Patterns of nominalization in Blackfoot[1]

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Patterns of nominalization in Blackfoot are surveyed. It is demonstrated that two of these patterns behave like nouns while two others only partially behave like nouns. Degrees of nominality are analyzed within the assumption that there is a universal syntactic spine, a hierarchically organized set of categories, which are not intrinsically specified for nominality or verbality. They are category-neutral. Different nominalization patterns (and degrees of nominality) reduce to different ways of introducing the nominalizer*:* it may be introduced by a dedicated morphological marker (nominalization via m-marking), it may be introduced as a head (nominalization via complementation), or it may be introduced as part of the higher head (nominalization via selection). Category-neutral functional projections as well as functors are independently attested.

[1] I am grateful to my Blackfoot teacher, Beatrice Bullshields who provided the judgments for the Blackfoot data, which, unless otherwise indicated comes from original field-work. Research on this paper was in part in collaboration with Heather Bliss and Elizabeth Ritter. Their own papers in this volume complement what I report here. Funding was provided by a SSHRC Standard Research Grant.

1. Introduction

In this paper I have three interrelated goals. (1) The *empirical* goal is to describe the patterns of nominalization in Blackfoot. (2) The *analytical* goal is to develop a typology of nominalization patterns and to situate Blackfoot nominalization patterns within this typology. (3) And finally, my *theoretical* goal is to develop a *formal typology of categorization and re-categorization patterns* more generally as well as to develop a *typology of category-neutrality* and a model that derives this typology**.**

There are two broad types of nominalization patterns that are logically possible. They differ in terms of what is being nominalized. These two strategies are summarized in (1) and (2) below.

(1) *Re-categorizing* Nominalization $=_{def}$

A verbal linguistic object (LO) is categorized as a nominal LO ($LO_V \rightarrow LO_N$)

(2) *Categorizing* Nominalization $=_{def}$

A category-neutral LO is categorized as a nominal LO ($LO \rightarrow LO_N$)

There are two domains of nominalization: (1) the l-(exical) domain and (2) the f-(unctional) domain. I discuss each of them in turn

According to some analyses, l(exical)-LOs are intrinsically associated with categorial information, as in (3). On this view, nominalization is always *re-categorization* via overt or covert nominalizing affixes, as illustrated in (4).

(3) a. <*cat*>$_{N}$

b. <*like*>$_{V}$

(4) a. [[*transform*]$_{V}$-*ation*]$_{\mathbf{n}}$

b. [[*employ*]$_{V}$-*er*]$_{\mathbf{n}}$

c. [[*employ*]$_{N}$-*ee*]$_{\mathbf{n}}$

In contrast, according to distributionalist analyses l-LOs are not intrinsically associated with categorial information. Rather, √roots are assumed to be category-neutral (Marantz 1997, Borer 2005, among others). On this view, categorization is a matter of the syntactic distribution of an LO. There are two ways to think about this. Either categorization proceeds via categorizers (*n, v, a*; Marvin 2002), which may or may not be overtly spelled out (in the form of derivational affixes) as in (5). Alternatively, categorization may proceed via functional categories, which are themselves inherently nominal or verbal. Thus, in the context of D, a category-neutral LO is interpreted as a noun; while in the context of T, a category neutral LO is interpreted as a verb (Marantz 1997). This is illustrated in (6).

(5) a. [n [<*cat*>]]$_{n}$

b. [v [<*like*>]]$_{v}$

(6) a. [D$_{n}$ [<*cat*>]]$_{Dn}$

b. [T$_{v}$ [<*like*>]]$_{Tv}$

Turning now to the f-domain, on many current analyses, functional categories and function words are intrinsically associated with their categorial (feature) identity (T, D, C, …), including their nominal or verbal identity (Grimshaw 1991/2005, van Riemsdijk 1990, Cinque 1999). In other words, there are no category-neutral instantiations of f-categories (but see Levebvre 1998). This is illustrated in (7).

(7) a. $<\textit{the}>_{Dn}$

b. $<\textit{past}>_{Tv}$

The hierarchical organization of individual projections is regulated via extended projection (as in Grimshaw 1990 illustrated in (8)) or else via selection (as in (Panagiotidis & Grohmann 2009) modeled as an uninterpretable feature, as in (9).

