Decomposing Blackfoot Proclitics

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1 Introduction

In Blackfoot (Plains Algonquian: Southern Alberta), person proclitics mark the possessor on nouns and the grammatical subject on verbs:

(1) a. nitáákiikoama
    nit-  aakiikoama
    1-girlfriend  'my girlfriend'

b. kitáákiikoama
    kit-  aakiikoama
    2-girlfriend  'your girlfriend'

c. otáákiikoami
    ot-  aakiikoami
    3-girlfriend  'his/her girlfriend'

(2) a. nítsspiyi
    nit- ihpiyi
    1-dance  'I danced.'

b. kítsspiyi
    kit- ihpiyi
    2-dance  'You danced.'

c. . . otsspíyi'si
    ot- ihpiyihsi
    3-dance  '. . . when s/he danced.'

In certain contexts, the proclitics appear in a truncated form:

(3) a. nínsssta
    n- inssta
    1-sister  'my sister'

b. kóssta
    k- inssta
    2-sister  'your sister'

c. ´ onssti
    w- inssti
    3-sister  'his/her sister'

1.1 The Puzzle

(4) 2 series of Blackfoot proclitics 1 (to be revised)

<table>
<thead>
<tr>
<th></th>
<th>first person</th>
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<tr>
<td>long forms</td>
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<td>ot- (/w+it-/)</td>
</tr>
<tr>
<td>short forms</td>
<td>n-</td>
<td>k-</td>
<td>w-</td>
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1.2 The Proposal

The two series of proclitics differ with respect to their internal syntax, their semantics and their external syntax:

(5) Internal Syntax

a. short forms are pro-\(\phi\)Ps

b. long forms are morphosyntactically complex pro-DPs

[cf. Déchaine and Wiltschko 2002]

*Many thanks to Rachel Ermineskin, Beatrice Bullshields, Noreen Breaker, and Louis Soop for sharing their language with us. Nitsikóhatsi’taki. We also thank Lohke Aelbrecht, Sjef Barbiers, Norbert Corver, Rose-Marie Déchaine, Alexis Dimitriadis, Marjo van Koppen, Martina Wiltschko, and audiences at the UBC Wednesday research seminar and the Syntax-UiL-OTS-Interface meeting for feedback on this project. All errors are ours.


3rd person is subject to a phonological rule of Blackfoot: \(w + i(\cdot) \rightarrow o\) (Frantz 2009:72).
(6) **Semantics**
   a. short forms spell out phi-features (i.e. person)
   b. long forms introduce domain restriction along with phi-features

(7) **External Syntax**
   a. short forms are restricted to core argument positions (vP/nP-internal)
   b. long forms occupy core or non-core argument positions (vP/nP-external)

1.3 **Roadmap**

Section 2: Brief **Background** on Blackfoot

Section 3: The **Puzzle**

Section 4: The **Internal Syntax** of Blackfoot Proclitics

Section 5: The **Semantics** of Blackfoot Proclitics

Section 6: The **External Syntax** of Blackfoot Proclitics

Section 7: Overview of the **Syntax and Semantics** of Blackfoot Proclitics

Section 8: **Summary** and **Outlook**

2  **Brief Background on Blackfoot**

i. Plains Algonquian (Algic)

ii. 3 dialects in Alberta (CA): *Siksiká, Kainaa, Aapátohsipikani*, 1 dialect in Montana (US): *Aamskáápípipikani* (our consultants: from Siksiká and Kainaa)

iii. Population: <10,000 (decreasing), few (if any) first language learners, few monolingual speakers (Russell and Genee 2006)

2.1 **General Linguistic Characteristics**

(8) a. polysynthetic language
   b. overt argument expression is not required
   c. if arguments are expressed overtly, word order is relatively free, no case marking
   d. obviation marking on nouns functions as discourse-driven reference-tracking system
   e. argument roles are attributed via direct/inverse marking on the verb

(9) **Proclitic properties:**
   a. person proclitics encode event participation, i.e. individual denoted by the proclitic is one of the arguments of the verb which is not necessarily the subject
   b. one morphological slot for proclitics: *kit/k > nit/n > ot/w*
   c. 3rd person proclitics on verbs appear only under certain conditions: in subordinate clauses, and when the 3rd person actor in transitive matrix clauses is obviative (cf. Frantz 2009).

(10)  a. Nitsikákomimmawa nitáná.
      **nit-ikákomimm-a-wa n-itana.**
      1-love-DIR-PROX  1-daughter
      ‘I love my daughter.’

      b. Nitsikákomimmoka nitáná.
      **nit-ikákomimmok-(w) a n-itana.**
      1-love-INV-PROX  1-daughter
      ‘My daughter loves me.’ [Frantz 1991:55ff; glosses modified by authors]
3 The Puzzle

(4) 2 series of Blackfoot proclitics I (to be revised)

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<td>w-</td>
</tr>
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Historically, short forms were restricted to inalienably possessed nouns (Proulx 1989). Synchronically, short forms have a wider distribution:

(11) a. Nikááihpiyi
     *Nitsikááihpiyi
     1-PERF-dance
     ‘I have danced.’
     intended: ‘I have danced.’

