THREE KINDS OF NOMINALS IN NÊHIYAWÊWIN*

Jeff Mühlbauer
University of British Columbia

1.   Introduction

The possession system of Nêhiyawêwin (Plains Cree, Central Algonquian, Canadian Prairies) presents us with a means for classifying nominals into three kinds. This division is done overtly, in the morphosyntax, and thus provides an interesting case study of the kinds of possession relations that are relevant in the grammars of natural language.

At a first level of differentiation, Nêhiyawêwin has a morphological distinction between: (i) 'independent' nouns, and (ii) 'dependent' nouns (c.f. Wolfart 1973). Independent nouns can occur without possession marking (1), and comprise the bulk of nominals in the language.[1]

(1)   a.   minôs
             minôs
             cat.NA
             'a/the cat'

       b.   o**minôs**ima Wâpastim
             o-**minôs-**im-a   wâp-astim
             3-**cat.NA**-POSS-OBV white-horse.NA
             'Wâpastim's **cat**'

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[1] Key: N(D)I/ N(D)A(V) = noun (dependent) inanimate/animate (Vocative), DA/DI = Demonstrative Animate/Inanimate, AI/II = Animate/Inanimate Intransitive, TA/TI = Transitive Animate/Inanimate, IA = Inanimate Actor, POSS = possessor theme, IMP = impersonal subject, DIM = diminutive, LP = local person, CONJ = conjunct, PERF = perfect, SUBJ = subjunctive, OBV = obviative, L>3 = Local acting on 3rd person, 3>3' = Third person acting on obviative.   .
Nêhiyawêwin orthography: â = /a/, a = /ʌ/, ê = /e/, î = /i/, i = /ω/, ô ≈ /u/, o ≈ /ʊ/, c = /ts/.

In contrast, dependent nouns, which denote kinship, body-parts, and 'intimate possessions' (c.f. Bloomfield 1962), cannot occur without some kind of possessor marking for most speakers (2).[2]

(2)   a.   * cihciy
                cihciy
                hand.DNI
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        b.   **o****cihciy** Wâpastim
                o-**cihciy**   wâp-astim
                3-**hand.DNI** white-horse.NA
                'Wâpastim's **hand**'

This distinction is a common feature of the Algonquian language family, and has been discussed, for example, in Blackfoot (Uhlenbeck 1938), Menominee (Bloomfield 1962), Nishinaabemwin (Valentine 2001), among others.

Within dependent nouns, we find a further division. In Nêhiyawêwin, a dependent noun uses one of two mutually-exclusive strategies when not possessed. Dependent nouns that denote kinship terms are made into the root of an impersonal verb (3).

(3)   a.   nkâwiy
                n-kâwiy
                1-mother.NDA
                'My mother'

        b.   okâwî**mâw**
                o-kâwiy-**im-â-w**
                3-mother.NDA-**OBV-IMP-3**
                "a mother (Someone has her as a mother)"

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[2] One consultant from Alberta offers prefix-less forms in some contexts.

(i)   niwâpahtên **stikwân**
        ni-wâp-amt-am-n **stikwân**
        1-light-by.eye-TI-LP **head.NDI**
        'I saw a head'

Preliminarily, these unaffixed forms appear to only occur post-verbally. Another consultant from Saskatchewan categorically rejects unaffixed dependent nouns.

c. * **mi**kâwiy
    mi-kâwiy
    MI-mother.NDA

In contrast, dependent nouns that denote body parts and intimate possessions take the prefix *mi-* (4).

(4) a.   nistikwân
        ni-stikwân
        1-head.NDI
        'My head'

    b.   * ostikwân**imâw**
        o-stikwân-**im-â-w**
        3-head.NDI-**OBV-IMP-3**
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    c.   **mi**stikwân
        mi-stikwân
        MI-head.NDI
        'a head'

This part of Nêhiyawêwin's possession system is not universal to Algonquian, although its extent is not well-understood. Potawatomi (Central Algonquian, Wisconsin/Michigan) does not have the *mi-* prefix (c.f. Hockett 1966), and some dialects of Ojibwa apparently use the impersonal verbal strategy for body parts as well (Pentland in Junker 2003). Nevertheless, the system discussed here for Nêhiyawêwin appears to be the most general pattern in the language family.

Thus there are three categories of nouns, based on their morphosyntactic behavior when possessed. We can schematize this division as shown in (5).