(8) a. $[D_n\ [Num_n\ [N]]]$

b. $[T_v\ [Asp_v\ \ [V]]]$

(9) a. $[D_{un}\ [Num_n\ [N]]]$

b. $[T_{uv}\ [Asp_v\ \ [V]]]$

On this view, nominalization in the f-domain must always proceed via *re-categorization*, as in (10), where a verbal functional projection is nominalized via *–ing* (see Abney 1987 for extensive discussion).

(10) *John's washing the dishes pleased his mother.*

In contrast, as we have seen above, nominalization in the l-domain may proceed either via categorization or via re-categorization. This is summarized in table 1.

	categorization	re-categorization
f-domain	✗	✓
l-domain	✓	✓

Table 1: Categorization patterns

In this paper, I wish to establish that re-categorizing and categorizing nominalization are both attested in the lexical as well as in the functional domain. In particular, I will argue that functional categories, just like lexical categories may be inherently category-neutral. Consequently we find both re-categorizing and categorizing nominalization in the functional domain as summarized in table 2.

	categorization	re-categorization
f-domain	✓	✓
l-domain	✓	✓

Table 2: Categorization patterns revisited

I will make the argument as follows. I start by introducing a puzzle associated with nominalization patterns in Blackfoot (section 2). In particular, some nominalizations behave like nouns, while others don't. In section 3, I show that this puzzle cannot be solved by postulating a

zero nominalizer. In section 4, I develop my proposal according to which IP is category-neutral in the sense that it is not inherently verbal or nominal. In section 5, I show how this analysis can solve the puzzle by developing an analysis of the Blackfoot nominalization patterns. In section 6, I present independent evidence for category-neutral functional categories. And in section 7, I conclude.

2. Not all nominalizations are equally nominal

I start in this section by introducing the four patterns of nominalization in Blackfoot (2.1). I will show that some Blackfoot nominalizations behave like nouns, while others don't. To see this, I first introduce the Blackfoot-specific diagnostics for nounood (2.2); and then I demonstrate that the nominalization patterns differ in the number of criteria for nounhood they meet (2.3). This suggests that there are degrees of nominality. The challenge is to model this continuum within a formal framework, which recognizes categories with categorical behavior.

2.1 Patterns of nominalization in Blackfoot

As a point of departure, I introduce the four patterns of nominalization in Blackfoot as identified in Frantz 1991/2009.

First there is a type of clausal nominalization, which is not marked as such. For example, the form in (11) is ambiguous and may be interpreted as a clause or as a nominal constituent. This is reflected in the way this sentence may get translated as indicated in (i) and ii). Crucially there is no overt nominalizer that disambiguates this string. The referent of this type of nominalization is

always an event participant (namely the highest one available in the input structure; see Bliss this volume for detailed discussion). [2]

(11) *áakso'kaawa*

áak-yo'kaa-wa

FUT-sleep-3SG

i) 'He will sleep.'

ii) 'One who will sleep.'

I refer to this type of nominalization as *bare nominalization*.[3]

The second pattern is also a type of clausal nominalization but it is overtly marked by the suffix *–hp* or *–o'p.* The referent of this type of nominalization may be an event participant (12),

[2] I use the following glossing conventions. 1=1ST person; 2 = 2ND person; 21= inclusive; 3=3RD person; AI=animate intransitive; AN=animate; AUX=auxiliary; CONJ=conjunctive; CONN=connective; DEM=demonstrative; DET=determiner; DIR=direct; DUR=durative; FUT=future; IC=initial change; IMPF=imperfective; IN=inanimate; INST=instrument; INV=inverse; LOC=locative; NEG=negation; NOM=nominalizer; NV=non-visible; OBV=obviative; PL=plural; POSS=possessor; POST.INFL=post inflectional suffix; PRO=pronominal; PROX=proximate; PST=past; S=subject; SG=singular; TA=transitive animate; TI=transitive inanimate

[3] This pattern corresponds to Frantz' 1991/2009 *reclassification* and *theme nominalization.*

an adjunct (12) or the entire proposition (12). For detailed discussion as to what determines the interpretation of the nominalization, see Bliss, this volume.[4]