(12) a. Tsá kaanistaopíhpa?
     what 2-MANNER-IMPF-stay-NONAFF
     ‘How are you?’

(13) a. Omohtó’toohsi Mohkínsstsis.
     3-SOURCE-arrive-CONJ Calgary
     ‘. . . when s/he came from Calgary.’

Question: What conditions the alternation between long and short proclitic forms synchronically?

Short forms are typically assumed to be either allophonic or lexically-specified variants of the long forms (Taylor 1969; Frantz 2009), but the distribution is inconsistent with either a phonological or lexical account.

3.1 Discarding Alternative Accounts

3.1.1 The Alternation is Not Lexical

The standard claim for Blackfoot is that the selection of proclitic forms is lexically conditioned (Taylor 1969; Frantz 2009):

**Prediction:** A lexical item (stem or prefix) should consistently select one proclitic form or another, or permit free variation of forms without systematic differences in meaning.

This is not borne out:

(14) a. Amo no’tokáán
     amo n-o’tokaan
     DEM 1-hair
     ‘This is my (own) hair.’

(15) a. Náálksípaisska
     n-aahk-ipaisska
     1-MOD-dance
     ‘I might dance.’
3.1.2 The Alternation is Not Phonological

Other Algonquian languages that distinguish between long and short form proclitics exhibit a phonological alternation: long forms attach to vowel-initial stems and short forms attach elsewhere (cf. Junker 2010 for East Cree; Valentine 2001 for Ojibwe; Wolfart 1973 for Plains Cree.)

Prediction: phonetically identical (or near-identical) stems should invariably select one proclitic form or another.

This is not borne out:

(16) a. Nikáítsiniki
   n-**ika**a-itsiniki
   1-PERF-relate.story
   ‘I have told a story.’

   b. Nitsikáítsiniki
   nit-**ika**a-itsiniki
   1-ancient-IMPF-relate.story
   ‘I am telling an ancient story.’

(17) a. Kikáïpaisskaa
   k-**ika**a-**ipa**sskkaa
   2-PERF-dance
   ‘You have danced (at a dance).’

   b. Kitsikáïpaisskkaa
   kit-**ika**a-**ipa**sskkaa
   2-frequently-dance
   ‘You often danced (at a dance).’

(18) a. Ááchkoyimmiiyiíniksi
   w-**aahk**oyimm-ii-yini-iksi
   3-MOD-mourn-DIR-OBV-PL
   ‘S/he might have mourned them.’

   b. Otááhkóyinnimaanistsi
   ot-aahkoyinnimaan-istsi
   3-pipe-PL
   ‘his pipes’ [Frantz and Russell 1995:1]

3.2 Interim Summary

The alternation between the long and short form proclitics in Blackfoot

i. is not lexical

ii. is not phonological.

Instead:

Claim: The alternation between long and short form proclitics is conditioned by their different syntax and semantics.

4 The Internal Syntax of Blackfoot Proclitics

We argue that the long form proclitics are complex consisting of two meaningful parts:

(19) a. Blackfoot proclitics II

<table>
<thead>
<tr>
<th></th>
<th>first person</th>
<th>second person</th>
<th>third person</th>
</tr>
</thead>
<tbody>
<tr>
<td>long forms</td>
<td>n-<strong>it</strong></td>
<td>k-<strong>it</strong></td>
<td>w-<strong>it</strong></td>
</tr>
<tr>
<td>short forms</td>
<td>n-</td>
<td>k-</td>
<td>w-</td>
</tr>
</tbody>
</table>

b. The short forms solely consist of a person marker (φ-features).

c. The long forms consist of the person marker and the morpheme -**it**.

3Valentine (2001:200) notes that the alternation is not entirely conditioned by phonological factors. As in Proto-Algonquian (and Blackfoot), dependent nouns in Ojibwe invariably select the short forms.
4.1 Background Assumptions: the Syntax of Pronouns

We adopt Déchaine and Wiltschko’s (2002) analysis of nominal proforms:

i. Proforms are internally complex, and can vary in their categorical status.
ii. There are three categories of proforms, each with their own syntactic projection.

\[(20)\]

\[
\begin{array}{lll}
\text{a. DP} & \text{b. } \phi \text{P} & \text{c. NP} \\
D & \phi \text{P} & \\
\phi & \text{NP} & N \\
\phi & \text{N} & \\
\end{array}
\]

These types can be distinguished on basis of their morphosyntactic properties, binding theoretic status and argument status:

\[(21)\]

<table>
<thead>
<tr>
<th>Syntactic criteria for the distinction</th>
<th>pro-(\phi)P</th>
<th>pro-DP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphosyntax</td>
<td>simple(^5)</td>
<td>complex</td>
</tr>
<tr>
<td>Binding properties</td>
<td>variable</td>
<td>R-expression</td>
</tr>
<tr>
<td>Condition B: can be bound</td>
<td>Condition C: cannot be bound</td>
<td></td>
</tr>
<tr>
<td>Argument status</td>
<td>argument</td>
<td>argument</td>
</tr>
</tbody>
</table>

[adapted from Déchaine and Wiltschko 2002:410]