(5)   Nouns
      Independent   Dependent
            Impersonal   *mi-*
            Verb   Prefixed
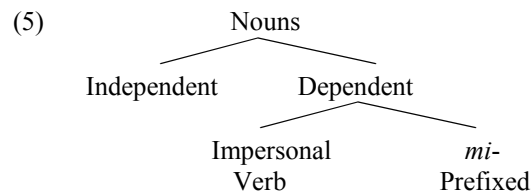
As we have seen, the morphosyntactic division of Nêhiyawêwin nominals matches their semantic category. Nouns denoting kinship are made into impersonal verbs, while those denoting body parts are prefixed with *mi-*. Thus Nêhiyawêwin's morphosyntax is providing a window into the semantics of possession in natural language.

2. Problem

Semantic theory currently has no means for capturing the tripartite division of nominals shown to be necessary for Nêhiyawêwin. This is because a division between relational and inalienable nouns has not been seen as necessary.

Higginbotham (1983) argued that possession introduces an 'R' relation into the denotation. This R relation is underspecified for content, and can theoretically mean any relation conceivable (6).

(6) a. $[[a\ snake]] = \lambda x[snake(x)] = $ 'x is a snake'
     b. $[[Jane's\ snake]] = \lambda x[snake'(x) \wedge \mathbf{R(x)(j)}] = $
   'x is a snake, and **Jane and x stand in some unspecified relation**.'

Subsequently, Barker (1995) and Burton (1995) showed that a more refined formalism was necessary for dealing with nouns that express relational concepts (kinship, body-parts, etc.). They argued that these nouns restrict the R relation with their own lexical content (7).

(7) $[[Jess'\ father]] = \lambda x[father'(x,j) \wedge \mathbf{father\text{-}of'(x,j)}]$
     'x is a father, and **Jess and x stand in the father-of relation**.'

Thus the formal semantics gives us a basic two-way distinction in nouns, by using the 'R' relation in both a free and restricted form (8).

(8)   Nouns
        /   \
    Normal   Relational
     (R)   (Restricted R)
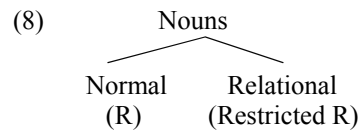
As we have already seen, however, Nêhiyawêwin morphosyntactically distinguishes at minimum three kinds of nouns (9).

(9)   Nouns
          /   \
Independent   Dependent
              /   \
        Relational   Inalienable
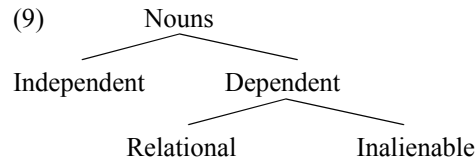
This means that the current analysis of possession semantics predicts too broad of a typology.

3. Proposal

To rectify this mismatch between formal semantic theory and Nêhiyawêwin, a re-examination of the core semantics of possession is needed. To that end, I

appeal to a more fine-grained analysis of the relations expressed by relational and inalienable nouns in order to account for Nêhiyawêwin's nominal division.

In this paper, I argue that alienable nouns, when possessed, add a bare predicate (symbolized by 'R'), in line with Higginbotham's original treatment for all kinds of nominal possession (§4). For relational nouns (§5), I argue that the value of the possessed predicate is furnished by the conceptual content of the noun itself, in line with Barker (1995) and Burton (1995). For inalienable nouns (§6), I make use of the semantics of partitives created by Link (1983) to argue that inalienable nouns encode a special ordering relation between individuals on a lattice (symbolized by 'T'). This is all summarized in Table 1.

Table 1: Possessor Relations

	Formula	**R**	**T**
Jess' tree	$\lambda x[\text{tree}'(x) \wedge R(x,J)]$	√	*
Jess' mother	$\lambda x[\text{father}'(x,y) \wedge \text{father-of}'(x,J)]$	√	*
Jess' hand	$\lambda[\text{arm}'(x) \wedge x \text{ T } J]$	*	√

4. The 'R' Relation: Alienable Nouns

For alienable nouns, I adopt Higginbotham's (1983) view that possession is an instance of an open predicate 'R'. This 'R' relation is a dyadic predicate that simply relates two individuals and gives a truth condition. 'R' is itself a variable, which can be given content via any salient relation that exists in discourse. This creates a compositional semantics like the sample shown in (10).

