Refining the syntax of non-core arguments: 
P, applicative, and functional p∗

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1. Introduction

In theories of verbal argument structure, two major options have been proposed to account for the introduction of non-core arguments: an applicative head (Appl), or P via Preposition Incorporation (PI). Left unclear is how one can determine whether a given morpheme which introduces a non-core argument is a realization of Appl, P or some other head. This paper addresses this issue by examining non-core arguments in Blackfoot, an Algonquian language. Building on the above recent approaches to non-core arguments, I argue that some non-core arguments in Blackfoot are introduced by a functional head.

2. Introducing non-core arguments

There are two main ways to introduce non-core arguments. One is by Prepositional Incorporation (PI) (Baker 1988, 1996), and the other is with an applicative head (Appl) (Marantz 1993, Pylkkänen 2008). In the following section, I discuss the main points of each approach, and briefly point out why non-core arguments in Blackfoot may not be accounted for by either approach.

2.1 Preposition incorporation

In Preposition Incorporation (PI), a free-standing P incorporates into the verbal complex (Baker 1988, 1996, Zeller 2006), and non-core arguments are introduced by this P. Consider the pair in (1) from Kinyarwanda (Bantu) used as evidence for a PI type

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analysis in Zeller (2006). In (1a), the non-core argument ‘hole’ is introduced by a free standing P *mu* ‘in’; in (1b) the same non-core argument is introduced by an applicative suffix *-mó* on the verb.

(1) a. Umwáana y-a-ménn-ye amáazi *mu* mwoobo.
child SP-PAST-pour-ASP water in hole
‘The child poured water into a hole.’

b. Umwáana y-a-ménn-ye-*mó* umwoobo amáazi.
child SP-PAST-pour-ASP-APPL hole water
‘The child poured water into a hole.’ (Ngoboka 2005)

That is, the complement of P in (1a), *mwoobo* ‘hole’ corresponds to the applied argument ‘hole’ in (1b). Building on Baker (1988, 1996), Zeller argued that the P in (1a) undergoes incorporation into the verb as shown in (2). Further argumentation for this will be discussed in section 5. In essence, the applied argument of (1b) and the prepositional argument of (1a) are introduced by the same head, P.

(2) 

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\text{Evidence for analyzing the applicative suffix *-mó* in (1b) as a P, as in (2), is its phonological similarity to the independent P *mu* in (1a). Similar facts are also taken as evidence for treating an applicative morpheme as a prepositional element (den Dikken 1995, Yabe 2007), and are pointed out in Baker (2003).}
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2.2 Applicative head

For sentences where an applicative suffix introduces a non-core argument (such as (1b) in the previous section), some studies suggest that a functional head, Appl, introduces the non-core argument (e.g. Marantz 1993; Baker 1996; Pylkkänen 2008). For example, (1a) is structurally represented as ApplP (3). In (3), Appl merges above VP, and introduces an applied argument in its specifier. According to Pylkkänen, Appl is similar to Voice in that it introduces an argument external to VP, as shown in (3).

(3) 

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\text{A question is raised when two different syntactic approaches, PI (2) or Appl (3), are used to represent similar roles of non-core arguments: how do P and Appl differ? This has not been seriously addressed in the literature, with one exception being Zeller (2006), discussed in section 5. This question is non-trivial, as the two approaches make different predictions regarding arguments with similar thematic roles, as will be clear as the paper proceeds (see section 4 and 5).}
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2.3 Non-core arguments in Blackfoot

Like Bantu, Blackfoot also has non-core arguments. In this language, a set of prefixes called linkers can introduce a non-core argument as in (4) (Frantz 2009). The linker *iiht* on the verb introduces instrument argument ‘stick’, and modifies the event ‘his being hit’.

\[(4)\] *iihtawayakaawax miistsii*

\[\text{iiht-wawaayakki-aa-wa miistsisi}\]

\[\text{INSTR-hit.TA-DIR-3S stick}\]

‘He was hit by a stick.’ (Frantz 2009)

Interestingly, Blackfoot has another non-core-argument-introducing morpheme different from linkers, shown in (5) (Frantz 2009).

\[(5)\] *ana John nitsskiitomok napayin*

\[\text{ana John nit-ihkiit-omo-ok-a napayin}\]

\[\text{DEM John 1-bake-APPL.TA-INV-3S bread.INA}\]

‘John bakes bread for me.’