4.2 Long and Short Form Proclitics Differ in their Internal Syntax

We propose that the Blackfoot proclitics map onto these structures as follows:

\[(22)\]

\[
\begin{array}{ll}
\text{a. } \phi \text{P} & \text{b. DP} \\
\phi & \text{NP} & D \\
n-/k-/w- & \cdot & -it- \\
\end{array}
\]

\[(23)\]

a. In both the long and short forms, the person marker \(n-/k-/w-\) is merged as a \(\phi\)-head.
b. In the long forms, \(it\)- is merged as D head. \(n-/k-/w-\) is linearized to precede \(it\).\(^6\)

4.3 Evidence for Internal Syntax of Proclitics

\[(24)\]

Our proposal correctly predicts that proclitics differ with respect to their

i. morphosyntactic properties
ii. binding theoretic status
iii. argument status

\(^3\)From now on, we will abstract away from the third type, pro-NP, as it is not relevant to our discussion.
\(^5\)We acknowledge that pro-\(\phi\)Ps could be complex, consisting of isolable \(\phi\) and N morphemes, but crucially, they won’t have an isolable D morpheme.
\(^6\)It is still unclear what mechanism accounts for the linearization of long forms. A possible solution is local dislocation at PF in the sense of Embick and Noyer (2001).
4.3.1 Morphosyntactic Properties

**Prediction:** if the long forms proclitics are compositional, we should find independent evidence of both morphemes in the grammar.

This prediction is borne out:

(25) long form proclitics: n-/k-/w- + it-

(26) a. n-/k-/w- = short form proclitics
    b. it- = locational prefix

In the verbal domain: it- is required to license DPs that express spatial and/or temporal location of the event denoted by the predicate:

(27) a. Ááksitsipsstsooyiwa omi ksikóokooyiss.
    aak-it-ipst-ooji-wa om-yi ksikookooyiss.
    fut-loc-inside-eat-prox dem tent
    ‘S/he will eat in that tent.’
    b. *Ááksipsstsooyiwa omi ksikóokooyiss.

(28) a. Matónni nitsítsinoowaw kiksíssta.
    matonni nit-it-inoo-a-wa k-iksist-wa
    yesterday 1-LOC-see-DIR-PROX 2-mother-PROX
    ‘Yesterday I saw your mother.’
    b. *Matónni nitsinoowaw kiksissta.

In the absence of an overt antecedent, it- is translated as “then/there” and refers to a contextually determined discourse time/place:

(29) Na Leo itsápiipommaawa pisátssaisiki.
    na Leo it-sapiipommaa-wa pisatssaisiki
    dem Leo LOC-plant-PROX flower
    ‘Leo planted flowers over there.’

Proclitic it- is derived from the verbal prefix it-.

**Conclusion:** Both morphological components of the proclitics can be found independently in the grammar of Blackfoot.

4.3.2 Binding Theoretic Status

**Prediction:** if the long and short form proclitics differ syntactically, we should observe differences in their binding theoretic properties. Specifically, consistent with Déchaine and Wiltschko’s (2002) model, we predict that pro-φPs can function as bound variables, but pro-DPs cannot.7

This prediction is borne out:

(30) a. bound readings are possible with short form proclitic possessors
    b. bound readings are impossible with long form proclitic possessor

---

7E-type readings of full DPs (i.e. donkey anaphora) may appear to pose a challenge to the claim that DPs cannot function as bound variables. However, if, following Evans (1980), we treat E-type pronouns as hidden definite descriptions that by definition are not bound variables, then E-type readings of full DPs are similarly not bound. See Wiltschko (1998) for evidence from German that E-type readings are not bound variables.
(31) Nitsikáákomimma niksíssta ki ana Apánii ni’tóyi.

\textit{nit-ikaakomimm-a n-iksísst-wa ki ana Apanii ni’toy i}

1-love-DIR 1-mother-PROX CONJ DEM butterfly be.same

‘I love my mother and Apanii does too.’

✓ STRICT → Apanii loves my mother.
✓ SLOPPY → Apanii loves her own mother.

(32) Nitsikááhsi’tsi’p nitsipisátssa kitaani ki ana Apánii ni’tóyi.

\textit{nit-ikkahsi’tsi-p nit-ipisatsskitaan-yi ki ana Apanii ni’tóyi}

1-find.pleasing-DIR 1-cake-INAN CONJ DEM butterfly be.same

‘I like my cake and Apanii does too.’

✓ STRICT → Apanii likes my cake.
* SLOPPY → cannot mean: Apanii likes her own cake.

4.4 Interim Summary

(33) Internal Syntax of of Blackfoot proclitics

<table>
<thead>
<tr>
<th>short forms (n-/k-/w)</th>
<th>long forms (nit-/kit-/ot)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntactic category</td>
<td>pro-(\phi)P</td>
</tr>
<tr>
<td>Morphological complexity</td>
<td>(\times)</td>
</tr>
<tr>
<td>Bound variable</td>
<td>(\checkmark)</td>
</tr>
</tbody>
</table>

5 The Semantics of the Blackfoot Proclitics

\textbf{Question:} If the long form proclitics are morphologically complex consisting of two meaningful parts, what is the contribution of each part?

