EAST CREE GHOST PARTICIPANTS

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Abstract

The Cree verbal morphology includes a relational paradigm, characterized by a morpheme *-w-* on the verb. When verbs occur in this form, the presence in the discourse of an extra third person participant is entailed. We will argue that *-w-* introduces an argument which is realized as a pronominal object in the f-structure. We further argue that what has traditionally been called an obviative morpheme (*-im-*) is in fact an alternative realization of relational morphology.

1 Introduction

The LFG architecture models grammar as distinct, simultaneously present grammatical modules (or *levels* or *structures*).[1] Each of these modules has its own formal and theoretical characteristics. The mapping between the modules is defined with functions and relations (Kaplan and Bresnan, 1982; Dalrymple et al., 1995; Dalrymple, 2001). This *Parallel Projection Architecture* or *Correspondence Architecture* (Kaplan, 1989; Asudeh and Toivonen, 2009) allows for mismatches between different grammatical modules or structures (Bresnan, 2001). Mismatches between phonological phrases and syntactic phrases are common. Also, an auxiliary verb can be a c(onstituent)-structurally independent and complete word while not an f(unctional)-structure "word" (a complete functional structure with a PRED feature and dependents). This paper concerns a particularly interesting apparent mismatch between c-structure and interpretation, so-called *relational constructions* in Cree.

East Cree has a relational form that is marked with a *-w-*. It entails the presence of an extra animate third person, in relation to which the action was performed:[2]

(1) pâhkupayiht-â-**w**-e-u.
dry-AI-REL-TS-3
'She dries it (in relation to him/her/them)'

In (2), the verb is not in the relational form and no extra third person is entailed:

(2) pâhkupayiht-â-u.
dry-AI-3
'She dries it.'

The specific role of the extra "ghost" participant depends on the linguistic or extra-linguistic context. Possible interpretations include a possessive relation or a location

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[2]List of abbreviations: REL relational, TS theme sign, II inanimate intransitive, AI animate intransitive, TI transitive inanimate, TA transitive animate, DIR direct, OBV obviative, PROX proximate, DEM demonstrative.

by the third person. Crucially, the participant cannot be mentioned with an overt NP in the immediate clause headed by the relational verb. The referent can, however, be expressed as an overt NP in another clause or as a possessor within an NP.

We propose that the relational morpheme contributes a third person animate object pronoun to the f-structure of the verb. This pronoun is marked in the c-structure with the relational morpheme. No independent object is allowed in the c-structure, neither as a pronoun nor a full NP. This object picks up its referent from the context and it does not have a typical direct object thematic role such as theme or patient.

In addition to the relational *-w-* verbs, there is another class of verbs that is traditionally referred to as obviative verbs, marked by *-im-*. Below, we will follow previous suggestions in the literature and connect the two classes of verbs as different morphological realizations of the relational form.

2 Brief background on East Cree

East Cree is an Algonquian language spoken on the eastern coast of James Bay, in Northern Québec, Canada. It is part of the Cree-Innu dialect continuum described in MacKenzie (1981). There are around 13,000 East Cree speakers in 9 communities. The speakers divide into two major dialects, the Northern and the Southern dialect.

East Cree is a non-configurational (Hale, 1983), polysynthetic (Sapir, 1921), head-marking (Nichols, 1986) language. Cree morphology divides verbs into four distinct classes (Bloomfield, 1946, a.o). The classes are listed in (3) and exemplified in (4):

(3)

INTRANSITIVE VERB WITH INANIMATE SUBJECT	(II)
INTRANSITIVE VERB WITH ANIMATE SUBJECT	(AI)
TRANSITIVE VERB WITH INANIMATE OBJECT	(TI)
TRANSITIVE VERB WITH ANIMATE OBJECT	(TA)

(4)

II	*wâpân*	'it is dawn'	TI	*wâpahtam*	'she sees it'
AI	*wâpû*	'she sees'	TA	*wâpameu*	'she sees him'

Obviation is a central morphosyntactic feature in Algonquian languages (Goddard, 1990): all but one third person participant is marked as a non-topic in a discourse span (Russell, 1991, 1996). The non-topic nouns will receive obviative marking, and only one third person NP can be proximate. Obviation is illustrated by the examples in (5):

(5) a. ni-wâpam-â-u-ch napeu-ch
1-see.TA-TS(DIR.1>3)-3-PL man-PROX.PL
'I see men.'

b. wâpam-e-u-ch napeu-h an-ichii
see.TA-TS(DIR.3>3′)-3-PL man-OBV.PL DEM-PROX.PL
awâsh-ich
child-PROX.PL
'The children see men/a man.'