In (5), the suffix *-omo* introduces a beneficiary argument into the event of ‘baking bread’. This suffix has been proposed to be similar to applicative suffixes cross-linguistically and instantiate Appl in the sense of Pylkkänen (2008) (Bliss 2010). As a first indicator that a linker may not be represented as Appl, note that a linker is a *prefix*, in contrast to the applicative morpheme, a *suffix*, and that they are different phonologically. Taking these differences as a starting point, I demonstrate in sections 4 and 5 that linkers are syntactically distinct from both the applicative suffix and P in the language, and argue that they cannot be represented by either an incorporated P or Appl.

3. Linkers and non-linkers in Blackfoot

This paper discusses three types of linkers in Blackfoot: 1) instrument (*iiht/-oht*), 2) associative (*iihp/-ohp*), and 3) direction (*itap*) (Frantz 2009). For the first two linkers, their morphology differs based on whether they appear in word initial position or not. When they appear word-initially, the first variants appear; otherwise, the second variants appear.\(^1\) Examples of associative and direction linkers are illustrated in (6). As for the instrument linker, see (4).

\[(6)\] *nitohpaatato ’toa akiikoan ana John*

\[\text{nit-ohp-waatato’to-a-wa akiikoan ana John}\]

\[\text{1-ASSOC-hug.TA-DIR-3S girl DEM John}\]

‘I hugged John **with a girl.**’ (i.e., both John and a girl)

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\(^1\) Frantz (2009) noted third variants, *omohp* for an associative linker and *omoht* for an instrument linker, but my consultants do not have these variants.
The associative linker ohp- illustrated in (6a) introduces an associate of the theme: in this example, ‘the girl’ introduced by the linker is an associate of the theme ‘John’ of the verb ‘hug’. The direction linker itap- in (6b) indicates the direction of the motion: in (6b), the running event is directed towards the goal ‘the house’ (Kim 2014b).

I assume that linkers (as well as non-linkers, see (20) in section 5.2) belong to prepositions. Rhodes (2006) has shown that linker-type morphemes (i.e. relative roots) found in Algonquian languages were historically prepositions. In Kim (2014b), I have shown that linkers and non-linkers in fact satisfy the criteria of prepositions as suggested in Svenonius (2007).

4. **Linkers are not Appls**

Applied arguments under the applicative head approach behave like objects of verbs, as is well-known in the literature (Baker 1988, 1996, Marantz 1984, 1993). They can undergo passivization and show object agreement with the verb. In this sense, an applied argument of Appl behaves as if it is an object (i.e., a core-argument) of the verb. In the Chichewa sentences in (7), for example, the applied argument, mwana ‘child’ agrees with the verb, as the prefix -mu indicates in (7), while theme object mtsuko ‘waterpot’ cannot.

(7) amayi a-ku-mu₁-umb-ir-a mtsuko mwana₁
woman SP-PRS-OP-mold-APPL-ASP waterpot child
‘The woman is molding the waterpot for the child.’ (Baker 1988)

Likewise, an applied argument in Blackfoot that is introduced by the applicative suffix -omo exhibits a range of properties that only core arguments show. On the other hand, the non-core arguments introduced by linkers show distinctly contrasting properties, which constitutes strong evidence that linkers cannot be represented as Appl.

4.1 **Animacy**

Animacy plays an important role in various parts of Blackfoot grammar. The subject of all transitive verbs must be animate: specifically, it must be semantically animate (Frantz 2009, Ritter & Rosen 2010). In other words, a subject must have a sentience that refers to real-world or semantic animacy, or the ability to sense or perceive. A human can be considered to be sentient, but an object or a thing cannot. Interestingly, an applied argument, despite being a non-core argument, must also be sentient (Frantz 2009, Bliss 2010).