(34)  

a. \(n-/k-/w\) is located in pro-\(\phi\)P and denote 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} respectively

b. \textit{it-} is located in D: contributes D-semantics

\textbf{Prediction:} If the long form proclitics are pro-DPs, we predict them

i. to have the semantic properties of DPs

ii. to appear in (morpho-)syntactic contexts that are compatible with DP semantics

Both predictions are borne out. The long form proclitics

(35)  

a. encode the core semantic property of D, namely \textbf{domain restriction}

b. are ungrammatical in contexts that do not permit domain restriction

5.1 Background Assumptions: D Introduces Domain Restriction

Following Gillon (2006, 2009), we assume that D universally provides \textbf{domain restriction}:

\textit{D-determiners always introduce domain restriction over their NP, regardless of what other properties they may have. Their function is to constrain the set introduced by the NP to a set of contextually salient individuals.} (Gillon 2006:53)

DPs do not (typically) refer to all the individuals in the world that match the NP description, but rather a contextually salient subset:
(36) a. The dogs were barking.
   b. Typically does not refer to all dogs in the world, but to a contextually salient set.

(37) a. Determiners restrict the domain of individuals ($D_e$) to a contextually salient set ($C$).
   b. $C$ is determined by the discourse context and/or by immediate linguistic context.
   c. Domain restriction can interact with other semantic features (e.g. assertion of uniqueness, familiarity) to derive properties such as definiteness.

5.1.1 The Semantics of the Determiner $it$-

(38)\[ DP \quad \phi P \]
\[ -it- \quad \phi \quad NP \quad n-/k-/w- \]
\[ \ldots \]

**Prediction:** $it$- has the semantic properties of a determiner, i.e. it restricts the domain of the $\phi P$ it quantifies over:

(39) $it$- restricts $D_e$ to $C$
\[ D_e = \text{the person(s) denoted in } \phi P \text{ (first, second, or third)} \]

**However:** personal pronouns (especially first and second person) already refer to contextually salient individuals.

**Question:** How does $it$- introduce domain restriction to an already restricted domain?

Musan (1995, 1999): $D_e$ contains both individuals and stages of individuals:

\[ \text{Determiner quantification is not quantification over individuals in their whole temporal extendedness but quantification over STAGES OF INDIVIDUALS.} \] (Musan 1995:94)

**Stage** = temporal slice of an individual, an individual at a given time (to be distinguished from an individual in its maximal temporal extendedness) (Musan 1995; cf. also Carlson 1980)

**Claim:** $it$- restricts the domain to the contextually relevant stage(s) of the individual(s).

(40) **Consequences:**
   a. Short form proclitics ($\phi P$s) are temporally unrestricted.
   b. Long form proclitics (DPs) are temporally restricted; they refer to a stage of a person, i.e. a person at a contextually salient point in time.

5.2 Evidence for Domain Restriction

**Prediction:** long forms are ungrammatical in contexts of temporally unbounded predicate-argument relations.

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*As for the question whether domain restriction as restriction to stages is a semantic primitive, or is derived by a combination of domain restriction and deictic features related to temporality see Gruber (in preparation).*
This prediction is borne out:

(41) **Possessives**: inalienable possession obligatorily takes the short form proclitic

(42) **Perfect**: perfect predicates obligatorily take the short form proclitic

5.2.1 **Possessives**

Person proclitics on nouns encode possession:

i. **short form** proclitics appear on inalienable nouns

ii. **long form** proclitics appear on alienable nouns

(43) **Inalienability**:

a. non-transitory relation between two entities (e.g. body parts, kinship terms)

b. holds at all times irrespective of a specific event context


(44) Blackfoot inalienable nouns

a. obligatorily take a possessor argument

b. take the short form proclitic

(45) a. niksíssta

b. kiksíssta

c. oksíssti

n-iksíssta

k-iksíssta

w-iksíssta

1-mother

2-mother

3-mother

‘my mother’

‘your mother’

‘her/his mother’

(46) a. * ikísstí

b. * nitsikísstí

ikísstí

nit-ikísstí

mother

1-mother

intended: ‘a mother’

intended: ‘my mother’

**Question**: What happens if an inalienable relation is coerced into an alienable relation?

(47) a. Amo no’tokáán

b. Amo nito’tokáán

amo n-o’tokaan

amo nit-o’tokaan

DEM 1-hair

DEM 1-hair

‘This is my (own) hair.’

‘This is my (clipping of) hair (of his).’

(48) **Alienability**:

a. transitory relation between two entities

b. dependent on a specific context

c. inherently a one place predicate

(49) a. nitááattsistaama

b. kitááattsistaama

c. otááattsistaami

nit-aat-tstaama

kit-aat-tstaama

ot-aat-tstaami

1-rabbit

2-rabbit

3-rabbit

‘my rabbit’

‘your rabbit’

‘his/her rabbit’

(50) a. ááattsistaawa

b. * kááattsistaama

aaattstaaawa

k-aat-tstaama

rabbit

2-rabbit

‘a rabbit’

intended: ‘your rabbit’

**Claim**: -it- picks out the relevant stage of the individual denoted by the proclitic at which the possessor relationship holds.
5.2.2 The Perfect

(51) Perfect is expressed
   a. by means of the verbal prefix *ikaa*.
   b. which obligatorily selects the short form proclitics

(52) a. nikááyo’kää
   *n-ikaa-yo’kää
   1-PERF-sleep
   ‘I have slept.’

b. * nitsikááyo’kää
   *nit-ikaa-yo’kää
   1-PERF-sleep
   intended: ‘I have slept.’