In (5a), there is only one third person argument, and it is PROXIMATE. Example (5b) contains two third person referents, and only one (the subject) is proximate. The object, *man*, carries obviative marking. Wolfart and Carroll (1981) describe the proximate as "one that is close at hand, center of attention in the discussion, the main point of interest and often the person mentioned first". They describe the obviative as "one that is further away, less important in the conversation, perhaps a figure in the background or one mentioned later".

The gloss DIR in (5) stands for DIRECT marking. In direct marking, mapping onto grammatical functions is determined by the following hierarchy:

(6) SECOND PERSON (2)
FIRST PERSON (1)
THIRD PERSON PROXIMATE (3)
THIRD PERSON OBVIATIVE (3′)

Second person outranks first person, first person outranks third person proximate, and third person proximate outranks third person obviative. In direct marking, the hierarchy in (6) aligns with the hierarchy of grammatical functions. When this mapping is violated, the verb is marked with inverse (INV) morphology.

The verb contains morphemes specifying the arguments of the clause and how they act on each other. These morphemes are called *theme signs* (TS). The TS is found on transitive verbs right after the stem, and it varies according to person combinations and for transitive animates, it indicates direction (direct, inverse). For example, the notation TS(DIR.1>3) in (5a) means a theme sign for 'first person acting on third person'; see Baraby and Junker (2014).

These brief notes obviously do not do justice to the complexities of East Cree morphology and syntax, but we hope that the remarks at least give a sense of what the glosses refer to. For more details, see Junker (2015).

Most of the examples in this paper have been collected by Marie-Odile Junker and colleagues during grammar and verb paradigm documentation workshops held with elders and Cree School Board staff members and during individual sessions with speakers over the last 15 years (Junker and MacKenzie, 2015b,a). Some examples cited here have already been presented in Junker (2003b). Unless otherwise specified, the examples are from the southern dialect of East Cree, but the data have also been confirmed by northern dialect speakers. Relational morphology exists also in other varieties of Cree, and examples from those varieties are marked as such.

3 Relational morphemes in East Cree

3.1 The relational morpheme *-w-*

Cree verbs are sometimes marked with a relational morpheme *-w-*, discussed by Howse (1844); Bloomfield (1928); Ellis (1971); Junker (2003b); Cenerini (2014); and others. Bloomfield (1928) coined the term "relational form". The relational paradigm

always takes direct (not inverse) morphology. The *-w-* morpheme introduces a third person participant into the sentence, and that third person is often a possessor:

(7) a. wâpahtam-**w**-e-u u-mûhkumân-iyû.
see.TI-REL-TS-3 3′-knife-OBV
'S/he sees his/her (someone else's) knife.'

b. ni-wâpahtam-**w**-â-n Mary u-mûhkumân
1-see.TI-REL-TS-1 Mary 3-knife
'I see Mary's knife.'

In (7a), the possessor is not expressed with an overt noun. The referent of the possessor is some third person, but crucially not the same as the subject. In (7b), the possessor is overtly expressed with the NP *Mary*.

The third person participant can only be overtly expressed in the clause if it is embedded as a possessor of an NP (7) or as a dependent of another clause. The third person may not be overtly expressed as a dependent of the verb: it is a "ghost" participant. The referent of the third person is retrieved from the extra-clausal context (unless it is a possessor). The referent is often someone previously mentioned in the surrounding discourse, or someone salient in the context. The specific role of the participant varies greatly, but typical interpretations are as a possessor (as mentioned above),"at his/her place" or "but he/she did not". The (b) examples of (8–9) are relational, and the translations have been suggested by Cree speakers.

(8) a. ni-wâpahte-n mistikw.
1-see.TI-1 wood
'I see a stick.'

b. ni-wâpahtam-**w**-â-n mistiku-yû.
1-see.TI-REL-TS-1 wood-OBV
'I see a stick (but she does not)/(over at her place).'

(9) a. ni-mîyeyihte-n e nipaa-t an awâsh
1-be.happy.TI-1 CONJ eat.AI-3 DEM.PROX.SG child.PROX.SG
'I am happy (that) that child is sleeping.'

b. ni-mîyeyiht-am-**w**-ân e mîchisu-yich ut-awâshim-h
1-like-TI-REL-TS-1 CONJ eat.AI-3′ 3-child-OBV
'I am happy (in relation to her) that her child is eating.'