Consider the applied argument in (8).
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(8)  nitaahkanomoawa anna issitsimaan amiksi si’kaaniksi.
    nit-(w)aahkan-omo-a-wa [ana issitsimaan]/*[ ani akssin]
    1-sew-APPL.TA-DIR-3S DEM baby DEM bed
    am-iksi   si’kaan-iksi
    DEM-AN.PL  blanket-AN.PL
    ‘I sewed those blankets for the baby/the bed.’  (Bliss 2010)

In (8), the beneficiary argument ‘the baby’ is introduced by the applicative suffix -omo, which is sentient and animate. Also, note the added TA gloss next to the applicative suffix; following Frantz (2009), a benefactive suffix omo- can be treated as a derivational morpheme that changes the category of a verb to the TA type. This pattern predicts that the object of the derived applicative verb must be animate. If the beneficiary is inanimate, such as ‘the bed’ as in (8), the sentence becomes ungrammatical.

In Blackfoot, some semantically inanimate nouns are grammatically animate, e.g., ‘wagon’, ‘car’, or ‘tree’ (Frantz 2009, Frantz & Russell 1995), and behave similarly to animate sentient nouns with respect to the range of noun inflection markings that they take, e.g., plural marking. However, they cannot appear as applied arguments, as illustrated with the noun ‘car’ as in (9).

(9)  *nitaassisitomoawa iitaisapopao’p aniistsi saapia’tsisistsi
    nit-issisi-omo-a-wa ani iitaisapopao’p ani-istsi saapia’tsis-istsi
    1-fix-APPL.TA-DIR-3S DEM car.AN DEM-INA.PL mirror-INA.PL
    ‘I fixed the (side) mirrors for the car.’

By contrast, the non-core arguments introduced by linkers do not show this type of restriction: the linkers allow a full range of animacy in their arguments. As illustrated in (10) with the direction linker, either the sentient ‘doctor’ or inanimate ‘house’ is allowed. Moreover, the grammatically animate but non-sentient argument ‘trees’ is allowed. The other two linkers show the same behavior in this respect (Kim to appear b, 2014b).

(10) nitsitapokska’sina ana aisokinaki/miistsisiiksi/ni napioyisi
    nit-itap-okska’sina ana aisokinaki/miistsisiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house.’

4.2 Person prefix marking

In Blackfoot, verbs are marked with affixes that indicate the person value of core arguments (Frantz 2009). In particular, first and second persons are indicated by prefixes (nit- and kit- respectively) on the verbs. This type of person prefix marking cannot be used to mark the non-core arguments introduced by the linkers, unlike those of Appl. As illustrated in (11a), when the associative linker introduces an associate ‘me’, the sentence is ungrammatical if this is expressed by the person prefix nit-. (11b) demonstrates the grammatical version of this sentence where the associate is expressed with an independent pronoun ‘I’ niisto.

(11a) *niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisi
    1-DIRECTION-run.AI DEM doctor.AN/ trees.AN/ DEM house.INA
    ‘I ran to the doctor/trees/the house’.

(11b) niitapokska’sina ana miistsiiksi/ni napioyisi
    nit-itap-okska’sina ana miistsiiksi/ ani napioyisa
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(11) a. *ana John nitohpaatato ’toka ana akiikoan
   ana John nit-ohp-waatato’to-ok-wa ana akiikoan
   DEM John 1-ASSOC-hug.TA-INV-3S DEM girl.AN
   ‘John hugged the girl with me.’

   b. niisto ana John iihpaatato ’toa ana akiikoan
      niisto ana John iihp-waatato’to-a-wa ana akiikoan
      I DEM John ASSOC-hug.TA-DIR-3S DEM girl.AN
      ‘John hugged the girl with me.’

   In contrast, the argument introduced by Appl must be expressed with a person prefix
as shown in (5) earlier, and it is ungrammatical when expressed with a pronoun (12).

(12) ana John skiitomok napayin niisto
    *ana John ihkiit-omo-ok-a napayin niisto
    DEM John bake-APPL.TA-INV-3S bread.INA I
    ‘John bakes bread for me.’

   This contrast between linkers and the applicative suffix indicates that the arguments
of the linkers cannot be treated like non-core arguments introduced by an Appl head.

4.3 Theme (direct/inverse) marking

In Blackfoot, as in all other Algonquian languages, the direction of the action described
by the verb is indicated by theme markers: by either direct or inverse morphology (Frantz
2009). Direct-inverse systems make reference to a person scale such as that shown in (13),
which is simplified for the purpose of this paper. If the direction of action is from a
1st/2nd person to a 3rd person, or from 1st person to 2nd person, the verb is marked as
being direct. If the direction is the opposite, such as a 3rd person to a 1st/2nd person or
from 2nd person to 1st, then the verb is marked as being inverse.