(12) a. *kitáóowatoohpistsi* (participant nominalization)

kit-á-oowatoo-**hp**-istsi

2-DUR-eat.TI-NOM-PL

'the things you eat'

b. *nómohtáóoyihpa* (adjunct nominalization)

n-omoht-á-ooyi-**hp**-wa

1-INST-DUR-eat-NOM-3S

'what I eat with' = 'my fork'

c. *kitsikákomimmokihpi* (propositional nominalization)

kit-ikakomimm-oki-**hp**-yi

2-love.TA-INV:1-NOM-IN.SG

'that you love me' Frantz 1991: p. 126

[4] Adjunct nominalization is dependent on the presence of a so called *linker* prefix. These are generally used to introduce adjuncts. Since these linkers are required for adjunct nominalization, an analysis of propositional nominalization in terms of adjunct nominalization as in Kayne 2011 and discussed in Travis this volume would not be straightforward. Propositional nominalizations in Blackfoot do not make use of linkers.

I refer to this type of nominalization as *–hp*-nominalization.[5]

Third we have a type of nominalization marked with *–hsin*. At first sight this seems to be a type of event nominalization (see Ritter, this volume for detailed analysis).

(13) a. *o'kááni*
o'kaa-**n**-yi
sleep-NOM-IN.S
'sleep' Frantz 2009: 115

b. *ikkamókstakssini*
ikkam-okstaki-**hsiN**-yi
fast-read.AI-NOM-IN.S
'fast reading'

I refer to this type of nominalization as *–hsin* nominalization.[6]

Finally, the last type of nominalization is marked with *-a'tsis*. It attaches to verbs and results in an instrument interpretation, as shown in (14).

(14) a. *ikkia'tsis*
ikki-a'tsis
whistle-NOM

[5] This pattern corresponds to Frantz' 1991/2009 *conjunct nominalization.*

[6] This pattern corresponds to Frantz' 1991/2009 *abstract nominalization.*

'whistle'

b. *aaná'kimaa'tsis*

waana'kimaa-a'tsis

illuminate-NOM

'lantern, lamp'

I refer to this type of nominalization as *–a'tsis* nominalization.[7]

To sum up, we find in Blackfoot four patterns of nominalization as summarized in table 3.

TYPE OF NOMINALIZATION	REFERENT	INPUT
Bare nominalization	Participant	clause
-hp nominalization	Participant, adjunct, proposition	clause
-hsin nominalization	Event	verb
-a'tsis nominalization	Instrument	verb

Table 3: Patterns of nominalization in Blackfoot

Our next goal is to determine whether these nominalizations do indeed derive nouns. In order to answer this question, we first need to introduce the diagnostic criteria for nounhood in Blackfoot.

2.2 Diagnosing nouns in Blackfoot

[7] This pattern corresponds to Frantz' 1991/2009 *instrument nominalization.*

In terms of their semantics, it is typically the case that nouns denote individuals whereas verbs denote events and states. This is also true in Blackfoot. Semantic criteria are, however, not sufficient to identify syntactic categories. In Blackfoot, there are a number of morpho-syntactic properties that serve this purpose. First, all nouns (but not verbs) can be marked for singular and plural (Frantz 1991/2009, Armoskaite 2011). The relevant plural morphology is given in table 4 below and examples are given in (15)-(16).

	ANIMATE		INANIMATE
	3	4	
SINGULAR	*-wa*	*-yi*	*-yi*
PLURAL	*-iksi*		*-istsi*

Table 4: Blackfoot number marking (Frantz 2009: 14)

(15) a. *oma* *ponoká-wa*
DEM elk-SG
'the elk'

b. *om-**iksi*** *ponoká-**íksi***
DEM-PL elk-PL
'these elks'

(16) a. **ottakiksi*
ottak -iksi
give.a.drink-AN.PL
Intended: 'bartenders'

b. **ottakistsi*
ottak-istsi
give.a.drink-IN.PL
Intended: 'bartenders'

Armoskaite 2011: 30 (22)

Second, all and only nouns are classified as being either *animate* or *inanimate*. This distinction is largely based on ontological properties but it cannot fully be predicted in that way. While nouns denoting ontologically animate individuals are all classified as grammatically animate, nouns denoting ontologically inanimate individuals are sometimes classified as grammatically inanimate. The marking of animacy is somewhat indirect in that it is reflected in the type of singular and plural marking (see table 4) above.