Below we list an additional example from Innu (Montagnais), where the relational morpheme is *-u-*, and the ghost participant in (10b) and (10c) is Peter.[3]

[3]The examples in (10) are adapted from Drapeau (2014, 286) and Drapeau (2013). The glosses in (10a–b) are ours.

(10) a. nit-ishkuashuku-n assik^{u} ka-tshi usham-an nipi.
1-be.burned.by.something.AI-1 cauldron CONJ-PST boil.TI-1 water
'I was burned by the cauldron after I boiled water.'

b. nit-ishkuashuk(u)-**u**-a-n ut-assik^{u} Pień ka-tshi ushak
1-be.burned.by.sth.AI-REL-TS-1 3-cauldron Peter CONJ-PST boil.TI-1
nipi-ńu.
water-OBV
'I was burned by the (his) cauldron, after Peter boiled water.'

c. [Peter boiled water and when I come to use the same pot]
assiku-ǹu nit-ishkuâshuk(u)-**u**-â-n
pot-OBV 1-be.burned.by.something.AI.REL-TS-1
'I am burned by the pot.'

The examples above show that relational ghost participants are associated with a range of interpretations, and there is no description in the literature of their exact meaning. Scholars describe the contribution of the relational form simply as the addition of a third person:

> "[...] it registers the presence, in the universe of discourse, of additional third person participants." (Junker, 2003b, 319)

> "The relational form is a way to acknowledge the participation, or at least the presence, of an additional third person which benefits or not from the action." (Cenerini, 2014)

> [The relational form expresses] "the involvement of a party other than actor or subject, who is beneficiary or recipient of the action, or is in some way interested in it" (Ellis, 1971)

Despite the fact that the relational form does not refer to a single semantic role, Cree speakers are remarkably good at assigning a specific interpretation to the ghost participant. This can be compared to the ability of speakers of English and many other languages to assign an interpretation to an unexpressed agent in passive sentences.

Let us return to the inability of the third person participant to be expressed with an overt NP in the clause headed by the relational verb:

(11) a. wâpaht-am-**w**-e-u
see-TI-REL-TS-3/3′
'S/he sees it (someone else's knife).'

b. *Mary ni-wâpaht-am-**w**-â-n.
Mary 1-see-TI-REL-TS-1
(intended: 'I see it, in relation to Mary.')

(12) a. ni-nipâ-**w**-â-n
1-sleep.AI-REL-TS-1
'I sleep (at his/her house).'

b. *Mary ni-nipâ-**w**-â-n.
Mary 1-sleep-AI-REL-TS-1
(intended: 'I sleep, in relation to Mary.')

The relational morpheme can in principle refer to a person named Mary, but no overt NP *Mary* can appear in the clause as the relational participant.

3.2 The so-called obviative morpheme *-im-*

The East Cree *-im-* affix has traditionally been called an obviative marker, but it seems to have the same function as relational *-w-*. We argue that *-im-* and *-w-* should be regarded as the same morpheme as far as the syntax and semantics is concerned, even though the two obviously have different phonology, and also different morphology, since they attach to different classes of verbs: while *-w-* goes on intransitive verbs with animate subjects and transitive verbs with inanimate objects, *-im-* goes on transitive verbs with animate objects. The *-im-* morpheme is illustrated in (13)–(14):

(13) a. wâpam-e-u.
see.TA-TS-3
'S/he sees him/her.'

b. wâpam-**im**-e-u
see.TA-REL-TS-3/3′
'She sees him/her (someone else's husband/wife).'

(14) ni-ki paaschisw-**im**-â-yiuh nâ-yiuh wishtaah
1-FUT shoot.TA-REL-TS-3′ DEM-3′ behind.something
'I am going to shoot him, this one (3′) (who is behind this first caribou (3))'

Example (14), adapted from Collette (2014, 158), is from Northern East Cree.

The *-im-* morpheme has been called an obviative morpheme, because it requires third person objects to be obviative. Third person objects can typically be proximate in the appropriate discourse setting, but *-im-* forces the obviative. We propose that the unusual obviative marking in a single animate NP is due to the fact that there is another, more topical, third person participant in the clause, a covert 'ghost' participant.

The *-im-* and *-w-* morphemes share the following traits in common: 1) Both morphemes are used to indicate the presence of an animate third person, a ghost participant. 2) The ghost participant cannot be overtly expressed as a direct dependent of the relational verb. (That is why we call it a ghost participant.) 3) The action denoted by the verb is performed in relation to the ghost participant. 4) Unless the ghost participant is overtly mentioned as a possessor, the referent is picked up from the discourse, or the general context.