(53) a. kikááyo’kää
   *k-ikaa-yo’kää
   2-PERF-sleep
   ‘You have slept.’

b. * kitsikááyo’kää
   *kit-ikaa-yo’kää
   2-PERF-sleep
   intended: ‘You have slept.’

**Question:** How is the relation of the subject to a perfect predicate temporally unbounded?

We adopt an Extended Now (XN) theory of the perfect (McCoard 1978), in which the eventuality denoted by the predicate has current relevance to the subject:

(54) a. The perfect asserts the existence of a time interval (the perfect time span) in which an
eventuality occurs. (cf. von Stechow 1999; Iatridou et al. 2002)

b. The left and right boundaries (LB and RB) of the perfect time span are determined by
elements in the linguistic and/or discourse context.

(55) **Perfect time span**

   ![Perfect time span diagram](adapted from Iatridou et al. 2002)

(56) Nikáísamahi-pi
   *n-ikaa-isam-a-ihpiyi
   1-PERF-long.time-IMPF-dance
   ‘I have danced for a long time.’

(57) (At least) two potential readings:

a. **LB = perfect level adverb:** There is a time interval (the perfect time span) whose LB
   is a long time ago and whose RB is R (now) and throughout that time interval, I danced
   (continuously).

b. **LB = existence of subject:** There is a time interval (the perfect time span) whose LB
   is when I was born, and whose RB is R (now) and in that time interval, there is at least
   one eventuality of me having danced for a long time.

**Claim:** The boundaries of the perfect time span demarcate the eventuality denoted by the predicate, yielding an interpretation of the predicate as a property.

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9Frantz (2009) identifies this morpheme as a perfective marker. However, we analyse it as a perfect rather than a
perfective: (i) It can co-occur with an imperfective marker. (ii) It expresses the meaning of the English adverb already.
(iii) Like the English perfect, it cannot occur with the adverbial yesterday.
(58) This property denoted by the perfect predicate is
   a. relevant to the individual’s experience over their lifetime or over an extended period
   b. permanently attributed to the individual
   c. in a temporally unbounded relation with the individual

The relation of the subject to the perfect predicate mirrors that of the possessor to the inalienably possessed noun.

5.2.3 Summary

Inalienable possession and perfect predicate-argument relations require a pro-φP argument as they do not contain domain restriction.

6 The External Syntax

(59) a. The internal syntax of the proclitics restricts their external syntax.
   b. pro-DPs and pro-φPs can be distinguished on the basis of their argument status.
      (cf. Déchaine and Wiltschko 2002)

6.1 Background Assumptions

(60) a. Lexical roots encode information about their argument structure.\textsuperscript{10}
    b. External arguments are licensed by light heads \( v \) and \( n \). (Kratzer 1996; Chomsky 1995)

(61) Core Arguments:
   a. Nominal expressions that are merged in the vP/nP or VP/NP.
   b. They may move to a functional layer outside the xP domain (e.g. for case-checking).

(62) \[
\begin{array}{c}
  \text{FP} \\
  \text{YP} \quad F \\
  \quad xP \\
  \quad \text{FP} \\
  \quad \langle \text{YP} \rangle \quad x \\
  \quad \quad \text{xP} \\
  \quad \quad \quad \text{XP} \\
  \quad \quad \quad \quad \ldots
\end{array}
\]

\textsuperscript{10}With respect to Blackfoot our assumption that argument structure is lexically encoded is in line with recent proposals by Ritter and Rosen (2010a); Armoskaite (2011). Beyond that, we abstract away from specific models concerning the precise nature of how this information is lexically encoded.
(63) **Non-core arguments:**
Nominal expressions that are *not* merged xP-internally.

(64) \[
\begin{align*}
\text{FP} \\
\text{YP} \\
\text{F} \\
\text{xP} \\
x \\
x \times \text{XP} \\
\ldots
\end{align*}
\]

**Claim:**

i. **short form** proclitics (pro-ϕPs) are restricted to **core argument** positions

ii. **long form** proclitics (pro-DPs) may be merged as **core or non-core** arguments, but must be case-licensed in a functional projection\(^{11}\)

**Prediction:** The external syntax of short and long form proclitics should conform to the following structural configurations:

(65) a. \[
\begin{align*}
\text{FP} \\
\text{F} \\
\text{xP} \\
\text{pro-ϕP} \\
x \times \text{XP} \\
\ldots
\end{align*}
\]

b. \[
\begin{align*}
\text{FP} \\
\text{pro-DP} \\
\text{F} \\
\text{xP} \\
x \times \text{XP} \\
\ldots
\end{align*}
\]

c. \[
\begin{align*}
\text{FP} \\
\text{pro-DP} \\
\text{F} \\
\text{xP} \\
x \times \text{XP} \\
\ldots
\end{align*}
\]

This prediction is borne out in the nominal and the verbal domain.