The next diagnostic has to do with the distribution of the so-called person prefixes (1st person *nit-,* 2nd person *kit-,* and 3rd person *ot-*). These prefixes are used with both nominal and verbal constituents. In the former case they serve as possessor agreement; in the latter case the serve as participant agreement for the highest ranked argument. There are two key differences between the nominal and the verbal instantiations: when used as nominal possessor agreement, 3rd person *ot-* is always present; when used as verbal agreement, 3rd person *ot-* is restricted based on clause-type and the type of arguments involved. As for clause-type, Blackfoot has five different patterns (Frantz 1991/2009), only three of which allow for the person prefixes: the *independent*, the *unreal* (which is a special form of the independent used to express counterfactuality) as well as the *conjunctive*. Independent clauses are typically used as matrix clauses while conjunctive clauses are typically used for dependent clauses (see Déchaine & Wiltschko 2012). The other two clause types (*imperative* and *subjunctive*) prohibit the use of person prefixes and are therefore not discussed here).

Turning now to the distribution of 3rd person prefixes, we observe that in the conjunctive mode they are unrestricted, but in the independent and unreal mode they are restricted to cases in which a 3rd person *obviative* acts on a 3rd person *proximate* argument (Frantz 1991). Secondly, person prefixes in the verbal paradigm differ from those in the nominal paradigm in the context

of inclusive 1st person: in the verbal paradigm there is no person prefix in this context; in the nominal paradigm the 2nd person prefix *kit-* is used. The distribution of person prefixes in Blackfoot is summarized in table 5 with exemplifying data in (17)-(18).

	NOMINAL	VERBAL		
	POSSESSIVE	INDEPENDENT MODE	UNREAL MODE	CONJUNCTIVE MODE
1	*nit…-(m)*	*nit…*	*nit…htopi*	*nit…hsi*
2	*kit…-(m)*	*kit…*	*kit…htopi*	*kit…hsi*
1PL	*nit…-(m)-nnan*	*nit…hpinnaana*	*nit…hpinnaanopi*	*nit…hsinnaani*
2PL	*kit…-(m)-oaawa*	*kit…hpoaawa*	*kit…hpoaawopi*	*kit…hsoaayi*
21/X	***kit****…-(m)-nnoon*	*…'pa*	*…o'topi*	*…o'si*
3	***ot****…-(m)*	*…wa*	*…wahtopi*	*ot…hsi*
3PL	***ot****…-(m)-oaawa*	*…yi*	*…wahtopiyi*	
3OBV	***ot****…-(m)-(wa)*	*…yini*	*… wahtopiyini*	

Table 5. Blackfoot nominal and verbal proclitic agreement

(17) a. *nitáákiikoama* b. *kitáákiikoama* c. *otáákiikoami*

nit-aakiikoama **kit-**aakiikoama **ot-**aakiikoami

1-girlfriend 2-girlfriend 3-girlfriend

'my girlfriend' 'your girlfriend' 'his/her girlfriend'

(18) a. *nítsspiyi* b. *kítsspiyi* c. *ihpíyiwa* c'. *otsspíyi'si*

nit-ihpiyi kit-ihpiyi ihpiyi-wa ot-ihpiyi-hsi

1-dance	2-dance	3-dance-3	3-dance-CONJ
'I danced.'	'You danced.'	'S/He danced.'	'when s/he danced'

We have now three diagnostics to identify nouns in Blackfoot: denoting individuals, being compatible with plural marking, and person prefixes showing the distribution of possessive prefixes (i.e., being completely unrestricted). This is summarized in table 6.

Diagnostic	N	V
denotes individual (R-argument)	✓	✗
compatible with (nominal) plural marking	✓	✗
compatible with possessive prefixes	✓	✗

Table 6: Diagnosing nouns in Blackfoot

With these diagnostics in place, we can now turn to the question as to whether nominalizations in Blackfoot behave as nouns. In the remainder of this section we address this question. We shall see that not all of the nominalization patterns identified in 2.1 have all of the distributional properties of nouns. We start with an exploration of bare nominalization.