(10) [[*Jess' tree*]] = x is a tree and x and Jess stand in some relation.
     [[Jess' tree]] = $[\lambda y \lambda x[\text{tree}'(x) \wedge R(x,y)]](\text{Jess})$
     $\lambda x[\text{tree}'(x) \wedge R(x,J)]$ – Jess saturates possessor variable

Thus, a phrase like Jess' tree can involve any discourse-specified relation at all. If we are talking about what is in people's backyards, then this phrase can be the tree in Jess' backyard. If we are holding up pictures drawn in an art class, then this phrase can denote the tree she drew on a piece of paper. This is identical for Nêhiyawêwin, such that a phrase like *Wâpastim ominôsima* 'Wapastim's cat' can be the cat he has as a pet, the cat he sang a song about, or even the cat that comes into his yard once a week.

5. The Restricted R Relation: Relational Nouns

Turning to relational nouns, I adopt the treatments of Barker (1995) and Burton (1995), who argued that relational nouns require more specification in the semantics. Rather than the 'R' variable being supplied by discourse context, it was argued that the value of 'R' was being supplied by the nominal predicate itself. This is possible because the relational noun already denotes a relation, which is *de facto* the most salient relation in discourse (but see Burton 1995 for

exceptions).[3] Thus a phrase like 'Jess' father' does not denote 'the x who is a father and stands in some contextually-determined relation to Jess' ($\lambda x[father'(x,y) \wedge R(x,J)]$) on its most salient reading. Instead, it is claimed that the meaning is more closely approximated by 'the x who is a father and stands in the father relation to Jess.' A sample derivation of this formulation is provided in (11).

(11)   [[*Jess' father*]] = x is a father and x and Jess are in the father-of relation.
       [[Jess' father]] = [$\lambda y \lambda x[father'(x,y) \wedge father-of'(x,y)]$](Jess)
       $\lambda x[father'(x,y) \wedge father-of'(x,J)]$ – Jess saturates possessor variable

As Burton (1995) pointed out, this is formulation is logically equivalent to the simpler '[$\lambda y \lambda x[father'(x,y)]$]', but I will use the longer form '[$\lambda y \lambda x[father'(x,y) \wedge father-of'(x,y)]$]' to emphasize the parallelism with other relational structures.

   For the current analysis, I extend this treatment of English relational nouns to Nêhiyawêwin. Thus, a phrase like *Wâpastim ôhtâwiya* 'Wâpastim's father' expresses a semantically-restricted 'R' relation, identical to that encoded in English.

6. The ⊤ Relation: Inalienable Nouns

Inalienable nouns are a different story altogether. On my view, inalienable nouns do not express an 'R' relation of any kind – restricted or unrestricted. Instead, they encode a 'part-of' relation.

   A semantics for part-whole relations has been worked out in detail by Link (1998). In this algebraic system, the material part relationship is signified by the relation ⊤, which can be read 'material part of'. This operator is a two-place predicate that imposes an ordering relation on two referents based on their material composition, such that one is a material part of the other. This provides a logical language to express concepts like '*a* is a material part of *b*' (a ⊤ b). For more discussion of these concepts, including the concepts of domains of portions of matter and domains of individuals, the reader is referred to Link's (1998) work.

   For the current problem of inalienables, I extend Link's use of this material part relation to the semantic representation of inalienable nouns. Thus a body part is literally a part of the whole body, standing in a relation that has much basic logic in common with locatives, partitives, distributives, and reciprocals. A denotation is given in (12).

(12) [[inalienable]] = $\lambda y \lambda x[inalienable'(x) \wedge x \top y]$

This denotation produces a meaning for inalienables that is intuitively correct, as shown for Nêhiyawêwin in (13).

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[3] See Burton (1995) for an analysis of the *non*-salient reading of "Jess' father" (i.e. where the father is the father of someone else). He argues that they can be derived from this same basic treatment.
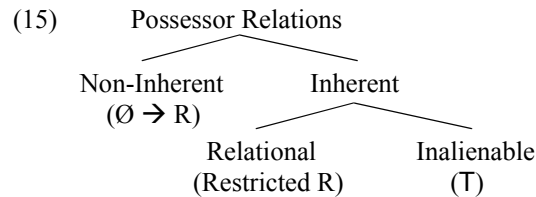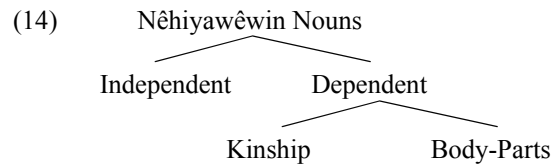
(13) *Wâpastim ocihciy* = There exists some x, such that x is a hand and x is a material part of Wâpastim.

   a. [[*Wâpastim ocihciy* 'Wâpastim's hand']] =
       [λyλx[*cihciy*'(x) ∧ x ⊤ y)]](*Wâpastim*)
   b. λx[*cihciy*'(x) ∧ x ⊤ W)] - *Wâpastim* saturates y variable

Thus inalienables are formally tied to other operations involving part-whole relations.