(13) 1st, 2nd > 3rd

   Like the core arguments of the verb, the non-core argument introduced by Appl must
be marked with theme marking as shown in (5) in section 2.3. The third person subject
‘John’ acts on the 1st person beneficiary; consequently, the verb is marked with the
inverse marker -ok. Without the inverse marker, the sentence is ungrammatical.

   Unlike the argument of Appl, objects of the linkers cannot be marked with theme
markers. For instance, in (14), ‘the finger’ is introduced by the instrument linker iiht-.
The intended direction of the action is from ‘the finger’ to the first person ‘I’ as might be
marked by the inverse marker -ok in (14). However, the sentence is ungrammatical
with this interpretation. An acceptable interpretation of the sentence is ‘Someone caught me
by the finger’, where the direction of action is from an unknown 3rd person to the 1st
person, marked with the inverse marker -ok. The other two linkers show the same pattern,
and examples are provided in Kim (2014b).
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(14) *na mookitsis nohtsissino’tokwa
    ana mookitis nit-oht-yissino’to-ok-wa
    DEM finger.AN 1-INST-catch.TA-INV-3S
    ‘The finger caught me.’

4.4 Agreement

Verbs in Blackfoot can agree with their object in person and number. For TA and TI verbs, the suffix -wa indicates that the object is a 3rd person and singular. For example, consider the applicative example from (8). The verb ‘sewed’ shows object agreement with the applied argument ‘the baby’, as the 3rd person singular marker -wa indicates. It does not agree with the theme ‘the blankets’, which is plural. The third person plural object agreement marker is -yi, and this cannot be used to mark the theme argument. If both types of argument are present, it is always the applied argument that agrees with the verb, not the theme.

The non-core arguments introduced by the linkers, however, do not agree with the verb, as illustrated below with the direction linker (15) for instance. In (15), for example, the singular ‘house’ (INA) is introduced with the direction linker itap-, while the theme of the verb ‘carry’ is the plural object ‘bags’ (INA). The verb shows agreement with the theme, as the 3rd person plural suffix -yi indicates.

(15) nitaakitapohpaatoo’pii aniistsi skinitsuimanisiti ani napioyisi
    nit-yaak-itap-opaatoo’-p-yi  aniistsi skinitsuimanisiti ani napioyisi
    l-will-DIRECTION-carry.TI-DIR-3PL DEM.PL bag.PL DEM house
    ‘I will carry the bags to the house.’

This section demonstrates that the non-core arguments introduced by linkers and the applicative (Appl) morpheme are different syntactically: with linkers, we saw the absence of animacy restrictions, person prefix or theme marking, and agreement. An Appl approach to non-core arguments (see the structure in (7)) cannot account for the differing properties of non-core arguments introduced by the linkers as compared to those introduced by the Appl morpheme.

5. Linkers are not P or the result of PI

5.1 Contribution to the argument structure of the VP

Under the PI analysis, an applied argument is the result of P incorporating into V, as discussed in section 2. An applicative suffix on the verb is the realization of this incorporated P. The applicative morphemes analyzed by this approach are exactly the same elements which are realized under an Appl head in the Appl approach.

It is thus not surprising that applied arguments derived by PI show the properties of Appl’s non-core argument objects, e.g., object agreement (see (7)). In fact, it is well known that applied arguments behave like objects, while the corresponding arguments of

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2AI verbs can be marked with -wa only when the subject is 3rd person singular.
an independent P before incorporation do not (e.g., Marantz 1984, 1993, Baker 1988, 1992), i.e., the arguments of P under PI behave similarly to the non-core arguments of Appl. This is not the case with the non-core arguments of linkers, as shown in the previous sections. The contrast between an incorporated P and the linkers suggests that the linkers cannot be represented as a P under the PI approach.

Further evidence put forth for a PI analysis is that non-core arguments of incorporated Ps can be omitted (Zeller 2006). However, in Blackfoot, the non-core arguments introduced by the linkers cannot be omitted. Consider examples of the instrument linker in (16). Without an overt non-core argument, the sentence is ungrammatical; i.e. the linker has no implied object.