2.3 Bare nominalizations do not pattern as nouns

In terms of the semantic criterion, bare nominalizations behave as nouns: they denote individuals. Consider again the example in (11) repeated below as (19). In its use as a clause it

denotes a proposition, whereas in its use as a nominalization it denotes an individual. Other examples of bare nominalizations are given in (20).

(19) *áakso'kaawa*

áak-yo'kaa-wa

FUT-sleep-3SG

i) 'He will sleep.'

ii) 'One who will sleep.'

(20) a. *iiyó'pi*

iiyi-**o'p**-yi

PST.eat-21:NOM-IN.S

'what we ate'

b. *otáániihpoaawaistsi*

ot-wa:nii-**hp**-oaawa-istsi

3-say.AI-NOM-3P-PL

'things they said'

Next, bare nominalizations allow for number marking as shown in the minimal pair in (21). The (a) example is a regular clause with a plural participant, which is in turn encoded by means of the pluralized demonstrative determiner (*omiksi)*. In this case, the verb itself is not marked for plural. If the

verb is so marked, as in the (b) example, the clause is necessarily interpreted as nominalized: it denotes an individual and the preceding demonstrative is directly associated with this nominalized constituent.

(21) a. *Omiksi áíkskimaayaa*

om-iksi á-ikskimaa-yaa

DEM-PL DUR-hunt-PL_V

'Those people hunt.'

*Those people who hunt

b. *Omiksi áíkskimaaiks*

om-iksi á-ikskimaa-iksi

DEM-PL DUR-hunt-PL_N

'Those people who hunt.'

*Those people hunt.

So far, bare nominalizations pattern as nouns, in that they denote individuals and can be pluralized. However, relative to our third diagnostic, bare nominalizations fail to behave like nouns. In particular, bare nominalizations do not allow for possessors. Consider the examples below. The verb *ooyo'si* ('prepare food for a meal, cook') may be nominalized but in its nominalized form it may not be possessed as indicated by the ungrammaticality of (22). Instead to express the intended meaning a type of compounding structure involving *aaki* ('woman') must be used (Johansson 2011).

(22) a. **Nit-á-ooyo'si-im-wa*

1-IMPF-cook-POSS-AN.SG

'My cook.'

b. *Nit-á-ooyo'si-aakíí-im-wa*

1-IMPF-cook-woman-POSS-AN.SG

'my cook' Johansson 2011 (11-12)

Similarly, while we can nominalize the clause '*someone's teaching'* to create a nominal (*teacher*) this newly derived nominal may not be possessed as shown by the ungrammaticality of (23). To express the intended meaning a paraphrase must be used, namely 'those who teach us' where the 1st plural functions as the object of the verb rather than the possessor of the derived noun.

(23) a. *Omiksi kitaissksinima'tstokinnooniksi maat-aisoki'taki-waaiksaa

om-iksi kit-a-i-ssksinima'tst-i-ok-innoon-iksi maat-aisoki'taki-waaiksaa

DEM-PL 2-IMPF-CONN-teach-TA-INV-21-PL NEG-happy-NEG.PRO

intended: 'Our teacher is not happy.'

b. *Omiksi aissksinimaa'tstokiksi maatáísoki'takiwaaiksaa*

Om-iksi a-i-ssksinimaa'tst-i-ok-i-iksi maat-aisoki'taki-waaiksaa

DEM-PL IMPF-CONN-teach-TA-INV-LOC-PL NEG-happy-NEG.PRO

'Our teachers are not happy.'

Literal: 'Those who teach us are not happy.'

In addition, Johansson 2011 discusses another property of nominalizations, which supports the conclusion that they do not pattern as nouns. In particular, nominalized clauses cannot be modified by an adjective. While *omahk* is in principle compatible with an adjectival and an adverbial construal in the context of a nominalization only the adverbial construal is possible. This is shown in (24).

(24) a. *Om-iksi* *omahk-á-yo'kaa-iksi* *n-oko's-aawa*

DEM-AN.PL big-IMPF-sleep-AN.PL 1-offspring-PRO

'Those big sleepers are my children.'