### 6.2 External Syntax in the Nominal Domain

#### 6.2.1 Inalienable Nouns

In Blackfoot, inalienable nouns obligatorily require a proclitic possessor:

(66) a. niksíssta 
   \[n\text{-iksíssta} \quad 1\text{-mother} \quad \text{‘my mother’}\]

b. kiksíssta 
   \[k\text{-iksíssta} \quad 2\text{-mother} \quad \text{‘your mother’}\]

c. oksíssti 
   \[w\text{-iksíssti} \quad 3\text{-mother} \quad \text{‘her/his mother’}\]

d. * iksíssti 
   \[\text{iksíssti} \quad \text{‘a mother’}\]

\(^{11}\)Although our proposal is framed differently, if we assume that case-licensing defines syntactic arguments, then our claim is consistent with the widely held view that DPs must occupy argument positions (e.g. Longobardi 1994). Further, it is consistent with Déchaine and Witschko’s (2002) proposal that, although pro-ϕPs can be arguments or predicates, in pronominal systems in which there are both pro-DPs and pro-ϕPs (such as Halkomelem, and arguably Blackfoot), pro-DPs block pro-ϕPs from occupying argument positions.

\(^{12}\)To express English sentences such as “I am a mother.”, consultants consistently provide translations along the lines of the verbalized noun Nitsík’si “I have children.”
Claim: pro-φP is merged as an NP-internal core argument.

6.2.2 Alienable Nouns

Unlike inalienable nouns, alienable nouns do not require a possessor.

(68) a. nit’aattsistaama _nit-aaattsistaam-wa_ 1-rabbit-POS-prox 'my rabbit'
b. kit’aattsistaama _kit-aaattsistaam-wa_ 2-rabbit-POS-prox 'your rabbit'
c. ot’aattsistaami _ot-aaattsistaam-yi_ 3-rabbit-POS-obv 'his/her rabbit'
d. aaattsistaawa _aaattsistaaw-a_ rabbit-prox 'a rabbit'

(69) a. The alienable possessor is merged in a higher functional possessor projection. (cf. Alexiadou 2003)
b. This functional head is overtly expressed by the suffix -im. (cf. Ritter and Rosen 2010b)

Claim: pro-DP is merged as an NP-external non-core argument.

6.2.3 Two Positions: Evidence from Possessor Stacking

Prediction: Both possessor positions can be filled simultaneously, with an NP-internal pro-φP and an NP-external pro-DP.

This prediction is borne out:

(71) a. nitsikóóksissta _nit-iko-w-iksist-wa_ 1-old-3-mother-prox 'my former mother'
b. * nitsikóóksissta _nit-iko-iksist-wa_ 1-old-mother-prox

c. * nikóó(tsi)ksissta _n-iko-w(ıt)-iksist-wa_ 1-old-3-mother-prox

There is a null counterpart to the possessive suffix -im. The distribution of the overt and covert possessive marker is yet unclear.
6.3 External Syntax in the Verbal Domain

Recall our predicted structures:

(65) a. FP
   \[
   \begin{array}{c}
   & F \\
   & \text{pro-} \phi P \text{ x } P \\
   x & \text{XP} \\
   x & \ldots
   \end{array}
   \]
   
   b. FP
   \[
   \begin{array}{c}
   & F \\
   & \text{pro-DP} \text{ x } P \\
   x & \text{XP} \\
   x & \ldots
   \end{array}
   \]
   
   c. FP
   \[
   \begin{array}{c}
   & F \\
   & \text{pro-DP} \text{ x } P \\
   x & \text{XP} \\
   x & \ldots
   \end{array}
   \]

(72) a. (65a) is exemplified by inalienable nouns
   b. (65c) is exemplified by alienable nouns

We argue that (65b) is instantiated in simple predicates\(^{14}\) in the verbal domain:

(73) a. Unergative verbs require an external argument and unaccusative verbs require an internal argument.
   b. In both cases, pro-DP occupies a core position and moves to Spec-IP\(^{15}\) for case.
      (cf. D´echaine and Wiltschko 2011)

(74) a. Níttspiyi (*nihpiyi)
   \[
   \begin{array}{c}
   \text{nit-ihpiyi} \\
   1\text{-dance}
   \end{array}
   \]
   ‘I danced.’

b. IP
   \[
   \begin{array}{c}
   & \text{pro-DP} \\
   & I \\
   & \text{vP} \\
   & v \\
   & \text{vP} \\
   & \text{VP} \\
   & \text{‘dance’}
   \end{array}
   \]

(75) a. Nitsinnisi (*ninnisi)
   \[
   \begin{array}{c}
   \text{nit-innisi} \\
   1\text{-fall}
   \end{array}
   \]
   ‘I fell.’

b. IP
   \[
   \begin{array}{c}
   & \text{pro-DP} \\
   & I \\
   & \text{VP} \\
   & \text{v} \\
   & \text{‘fall’}
   \end{array}
   \]

**Claim:** pro-DP is merged as a core argument and moves to IP to check case.

\(^{14}\)For ease of exposition we are concentrating here on intransitive verbs. The same, however, applies to transitive predicates. See Bliss (2005) for a feature-based account of argument licensing with transitive verbs.

