]	Person [or conjunct]	Tense	Mood	Aspect 1	Aspect 2	Aspect 3	Aktionsart
1a	1b	2	3	4	5	6	7
TRADITIONAL TERMS		class 1 preverb	class 1 + 2 preverb	class 2 preverb	light RED/ DUR	heavy RED/ ITER	class 2 preverb ???
Muysken	INFL	INFL	SYNT		SYNT	LEX	
Bybee	G	D	E	C	C	C	
Fabri	VII	III	IV	II	II	II	
FG/ Hengeveld	II4	II2	II2	III	III?	II2	

A summary is given in Table 6, where the three major approaches to affix order are given in grey shades, and where letters (Bybee), abbreviations (Muysken), Roman numbers (Fabri) and symbols (Hengeveld) refer to the positions or general labels in these approaches.

8.1 Counterexamples

The main counterexample is the fact that mood appears closer to the stem than tense, which is a problem for all models. This seems to be an area where Algonquian is exceptional. The same deviant order is found (tense-mood-aspect-verb) in creole languages, but a history of creolization is very unlikely here. The position of the quantificational (iterative) aspect marker is more difficult to explain. Cree, like many other languages, seems better to follow Bybee's model here.

8.2 Reconstruction of typological change?

It is striking that there is a clear semantic distribution between pre-stem and post-stem categories: TMA and Aktionsart occur before the stem, whereas valency, voice and number occur after the stem. Person is indicated both preverbally and postverbally. However, there are five rare or archaic forms, all of which appear to occur on the 'wrong' side of the stem (numbers 4, 6, and 7 in Table 2): three post-stem tense-mood categories one post-stem evidential (dubitative or suppositive, not indicated) and one frequentative suffix *-sk* (not indicated). This suggests a typological shift from postverbal to preverbal marking in the history of the language, perhaps due to language contact.

Person marking may be taken to corroborate this. In the conjunct order, person is indicated exclusively by suffixes, whereas both prefixes and suffixes (none cognate with the conjunct order suffixes) are used in the independent order. Intuitively, the independent order seems to be more recent, partly because the affixes are clearly cognate with the personal pronouns and because they are virtually identical to the possessive affixes in nouns.

This suggests a typological shift in the history of Cree, or rather Algonquian, from a language where tense, aspect, mood and person (and evidentiality) were originally indicated by suffixation, to a language where these categories were indicated by prefixation.

This change is only a suggestion, and needs more research, by comparing Cree with other Algonquian languages, and by trying to find possible reasons for this shift, where language contact could be a possible explanation (cf. Heine & Kuteva 2005).

8.3 Ordering of preverbs

There is no space to try and explain some of the apparent contradictions in the ordering of preverbs in Cree. Briefly, one of the problems is that at two of these so-called preverbs have two (or more) positions. This may be because they have very distinct functions: *pê-* and *ôhci-* are not only concrete directional markers ‘to’ and ‘from’, but also temporal/aspectual or discourse-regulating elements, meaning roughly ‘past event relevant for here-and-now’ and ‘for that reason’. The same forms with both meanings can co-occur at different positions in the verb complex.

8.4 Evidential

I have not discussed the expression of evidentiality here, since the affixes are so rare in contemporary Cree (see Wolfart 1973: 41-44). From older sources the position of the so-called dubitative (rather: suppositive) suffix relative to the derivational affixes is unclear. It is worth remarking, though, that Plains Cree today uses a particle (*êtikwê* or *êtikwê*) where Cree had suffixes *-kwê-* and *-tokê-*.

9 Conclusion

This paper did not provide an explanation for all observed facts, and probably raises more questions than it answers. It provides a more detailed template of the verb than any study before, and some contradictions were noted between the Cree facts and the model.

Beyond the questions discussed earlier with regards to the position of some elements, there are several questions generated by these findings: why is tense-mood-aspect marking prefixal, whereas all operations with regards to perspective and number and gender of arguments are suffixal? How inflectional are the direct/inverse markers (Table 5, position 12)? If they are inflectional, why do they occur closer to the stem than the derivational affixes 13-17? Why are the possessed subject and object placed separately, and why before and after voice/valency respectively? These questions need further research.

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