(16) *nohtawaakomi`taki
    nit-oht-awaakomi-i`taki
    1-INST-love-AI
    ‘I love something/someone.’

The final piece of evidence discussed by Zeller (2006) in support of PI is a c-commanding relationship between a theme and a non-core argument. As illustrated in (2), a theme can in principle c-command a non-core argument of P if the non-core argument remains in situ, in contrast to a non-core argument in an Appl analysis (see (3)) where a theme is asymmetrically c-commanded by an applied argument.

(17) [vP v + DP [vP DP [V [V+P [PP P DP]]]]]

The PI analysis in (2) predicts that the theme in a PI approach can incorporate into the verb (see 17) (Zeller 2006). If a linker phrase can be analyzed with a PI-type analysis, then we might expect a similar type of c-commanding relationship between the non-core argument of a linker and a theme. However, it has been shown that in Blackfoot neither a theme nor a non-core argument of a linker c-commands each other (Louie 2009).³ For instance, a theme does not c-command the object of the linker as shown in (18). In (18), the instrument linker introduces ‘his sister’, and the theme of the verb ‘trap’ is ‘all those men.’ The theme ‘those men’ cannot variable bind into the object of the linker ‘his sister’, unlike the prediction made by a PI analysis.

(18) ohsis nitoohkanaikkaayaa omiksi ninaiks
    o’-sis nit-oht-ohkan-ikki-ː-yaa om-iksi ninaa-iksi
    3-y.sister₁ 1-INST-all-trap.TA-DIR-3PL DEM-AN.PL man-AN.PL
    ‘I used his sister to trap all those men.’
    (Louie 2009)

The evidence provided here suggests that linkers cannot be analyzed as incorporated Ps.

³See Louie (2009) for more data. Morpheme gloss in (18) is adjusted to the context of this paper.
5.2 Linkers are not independent Ps

Although linkers are not Ps which have undergone PI, they may be an independent P before incorporation, which may be the reason that they do not show any properties contributing to argument structure such as agreement or person prefix marking. In Zeller (2006), for instance, it has been shown that a suffixal P (e.g. the applicative suffix in (1b)) which introduces non-core arguments can appear separately from the verb (see (1a)). This data has been taken as evidence for a PI analysis, as these applicative suffixes can be mobile like P before incorporation, and can be incorporated into a verb later.

However, this type of treatment cannot be carried over to the linkers in Blackfoot, as all the linkers in question are strictly verbal affixes and cannot be separated from the verb. For example, the direction linker prefixed to the verb which introduces the direction of motion (19) cannot appear separately from the verb, as the ungrammaticality of (19) illustrates.

(19) *aakokska’siwa itap ani napioyisi
    yaak-okska’si-wa itap ani napioyisi
    FUT-run.AI-3S DIRECTION DEM house
    ‘She will run to the house.’

Moreover, linkers show different properties than other instances of P in Blackfoot (Kim 2014a, b), namely non-linkers. As in (20), non-linker Ps cannot introduce an argument, unlike linkers (Frantz 2009; Frantz & Russell 1995; Kim 2014a, b, to appear b).

(20) aakaamisokska’siwa ami sspahkoyi
    yaak-waamis-okska’si-wa (*ami isspahkoyi)
    will-up-run.AI-3S DEM hill
    ‘He will run up (the hill).’

Interestingly, non-linker P can appear separately from the verb when suffixed with a locative morpheme -oohtsi (Kim 2014b). The example in (21) illustrates this.

(21) aamisoohtsi
    waamis-oohtsi
    up-place
    ‘upper place’ (e.g. upstairs)

Linkers are also different from the non-linker Ps in this respect: they cannot appear separately from the verb by being suffixed with the morpheme -oohtsi, as shown in (22). Possible meanings of each ungrammatical derivation in (22) are not indicated, as potential plausible meanings are unclear. Nevertheless, the data in (22) demonstrate that linkers do not behave like non-linkers with respect to the locative morpheme -oohtsi.

(22) a. *iihtoohtsi
    b. *iihpoohhtsi
    c. *itapoohtsi
    iiht-oohhtsi iihp-oohhtsi itap-oohhtsi
    INST-place ASSOC-place DIRECTION-place
The pieces of evidence discussed in this section and the previous section indicate that a linker: (i) is not a P in this language, (ii) is not like a P which has undergone PI, and (iii) is not an independent P before incorporation.