\(^{15}\)For purposes of clarity, we have omitted Asp-heads from the clausal spine. However, see Bliss et al. (2010) for discussion of Inner and Outer Aspect in Blackfoot clause structure.
6.4 Summary

Claim:

i. **Short form** proclitics (pro-φPs) are restricted to **core argument** positions.

ii. **Long form** proclitics (pro-DPs) may be merged as **core or non-core** arguments.

(76) **The distribution of Blackfoot proclitics**

<table>
<thead>
<tr>
<th></th>
<th>core arguments</th>
<th>non-core arguments</th>
</tr>
</thead>
<tbody>
<tr>
<td>pro-φP</td>
<td>inalienable possessor</td>
<td>–</td>
</tr>
<tr>
<td>pro-DP</td>
<td>lexical argument of verb</td>
<td>alienable possessor</td>
</tr>
</tbody>
</table>

7 Overview of the Syntax and Semantics of Blackfoot Proclitics

Summary

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<tr>
<th></th>
<th>short form proclitics</th>
<th>long form proclitics</th>
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</thead>
<tbody>
<tr>
<td><strong>internal syntax</strong></td>
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<td></td>
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<tr>
<td>category</td>
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<td>pro-DP</td>
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<td>complex</td>
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<tr>
<td>binding properties</td>
<td>bound variable</td>
<td>R-expression</td>
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<td><strong>semantics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>content</td>
<td>person features</td>
<td>+ domain restriction</td>
</tr>
<tr>
<td>relation to predicate</td>
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<td>temporally bounded</td>
</tr>
<tr>
<td>nominals</td>
<td>inalienable possession</td>
<td>alienable possession</td>
</tr>
<tr>
<td>verbs</td>
<td>perfect</td>
<td></td>
</tr>
<tr>
<td><strong>external syntax</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>argument status</td>
<td>core argument</td>
<td>core or non-core</td>
</tr>
<tr>
<td>nominals</td>
<td>merged NP-internally</td>
<td>merged NP-externally</td>
</tr>
<tr>
<td>selected by</td>
<td>nominal head</td>
<td>possessor head</td>
</tr>
<tr>
<td>verbs</td>
<td>PREDICTION B</td>
<td>merged vP-in- or externally</td>
</tr>
</tbody>
</table>

(77) **Prediction A:** In the verbal domain, long form proclitics combine with temporally bounded predicates.

(78) **Prediction B:** In the verbal domain, short form proclitics are merged vP-internally.

Here, we draw attention to some additional data that provides preliminary support for these predictions, as well as speaks to the wider distribution of the proclitic forms.

7.1 Long Form Proclitics in the Verbal Domain: Semantics

(77) **Prediction A:** In the verbal domain, long form proclitics combine with temporally bounded predicates.

Short forms, on the other hand, may never combine with bounded predicates.

An asymmetry observed in the context of modality lends preliminary support to this prediction:
The modal prefix *aahk-* selects\(^{16}\)

- a short form proclitic when it is interpreted as epistemic modal (80a)
- a long form proclitic when it is interpreted as a marker of counterfactuality (80b)

(80)

a. Náá̱hksikkamihpiyi  
   *n-aahk-ikkam-ihipiyi*  
   'I might dance.'

b. Nitáá̱hksikkamihpiyihtopi  
   *nit-aahk-ikkam-ihipiyi-htopi*  
   'I would dance (. . . if I hadn’t hurt myself.)'

**Preliminary claim:** Counterfactual predicates are temporally bounded by a (covert or overt) conditional antecedent. Hence they require the long form proclitic.

Support: Izvorski (1997) draws parallels between the semantics of

- past tense and counterfactuality
- present perfect and epistemic modality

These parallels are reflected in Blackfoot in the selection of proclitics:

- past tense and counterfactuality select the long form proclitic
- (present) perfect and epistemic modality select the short form proclitic

For Izvorski (1997), the present perfect and epistemic modality encode a notion of consequence or current relevance, which we argued to result in temporal unboundedness.

### 7.2 Short Form Proclitics in the Verbal Domain: The External Syntax

**Prediction B:** In the verbal domain, short form proclitics are merged *vP*-internally and do not move to IP to check case.

#### 7.2.1 *vP*-internal Merge

Additional arguments in Blackfoot may be introduced via

- applicative suffixes\(^{17}\)
- prepositional prefixes\(^{18}\)

With respect to their selection of proclitics

- applicative suffixes select the long form proclitics (85)
- prepositional prefixes select the short form proclitics\(^{19}\) (86)

\(^{16}\)Frantz (2009:109, fn. 3) describes the distribution of the long and short forms with modal *aahk-* as conditioned by variation between speakers. Our consultants consistently allow both the long and short forms, but only permit the long forms in the context of counterfactuals.