Since *-im-* and *-w-* both license the same type of participant, we treat them the same in this paper. The similarity between the two has previously been noted by Junker (2003a,b); Ellis (2004); and Cenerini (2014).

The *-im-* relational morpheme occurs on TA verbs and *-w-* occurs on TI and IA verbs. This leaves (II) verbs (intransitive verbs with inanimate subjects) without a relational form. We have no explanation for this gap, other than it seems consistent with the way animacy is in general respected in Cree: in general, an animate referent will not have a lower grammatical function than an inanimate form. Consider an example like *miywaashuuh* 'they.INAN are beautiful', where the inanimate plural referent is the subject, and the subject is the highest grammatical function. A relational morpheme would add an animate third person participant that would be outranked by the inanimate subject, which is not generally permitted in Cree.

4 Ghost participants: Arguments or adjuncts?

The Cree ghost participants are remarkable in that the verbal morphology forces the presence of a third person in the interpretation of the sentence, but that person may not be expressed as an overt argument of the verb. In typical cases of pronoun incorporation, a full NP and sometimes also a freestanding pronoun can express the same function (in which case the morphologically incorporated pronoun in some cases functions as an agreement marker). Is the ghost participant a true argument of the verb?

4.1 The distinction between arguments and adjuncts

A prototypical argument is a core participant of the verb and syntactically obligatory. The core participant criterion is often considered a semantic requirement, and obligatoriness is instead considered to be a syntactic requirement (see Barbu 2015 for references and discussion). These two criteria do not always line up. For example, the verb *eat* seems to take two core participants, an eater and something eaten. However, *eat* can readily occur without an object in a sentence like *Sue was eating* or *Micky eats early on Fridays*. Also, adverbials are sometimes obligatory, even though they are not core participants of the verb (Goldberg and Ackerman, 2001):

(15) a. These tomatoes grow quickly.
b. ?? These tomatoes grow.

The two basic criteria for argumenthood thus do not always combine to unequivocally determine whether a phrase is an argument or an adjunct, as has previously been noted by Grimshaw (1990); Jackendoff (2001); Koenig et al. (2003); and many others.

A number of syntactic diagnostics for argumenthood have been proposed by, among others, Fillmore (1968); Jackendoff (1977); Pollard and Sag (1987); see Forker (2014) and Needham and Toivonen (2011) for references and discussion. These di-

agnostics neatly distinguish prototypical arguments from prototypical adjuncts.[4] An example argumenthood diagnostic is *the VP anaphora test* (Lakoff and Ross, 1966; Jackendoff, 1977): adjuncts may be added to 'do so' clauses, but arguments may not:

(16) a. Lance broke a chair on purpose and Lambert did so by mistake.
b. *Lance broke a chair and Lambert did so a lamp.

In (16a), *by mistake* is an adjunct and may therefore appear after *did so*. On the other hand, *a lamp* in (16b) is an argument and therefore may not appear after *did so*.

In (16), *by mistake* is a prototypical adjunct, and *a lamp* is a prototypical argument. Not all phrases are, however, so straightforwardly categorized: some classes of phrases seem to fall in between arguments and adjuncts. Instruments, for example, are cross-linguistically difficult to categorize, as they pattern with arguments according to some tests and adjuncts according to others (Donohue and Donohue, 2004; Koenig et al., 2003; Van Valin and LaPolla, 1997). Other types of phrases that seem to fall between arguments and adjuncts include benefactive NPs (e.g., bake *someone* a cake, Toivonen 2013), directional PPs (e.g., run *to the store*, Van Luven 2014), and result XPs (e.g., laugh oneself *silly*, Christie 2013, 2015).

The in-between cases have been treated in various ways in the literature. Kay (2005) calls them *added arguments* and assigns them a specific construction within a Construction Grammar framework. Rákosi (2012) analyzes the in-between cases as *thematic adjuncts*. Asudeh and Giorgolo (2012) argue that different types of dependents differ in how they compose semantically. Manning (2003) argues that the distinction between arguments and adjuncts is simply gradient. Hedberg and DeArmond (2009) distinguishes between primary and secondary arguments.