6. **Linker as a functional p**

There are a variety of studies that propose a prepositional functional head (e.g., Riemsdijk 1990, Zeller 2001, Svenonius 2007, den Dikken 2003 among many others). The name I give for this functional head is p, following Svenonious (2007). I argue that linkers are syntactically represented by a functional p, and at some point in the derivation they are adjoined to a functional phrase, vP, as represented in (23).  

(23) a.  

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    vP  
   /   
  pP   vP
   |   /  
 p  ...  DP/NP  v ...  VP
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b. *iihtawayaakiaawa miistsii*
   *iiht-*waawayaki-*aa-*wa  miistsisi
   INST-hit.TA-DIR-3S  stick
   ‘He was hit by a stick.’

In Kim (to appear b, 2004b), I present evidence for the functional status of linkers. One type of evidence comes from Zeller’s (2001) claim that a functional p has a functional feature similar to v or n; in particular, in Germanic languages, a p head has been proposed to allow a lexical P to assign case to its complement (Zeller 2001; Svenonius 2005). Although Blackfoot does not have case, I have shown that a linker, in contrast to a non-linker, licenses an argument in a manner similar to v in the language. Another piece of supporting evidence is based on Baker’s (2003) proposal that a functional element cannot be the input or output of derivational morphological processes. I have shown that linkers, in contrast to lexical Ps in the language, do not participate in derivational morphological processes; e.g., see the contrast between (21) and (22) with respect to the locative derivational suffix *-ohtsi*. I have also demonstrated that a linker phrase, pP, adjoins to vP, not to IP or a phrase below vP, e.g., I-AspP or VP. I have provided evidence from abstract nominalization in Blackfoot, and from morpheme order between linker and person prefixes, which are realizations of I in the language (Ritter & Wiltschko 2009).

In the rest of this paper, I discuss the consequences of the account proposed in (23).

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*The internal structure of pP in (23) is not crucial to the proposed account in which the linker is represented as a functional head. I leave this issue for further research.*
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7. Consequences: VP idioms and ditransitves

7.1 p vs. P in VP idioms

The following example schematically represents the essence of the proposal on the linkers, and the position of PP (non-linker) is added:

(24) \[ [vP [pP linker... DP/NP] [vP v ... [vP V PP]]] \]

In (24), the linker phrase, pP, adjoins to vP, and lexical P (i.e., non-linker) appears inside VP. This predicts that linkers should not appear in VP idioms. On the other hand, it is possible that P may appear in VP idioms, if it merges inside VP as indicated in (24). I show that this prediction is borne out by the data.

Previous studies on idioms (Marantz 1997, Svenonius 2005, Kim to appear a) collectively suggest that elements outside lexical domains such as VP do not belong to idioms, while elements inside lexical domains tend to belong to idioms, as illustrated in (25a).

(25) a. \[ [FP F ... \downarrow [vP V]] \] boundary for idiomatic interpretation (adapted from Kim to appear a)

b. \[ [vP Linker \downarrow [vP Non-linker V]] \] Blackfoot

p \hspace{1cm} P

A similar split is found with linkers and non-linkers in Blackfoot with respect to idiom formation, as in (25b). In Blackfoot it is easy to find idioms formed with non-linkers, lexical Ps, but this is not the case with the linkers. The Blackfoot dictionary (Frantz & Russell 1995) shows numerous idioms that consist of P and a verb, some of which are illustrated in (26). Strikingly, in the dictionary, there are no idioms formed with the linkers.

(26) a. aakistaahtoo\-yaak-[vP [pP istaah]-oo]-wa
will-under-go.AI-3S
‘He will [go to Hell].’ (Lit. ‘He will go under.’)

b. ohkitopii
ohkit-opii
on-sit.AI
‘ride a horse.’ (Lit. sit on) (Frantz & Russell 1995)

This is exactly what is predicted by the proposed account: that (i) a linker is a functional p and a non-linker is a lexical P, and (ii) p appears in the functional domain, i.e. above vP. Further, the Blackfoot facts add additional cross-linguistic evidence to the
broader generalization that material inside the VP tends to easily become a part of idiomatic expressions, but material outside the VP does not.