7. Conclusion

By introducing another kind of relation into the formal semantics, we now have a division of possessor relations that parallels the division of nominals in Nêhiyawêwin.

(14)   Nêhiyawêwin Nouns

      Independent   Dependent

             Kinship   Body-Parts

(15)   Possessor Relations

      Non-Inherent   Inherent
        (Ø → R)

             Relational   Inalienable
           (Restricted R)   (⊤)

      This new formal mechanism has the dual advantage of generating a typology that captures Nêhiyawêwin and capturing intuitions about the core differences between kinship terms and body parts. Our ontology has become richer, but so has the amount of data we can capture with it.

6. Further Issues: The Grammatical Category of Derived Relational Nouns

It is interesting to note that the grammatical category of the non-possessed forms of relational nouns is unclear, because they exhibit morphological properties of both nouns and verbs.
      Evidence for their verbal status comes both from the derivational morphology and from reduplication. When reduplicated, these derived relational nouns are reduplicated like one kind of reduplication used on verbs (iterative reduplication) (16). The reduplication of these derived relational nouns yields a plural interpretation (17).

(16) ah**ay**atoskêw Misti
      ah-**ay**-atoskê-w   Misti
      RED.intense-**RED**.iterative-work-3 Misti
      'Misti is working **over and over** again.'

(17) a.   …ôsisima
            o-ôsisim-a
            3-grandchild.NDA-OBV
            '…his grandchildren'

      b.   …**oy**ôsisimimâw
            oy-o-ôsisim-im-â-w
            RED-3-grandchild.DNA-POSS-IMP-3
            '…her grandchild**ren**' (Wolfart & Ahenakew 1998)

Nouns, on the other hand, do not receive this kind of reduplication. The only kind of reduplication available to nominals is full copying of affixes to intensify meaning (18).

(18) a.   **msimsi**mstatim
            misi-**misi**-mistatim
            big-big-horse.NA
            'A really big horse'

      b.   ni**wâpiwâpiwâpi**skiminôsim**sisîs**ak
            ni-**wâpi**-**wâpi**-wâpiski-minôs-im-**sis**-**sis**-ak
            1-white-white-white-cat.NA-POSS-DIM-DIM-pl
            'My really, really white, tiny kittens'

Thus it would seem that these relational constructions are verbal.
    However, the affixation of nominal-specific morphology, including the obviative marker -*a* (19a) and the diminutive -*îs* (19b), suggests that these derived relational nouns are indeed nominals.

(19) a.   … mâmaw-ôhtâwîmâw**a** ê-tâhkômât
            mâmaw-o-ohtâwiy-im-â-w-**a** ê-tâhkô-m-â-t
            all-3-father.NDA-POSS-IMP-3-**OBV** CONJ-talk-by.mouth.TA-3>3'-3
            '…and [when he] discusses the All-father.'
            (Wolfart & Ahenakew 1998)

      b.   …ôsîmimâs
            o-ôsîm-im-â-w-îs
            3-younger.sibling.nda-poss-imp-3-dim
            '…the youngest brother' (Ahenakew 1989)

These relational nouns can also be again derived into verbs, like other nouns in the language (20).

(20) a.   nâpêw**iw**
             nâpêw-**i-w**
             man.NA-AI-3
             'He **is** a man.' (Wolvengrey 2002)

      b.   kotak ana nâpêsis, k-ôsimimâw**it**, …

             kotak ana nâpêw-sîs,
             other that.NA man.NA-DIM,

             kâ-o-ôsim-im-â-w-**i-t**
             CHNG-3-ynger.sibling.NDA-POSS-IMP-3-**AI-3**

             'The other boy, **being** the youngest, …' (Ahenakew 1989)

Thus it appears that these constructions are nominal in their properties.

   This grammatical ambiguity is clearly telling us something about the derivational mechanisms of Nêhiyawêwin, but exactly what is currently unclear. Note that a similar ambiguity appears to exist in Iwaidjan languages of Australia (Evans 2004). An analysis of this ambiguity is something that demands further research.

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