We make use of Needham and Toivonen's (2011) proposal here. They argue that in-between cases are added or *derived arguments*. These arguments are not part of the verb's basic argument structure; instead, they are licensed by some mechanism of the grammar or lexicon. This mechanism is often but not always tied to derivational morphology. In their LFG account, they specifically propose that derived arguments are arguments licensed by lexical rules in a(rgument)-structure. These "rules" are statements of possible correspondences such as those proposed by Bresnan and Kanerva (1989); Alsina and Mchombo (1989); Bresnan and Moshi (1990); Bresnan and Mchombo (1995). The rules constrain the correspondences between lexical entries in LFG's a-structure, which connects information between the lexicon and f-structure .

4.2 Cree ghost participants as derived arguments

We propose that Cree ghost participants are pronominal arguments, introduced by the relational morphemes *-w-* and *-im-*. This conclusion is not obvious, as these elements display mixed characteristics of arguments and adjuncts, which we will show below.

[4]To our knowledge the so-called argumenthood tests have mostly been applied to English. See, however, Prytz (2012) and Toivonen (2012) for application of the tests to Swedish.

We start our discussion with two adjunct-like characteristics, and then turn to three criteria that indicate that the ghost participants do, in fact, pattern with arguments.

Many regular syntactic argumenthood tests, such as for example the VP anaphora test mentioned above, cannot be applied to the Cree ghost participants, because they are not overtly realized in the clause.[5] There are, however, a few other criteria that apply.

The *core participant* criterion is a basic diagnostic for argumenthood. If an element is semantically required for the event denoted by the verb to take place, it is an argument. In other words, a participant entailed by the verb is an argument. For example, an *eating* event requires an eater and something that is eaten, and a *sending* event requires a sender, something being sent and a recipient. Consider (17):

(17) a. ni-nipâ-n
1-sleep.AI-1
'I sleep.'

b. ni-nipâ**-w-**â-n
1-sleep.AI-REL-TS-1
'I sleep (at his/her house).'

The verb *sleep* entails one core participant, a sleeper. When *sleep* is used with relational morphology, it is understood that an extra third person is present or relevant. However, this extra third person is not part of the core meaning of *sleep*. By the core participants test, then, the ghost participant is an adjunct.

Another test for argumenthood is the *optionality* criterion. According to this criterion, optional phrases are more likely to be adjuncts, and obligatory phrases are arguments. The ghosts are not obligatory; in fact, they are not even optionally present. If these elements are arguments, they are extraordinary arguments indeed.

Prototypical arguments are not optional. However, there are many examples of optional phrases that are nonetheless considered to be arguments, for example, the object of verbs like *wash* and *drink*. When a participant is not expressed (like our ghost participants), the *specific referent* can be used to test its argumenthood status. Forker (2014); Croft (2001); and Matthews (1981) argue that unexpressed canonical arguments are interpreted as referring to some specific person (or people or things): there must be a specific and accessible referent in the discourse context. This is true for the Cree ghost participants. The relational morpheme does not make reference to people in general; it is not interpreted as a generic 'one' or 'they'. By this diagnostic, the ghost arguments thus pattern with arguments, not adjuncts.

East Cree morphology provides two hints about the argumenthood status of the ghost participants. First, the second overt argument in the clause must be obviative:

[5]When they seem to be realized as possessors (e.g., (7b)), the overt possessor is part of the object noun phrase, and the possessor co-refers with the ghost pronominal. We return to this in section 5.

(18) a. ni-wâpam-â-u awâsh.
1-see.TA-TS-3 child
'I see a child.'

b. ni-wâpam-**im**-â-yûh awâsh-a.
1-see.TA-REL-TS-3′ child-OBV
'(John steps back, and when he steps back,) I see a child.'

(19) a. wâpam-e-u u-tem-h.
see.TA-TS-3 3-dog-OBV
'S/he sees his/her (own) dog.'

b. wâpahtam-**im**-e-u u-tem-iyûh.
see.TA-REL-TS-3 3'-dog-OBV
'S/he sees his/her (someone else's) dog.'

In (18a), *awâsh* 'child' is proximate (morphologically unmarked). This is consistent with the requirement of Cree that at most one third person argument is proximate, the others must be obviative. In (15), the subject is a third person proximate and *ute-meh* 'dog' is obviative. The post-verbal NPs in the relational (b) examples both have obviative morphology. This is in principle not problematic: there could be another discourse participant that is more topical or salient and therefore proximate, even if it is not mentioned in the clause. However, what is peculiar is that the postverbal NPs in the (b) examples *must* be obviative. The fact that they cannot be proximate strongly suggests that the ghost participant is an argument of the verb, and it further suggests that this ghost participant is interpreted as being proximate, in the foreground.