\(^{17}\)In Algonquianist terms these are referred to as *concrete finals*. (Bloomfield 1946; Frantz 2009)

\(^{18}\)In Algonquianist terms these are referred to as *relative roots or linkers*. (Frantz 2009)

\(^{19}\)The facts are somewhat more complex than presented here. There are (at least) three types of prepositional prefixes: (i) prefixes that do not co-occur with applicative suffixes, (ii) prefixes that do co-occur with them, and (iii) locative prefixes. Only (i) occurs with the short form proclitics, and is discussed here (cf. Bliss (2007); Louie (2009); Meadows (2010) for additional discussion and analyses of the different prepositional prefixes in Blackfoot.)
(85) a. Ṉítsspiyimoawa nítána
   ṉit-ihipiyi-omo-a-wa ṉitana
   1-dance-APPL-DIR-PROX 1-daughter
   “I danced for my daughter.”

b. * Ṉihpiyimoawa nítána
   ṉi-ihipiyi-omo-a-wa ṉiitan-wa

(86) a. Ṉómohtááhkiaaki oma atonáóksisa
   ṉom-omoth-waahkaniaaki oma atonaoksisa
   1-PREP-sew DEM needle
   ‘I sewed with the needle.’

b. * Nitomohtaahkaniaaki...
   ṉi-omoth-waahkaniaaki...

(87) a. applicative suffixes can introduce the referent denoted by the proclitic (88a)
b. prepositional prefixes cannot introduce the referent denoted by the proclitic (88b)

(88) a. Ṉítsspiiyomooka
   ṉit-ihipiyi-omo-ok-wa
   1-dance-APPL-INV-PROX
   ‘S/he danced for me.’

b. Ṉómohtsitsinikooka kiistóyí
   ṉom-omoth-itsiniko-ok-wa kiistoyí
   1-PREP-relate-INV-PROX 2SG
   “He told me about you.” [Frantz 2009:93]
   * “He told you about me.”

(89) **Proclitics and additional arguments**

<table>
<thead>
<tr>
<th></th>
<th>short form proclitics</th>
<th>long form proclitics</th>
</tr>
</thead>
<tbody>
<tr>
<td>applicative suffix</td>
<td>selects</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>can reference</td>
<td>–</td>
</tr>
<tr>
<td>prepositional prefix</td>
<td>selects</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>can reference</td>
<td>X</td>
</tr>
</tbody>
</table>

(90) **Consequences:**

a. If the prepositional prefixes cannot select a proclitic argument
b. the proclitic must refer to a core-argument.

c. Conclusion: it must be selected by the lexical head.

**Preliminary claim:** Short form proclitics are merged vP-internally.

It remains an open question why the proclitic must be the short form then.

**7.3 The Distribution of Long and Short Form Proclitics**

In both their semantics and their external syntax, we observe that short forms are restricted:

(91) a. **semantics:** short forms restricted to unbounded relations

b. **external syntax:** short forms restricted to core arguments

This is consistent with the wider distribution of short and long forms; short forms are used in a narrower range of morphosyntactic environments than the long forms:
Distribution of long and short form proclitics

<table>
<thead>
<tr>
<th></th>
<th>Short Form n-, k-, w-</th>
<th>Long Form nit-, kit-, ot-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nouns</td>
<td>inalienable possession</td>
<td>elsewhere (alienable possession)</td>
</tr>
<tr>
<td>Verbs: tense &amp; aspect</td>
<td>perfect</td>
<td>elsewhere (past, future, imperfective)</td>
</tr>
<tr>
<td>Verbs: modality</td>
<td>epistemic modal</td>
<td>elsewhere (counterfactual, deontic)</td>
</tr>
<tr>
<td>Verbs: argument structure</td>
<td>prepositional prefixes</td>
<td>elsewhere (applicatives, causatives)</td>
</tr>
</tbody>
</table>

8 Summary and Outlook

8.1 Main Claims

Claim I: The internal syntax of the Blackfoot proclitics and the semantics associated with them determine their distribution in the external syntax.

The Proposal in a Nutshell

<table>
<thead>
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<td>+ domain restriction</td>
</tr>
<tr>
<td>external syntax</td>
<td>core argument</td>
<td>core or non-core</td>
</tr>
</tbody>
</table>

Claim II: There is a direct mapping from the syntactic structure to the semantics.

Syntax-Semantics mapping

<table>
<thead>
<tr>
<th></th>
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<th>long form proclitics</th>
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<tbody>
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<td>perfect</td>
<td>–</td>
</tr>
<tr>
<td>predicates</td>
<td>epistemic modality</td>
<td>–</td>
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<tr>
<td>temporally bounded</td>
<td>–</td>
<td>alienable possession</td>
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<tr>
<td>predicates</td>
<td>–</td>
<td>applicatives</td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>counterfactuals</td>
</tr>
</tbody>
</table>

8.2 Outlook

Further directions:

Regarding Blackfoot:
Explore the parallel of the prefix it- that licenses spatiotemporal arguments and proclitic -it-:

i. both provide (spatiotemporal) restriction and are required for licensing certain nominal expressions

ii. The pervasiveness of it- in Blackfoot morphosyntax raises questions about:

i. the role of spatiotemporal restriction in nominal licensing

ii. the relation between spatiotemporality and person in a purportedly tenseless language (cf. Ritter and Wiltschko 2009)
Regarding cross-linguistic variation:

Embed this research in the analysis of the structure of indexicals put forward in Gruber (to appear):

i. The category person is analysed as being complex and
ii. as consisting of layers linked to spatial and temporal deixes.
iii. The analysis of Blackfoot proclitic it- as a domain restrictor linked to temporality lends support to this analysis.

References