### 7.2 DOC vs. PD in Blackfoot

The cross-linguistic generalization regarding DOC and PD has been that DOC bears an ApplP where the DP goal is introduced, while PD lacks ApplP and the to dative goal is introduced by P (e.g., Baker 1988, Marantz 1993, Pylkkänen 2008). Given this generalization, in Blackfoot, a PD should be expressed by a linker p, rather than by P, as a linker may introduce an argument but P cannot. This prediction is borne out by data, as illustrated in the following.

(27) a. *nitsitapipsstskao‘pyi ana John anistsi sinaakia ’tsisistsi*
   nit-*((itap)-ipsstskahtoo-’p-yi *(ana John) anistsi sinaakia’tsisistsi
   I-DIRECTION-delivered.TI-DIR-3PL DEM John DEM.PL book.PL
   ‘I delivered those books to John.’

b. *nitaakitapa ’pskohtoo ‘pyi anistsi intoaakia ’tsisistsi ana saahkomaapi*
   nit-yaak-*((ita)p-’pskahtoo-’p-yi an-istsi sinaakia’tsis-istsi
   I-will-DIRECTION-sell.TI-DIR-3PL DEM.PL book.PL
   *(ana saahkomaapi)*
   DEM boy
   ‘I will sell the books to the boy.’

In (27a), for instance, the goal ‘John’ is introduced by the direction linker *itap-. Without the linker, the goal argument cannot be expressed, and the sentences in (27) are ungrammatical. Moreover, as shown in section 4, the linker in these sentences does not show agreement with the verb. In (27b), for example, the goal ‘the boy’ is singular, and the theme ‘the books’ is plural. The verb agrees with the plural theme, as shown by the 3rd person plural agreement marker -yi.

Further, the choice of the verb is unaffected by the animacy of the goal argument. The verb in (27a) is the morphological TI (Transitive Inanimate) form, which requires an inanimate object; in (28), where the TA (Transitive Animate) form is used, requiring an animate object, the goal may still be inanimate. What must change for the verb is the animacy of the theme object, now represented by the animate ‘the chickens’.

(28) *nitsitapipsstskaoa ni iitaolphommao ‘p anikis niitowakiksi*
   nit-itap-ipsstka-a-yi an iitaolphommao ‘p aniksi niitowakiksi
   I-DIRECTION-delivered.TA-DIR-3PL DEM store.INA DEM.PL chicken.PL
   ‘I delivered those chickens to the store.’

Furthermore, PD in Blackfoot is not limited to expression with the linker *itap- ‘to’. PD is also possible with the instrument linker *iiht/oht-, which in such examples indicates a source meaning, as shown in (29).
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(29) nitaakohtamiistapioiya ni napiyis aniiksi saahkomaapiiksi
    nit-yaak-oht-miistap-ipi-ya/-*wa ani napiyis aniiksi saahkomaapiiksi
    I-will-INST-away-take.TA-3PL/-3SG DEM house.INA DEM-AN.PL boy-AN.PL

Thus, the data provided in this section confirm the prediction that Blackfoot PDs can be expressed by a linker: the linker marks a goal(-like) entity, or alternately a source. The Blackfoot data where a goal is introduced by a linker p (27-29), and DOC where an applicative suffix marks an indirect object (5) or (8) provide more parallel evidence to the cross-linguistic generalization on adpositions vs. Appl appearing in PD vs. DOC. The difference is that in Blackfoot PD is expressed with a functional p rather than a lexical P.

8. Conclusion

I have shown that a linker, which introduces non-core arguments in Blackfoot, can be represented by neither an Appl nor a P (under a PI operation). Although a linker introduces a semantically similar ranges of roles as compared to Appl or P, its syntactic properties are different from those of either. Building on current theories about the argument structure of verbal non-core arguments, I have proposed a functional p approach to the linkers that captures all its characteristic properties which differ from those of an applicative morpheme or an incorporated P.

Current literature on the argument structure of non-core arguments centers on clear-cut cases like Bantu applicatives or similar cases that have been assumed to belong to the realm of applicatives (alternatively, incorporated prepositions). This paper contributes to clarifying these issues by refining the distinct argument structure properties of semantically similar ranges of non-core arguments.

References


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