Another indication that the ghost participants are arguments of the verb comes from the use of the theme sign. The order of morphemes is given in (20):

(20) PERSON-stem-RELATIONAL-THEME SIGN-PERSON/TENSE/MOOD

AI, TI or TA relational verbs all have transitive animate (TA) theme signs:[6]

(21) a. ni-nipâ-w-**â**-n (AI verb)
1-sleep.AI-REL-TS-1
'I sleep (at his/her house).'

b. ni-wâpahtam-w-**â**-n mistiku-yû. (TI verb)
1-see.TI-REL-TS-1 wood-OBV
'I see a stick (but she does not)/(over at her place).'

c. wâpam-im-**e**-u u-tem-iyûh. (TA verb)
see.TA-REL-TS-3 3'-dog-OBV
'S/he sees his/her (someone else's) dog.'

[6]The *-â-* direct theme sign indicates that a first or a second person acts on a proximate third person. The *-e-* direct theme sign indicates that a proximate third person acts on an obviative third person.

The theme signs included in these verbs are the same that would normally occur only on TA verbs. So, the theme signs behave as if there is an animate object in the clause.

We conclude that the relational participants display mixed argument-adjunct characteristics, but the evidence is consistent with an analysis of the participant as a derived argument.

4.3 Applicatives in East Cree

We argue for an analysis where relational verbs introduce an argument into the clause. This analysis raises the question of how relational verbs differ from applicative verbs. East Cree has a true applicative that is morphologically marked on the verb:

(22) a. chi-kaschisam-**uw**-in.
2-cook.until.tender.TI.2-APPL-(TS)-1/2
'You cook it tender for me.'

b. Mary ni-kaschisam-**uw**-â-u.
Mary 1-cook.until.tender.TI-APPL-TS-3
'I cook it tender for Mary.'

Examples (22a–b) are prototypical applicatives: The verb carries special morphology (*-uw-*), the valency is increased by one, and the new argument is a benefactive.

Relationals are similar to applicatives in that they involve special morphology (*-w-* and *-im-*), and the valency is (arguably) increased by one. However, the relational ghost participants may not be expressed as overt NPs in the clause, and the applicatives differ in this respect. The NP *Mary* in (22b) is an overt realization of the applied argument. Another difference is that the semantic role of the relational participant is not fixed or even restricted. Also, relationals are restricted to third person participants, whereas applicatives are not: the applied object can be of any person and number. For example, in (22a) it is first person singular. Finally, the relational object does not alternate with a corresponding oblique, the way applied objects often do.

We conclude that relationals differ significantly from applicatives. However, they are also similar in that they add an extra participant into the clause, and relationals can therefore be classified as a type of applicative, broadly defined.

5 The syntactic realization of ghost participants

Dahlstrom (1991) presents an LFG analysis of the basic morphosyntax of Plains Cree. We adopt her lexical entries as the basis for our analysis of East Cree relational morphology. The lexical entries and f-structure in (24)–(25) illustrates Dahlstrom's analysis of (23):

(23) ekosi natew awa iskwew ohi kaskite.wastimwa
so fetch.3.OBV this woman this.OBV black.horse.OBV
'So then the woman went and got a black horse.'

(24)

iskwewa, N	(↑ PRED) = ‘woman’ (↑PERS) = 3 (↑GEND) = anim (↑OBV) = −
kaskite.wastimwa, N	(↑ PRED) = ‘black horse’ (↑PERS) = 3 (↑GEND) = anim (↑OBV) = +
awa, D	(↑DEF) = + (↑OBV) = −
ohi, D	(↑DEF) = + (↑OBV) = +
nat-, V_{stem}	(↑ PRED) = ‘fetch ⟨SUBJ OBJ⟩’ (↑OBJ GEND) = anim
-ew, $]_{V\,stem}__]_V$	(↑SUBJ PERS) = 3 (↑SUBJ GEND) = anim (↑SUBJ NUM) = sg (↑SUBJ OBV) = − (↑OBJ PERS) = 3 (↑OBJ GEND) = anim (↑OBJ OBV) = +

(25)

$$\begin{bmatrix} \text{PRED} & \text{‘fetch } \langle \text{SUBJ OBJ} \rangle \text{’} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{‘woman’} \\ \text{NUM} & \text{SG} \\ \text{PERS} & 3 \\ \text{DEF} & + \\ \text{GEND} & \text{anim} \\ \text{OBV} & - \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{‘black horse’} \\ \text{PERS} & 3 \\ \text{DEF} & + \\ \text{GEND} & \text{anim} \\ \text{OBV} & + \end{bmatrix} \end{bmatrix}$$

For discussion of (23)–(25), see Dahlstrom (1991, 122–126).

Recall from section 4 above that the relational morphemes *-w-* and *-im-* introduce an argument. We propose that the relational morphology adds an argument to the argument structure of the verb. Because of the morphological evidence regarding obviative morphology and theme signs (see the discussion in section 4.2), we assume that the argument is an OBJECT. We therefore further propose that the lexical entry of the relational specifies the presence of a third person animate OBJECT (first object) in the f-structure. This object is specified with an obligatory PRED 'pro' feature which prohibits it from co-occurring with an overt object.

Relationals are thus similar to applicatives (section 4.3) and the morphemes are associated with what we will call a relational valency-changing rule in the a-structure. We assume the following rule, which is based on the applicative rule proposed in Bresnan et al. (2016, chapter 14):

(26) Add the relational morpheme *-w-* to IA and TI verbs or add the relational morpheme *-im-* to TA verbs. Add an argument in the second position in the argument structure (i.e. just to the right of the first argument).

Since the argument is added in the second position in the argument structure, all arguments but the first one on the original argument list will be demoted. In the case of TA and TI verbs, the object will be demoted to second object (OBJECT_θ). The rule does not specify the thematic role of the added participant. However, the relational morphemes add the following specifications:

(27)

-im-	(↑ OBJ PRED) = 'pro'		*-w-*	(↑ OBJ PRED) = 'pro'
	(↑ OBJ PERS) = 3			(↑ OBJ PERS) = 3
	(↑ OBJ ANIM) = +			(↑ OBJ ANIM) = +

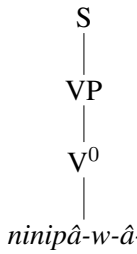
The lexical entries for *-im-* and *-w-* require the object to be third person animate. They also provide a PRED 'pro' feature for these objects.

Lexical entries such as the ones in (27) are familiar from the LFG literature on agreement marking and pro-drop (see Bresnan et al. (2016, chapter 8) for examples, discussion and references). In typical *pro*-drop, the PRED 'pro' feature is optional. When the PRED feature is absent, the morpheme is an agreement marker and the PRED feature of the grammatical function is provided by a syntactically independent NP. When the PRED feature is present, the morpheme is an incorporated pronoun and no independent NP is possible, as that would lead to two PRED features for the same grammatical function (typically a subject or an object). Features can normally unify provided that they are identical. However, each PRED feature takes a unique value and PRED features therefore cannot unify.

The PRED features of the relational morphemes in (27) are obligatory, not optional. The relational objects therefore cannot be overtly expressed as NPs: such NPs would add their own PRED feature and cause a 'PRED clash'. These 'ghosts' can, however, be overtly expressed as dependents of some other head (e.g., an embedded verb or a possessed noun). For other examples of obligatory PRED 'pro' features contributed by the morphology of the head, see Andrews (1990) and Toivonen (2000).

The c-structure and f-structure of *ni-nipâ-w-â-n* (17b) are given in (28):

(28)



$$\begin{bmatrix} \text{PRED} & \text{`sleep } \langle \text{SUBJ OBJ} \rangle \text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \\ \text{ANIMATE} & + \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{PERS} & 3 \\ \text{ANIMATE} & + \end{bmatrix} \end{bmatrix}$$

Since the lexical entries in (27) specify an animate object, the theme signs that are normally reserved for TA verbs will appear also on AI and TI verbs.[7]

Note that the relational objects are similar to applicative objects cross-linguistically in that applicatives may carry semantic roles that are not prototypical object roles. Prototypical objects are patients or themes (Dowty, 1991), but applied objects can be instruments, for example, as in the Dyirbal example in (29):

(29) a. yabu nguma-nggu balgan yugu-nggu (DYIRBAL)
mother.ABS father.ERG hit stick-INSTR
'Father hit mother with a stick.'

b. yugu nguma-nggu balgalman yabu-gu
stick.ABS father.ERG hit.APPL mother-DATIVE
'Father hit mother with a stick.'

Example (29b) is the applicative version of (29a). The absolutive *yugu* 'stick' in (29b) is an applied object: it is syntactically and morphologically an object. However, its semantic role is still that of an instrument.

Relational objects are even less restricted than objects in applicatives, as the examples above have illustrated. In many cases, the relational morphology merely establishes the existence of an additional third person participant in the context. Consider for example (30) and the corresponding (abbreviated) f-structure in (31):

(30) ni-wâpahtam-w-â-n Mary u-mûhkumân
1-see.TI-REL-TS-1 Mary 3-knife
'I see Mary's knife.'

[7] We could explore an alternative hypothesis where the relational morpheme requires an animate object theme sign, and the theme sign in turn contributes the OBJ agreement features and PRED feature. It seems clear that theme signs can contribute PRED and agreement features: subjects and objects do not need to be overtly expressed, and the information about their characteristics (animacy, etc.) then comes in large part from the theme signs. However, the PRED feature on theme signs must be optional, as theme signs can co-occur with overt NPs.

(31)
$$\begin{bmatrix} \text{PRED} & \text{`see } \langle \text{SUBJ OBJ} \rangle \text{'} \\ \text{SUBJ} & \left[ \text{“I”} \right] \\ \text{OBJ}_i & \begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{PERS} & 3 \\ \text{ANIMATE} & + \end{bmatrix} \\ \text{OBJ}_\theta & \begin{bmatrix} \text{PRED} & \text{`knife'} \\ \text{POSS}_i & \left[\text{“Mary”} \right] \end{bmatrix} \end{bmatrix}$$

In (30), the relational morpheme introduces a third person into the context. This person is not a possesssor in itself: it takes on the possessor role as a co-referent to the possessor of the knife (in this case *Mary*).

Possessors in relational constructions (30)–(33) raise some interesting questions. In all examples we have with relational morphology and a possessed OBJ_θ, the possessor is co-referenced with the ghost participant. In fact, when a relational sentence includes an object (demoted to OBJ_θ) possessed by a third person, it seems that the possessor is *necessarily* co-indexed by the third person ghost participant, even if another third person referent is available. The pronominal possessor in (32) cannot be interpreted as being coindexed with the subject (contrast with (15) above, which does not include relational morphology).

(32) wâpahtam-**w**-e-u u-mûhkumân-iyû.
see.TI-REL-TS-3 3'-knife-OBV
'S/he sees his/her/their (someone else's) knife.'

(33)
$$\begin{bmatrix} \text{PRED} & \text{`see } \langle \text{SUBJ OBJ} \rangle \text{'} \\ \text{SUBJ}_j & \begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{PERS} & 3 \\ \text{ANIMATE} & + \\ \text{NUM} & \text{SG} \end{bmatrix} \\ \text{OBJ}_i & \begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{PERS} & 3 \\ \text{ANIMATE} & + \end{bmatrix} \\ \text{OBJ}_\theta & \begin{bmatrix} \text{PRED} & \text{`knife'} \\ \text{POSS}_i & \begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{PERS} & 3' \\ \text{ANIM} & + \\ \text{OBV} & + \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

In other words, the relational morphology seems to require disjoint reference between the subject and the possessor. In order to capture this requirement, we could introduce a conditional constraint in the lexical entries for *-w-* and *-im-*: if an OBJ_θ or an ADJUNCT (as in (34) below) has a third person pronominal possessor, that possessor corefers with the relational object. This topic deserves to be investigated further. It is possible that, given the right context, it is possible to interpret (30) as 'I see Mary's knife, in relation to some other third person'. Similarly, in the right circumstances, perhaps (32) can be interpreted as 'She (x) sees some other person's (y's) dog, in relation to yet another person (z).'

(34) nipâ-**w**-e-u u-nipewin-iyi-hch.
sleep.AI-REL-TS-3 3-bed-OBV-LOC
'S/he sleeps in his/her/their (someone else's) bed.'

Another interesting question related to the possessive examples has to do with binding theory. Consider again (30)–(31). The object outranks the possessor in the f-structure; the object "f-commands" the possessor. Depending on which version of binding theory is assumed, this might be problematic according to Principle C, as the possessor R-expression is not free. We set this issue aside for now, but see Bresnan et al. (2016, chapter 10.3) for discussion and references regarding the problematic nature of Principle C.

6 Brief summary

Cree relational morphemes introduce an object pronoun into the f-structure. This pronoun picks up its referent from the linguistic or extra-linguistic context. The only overt realization of the pronoun in the immediate c-structure of the verb is the relational morpheme itself. The reason why the relational object displays mixed argumenthood characteristics is that it is a derived or added argument. It is not a basic argument of the verb, instead it is added by a rule associated with the relational morphemes. This rule is a valency changing rule that is similar to an applicative rule.

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