✓Adverbial: They sleep a lot, during the day for example habitual sleepers

✗Adjectival: physically big boys

b. *Om-iksi* *omahk-saahkómaapi-iksi* *á-yo'kaa–iksi* *n-oko's-aawa*

DEM-AN.PL big-boy-AN.PL IMPF-sleep-AN.PL 1-offspring-PRO

'Those (physically) big boys who are sleeping are my children.'

Johansson 2011: 18-19

2.4. Summary and questions

We have now established that bare nominalizations pattern as nouns for some but not for all of the available diagnostics. Our results are summarized in table 7.

Diagnostic	N	bare nominalization
denotes individual (R-argument)	✓	✓
compatible with (nominal) plural marking	✓	✓
compatible with possessive prefixes	✓	✗
compatible with adjectival modification	✓	✗

Table 7: Bare nominalizations don't (quite) pattern as nouns

Interestingly, other patterns of nominalizations in Blackfoot do behave like nouns on all counts. For reasons of space I cannot go into the details (see Ritter this volume, Bliss this volume). What we observe is that bare and *–hp* nominalizations pattern together in that they do not fully behave as nouns. This contrasts with *–hsin* and *–a'tsis* nominalizations, which fully behave like nouns. The results are summarized in table 8.

Diagnostic	N	bare nom	*-hp* nom	*a'tsis* nom	*hsiN* nom
denotes individual (R-argument)	✓	✓	✓	✓	✓
compatible with (nominal) plural marking	✓	✓	✓	✓	✓
compatible with possessive prefixes	✓	✗	✗	✓	✓

Table 8. Comparing patterns of nominalization: degrees of nominality

In light of these findings, we are faced with the following questions. For bare nominalizations, we need to establish what serves to mark the nominalization. And second, we need to account for the observed 'degrees of nominality'? Why do some patterns of nominalization not diagnose as nouns on all criteria?

3. Ruling out a zero noun analysis

In light of data like (11), repeated again in (25), one might hypothesize that bare nominalizations are derived by means of a zero noun $[Ø]_n$ serving as a nominalizer. This potential analysis is schematized in (26).

(25) *áakso'kaawa*

áak-yo'kaa-wa

FUT-sleep-3SG

i) ‘He will sleep.’

ii) ‘One who will sleep.’

(26) [[Ø]$_{n}$ [$_{IP}$…..]]$_{nom}$

However, the results reported in the last section speak against this analysis. In particular, if there were indeed a zero noun serving as the head of the construction, we would expect that these bare nominalizations behave as nouns on all counts. But they do not. They do not allow for possessive prefixes.[8] This is unexpected if they were to be analyzed as in (26).

There are two additional arguments against the zero noun analysis. First, as argued at length in Armoskaite 2011, Blackfoot verbal roots cannot be used as nominals, as shown in (27).

[8] A reviewer suggests that this may be due to a morphological restriction against having possessive affixation attached to a covert morpheme, as in (i)

(i) *poss.prefix-Ø-...

I know of no independent language-internal evidence to this effect. Moreover, the very same forms are used on verbs to cross-reference the argument highest on the person-hierarchy (Blackfoot has a system of direct/inverse marking). Assuming that perfective verb-stems are perfective due to the presence of a zero prefix, the generalization in (i) cannot hold, at least in the verbal domain. It is thus not clear how such a constraint could be learnable solely on the basis of the nominal paradigm.

(27) a. *ottakoyííwa*

ottak-o-yíí-wa

give a drink-TA-DIR-3SG

'He gave her a drink.'

b. **ottakiksi*

ottak-iksi

give a drink-AN.PL

Intended: 'bartender' Armoskaite 2011: 22 (30)

If Blackfoot made available a zero nominalizer, then it would be unexpected that this nominalizer cannot be applied to verbal roots. Why would it be restricted to nominalize clausal constituents?[9]

Another argument has to do with the distribution of one of the demonstrative determiners, namely *annahkayi.* Like other demonstratives it can precede a full noun as in (28).

(28) a.	*Oma*	*imitááwa*	*imsstsíma*	*omi*	*nápayini*.
	om-wa	imitaa-wa	imsstsi-m-wa	om-yi	napayin-yi.
	DEM-3S	dog-3S	steal.TI-3:INAN-3S	DEM-IN	bread-IN

'That dog stole the bread.'

b.	*Oma*	*imitááwa*	*imsstsíma*	*annihkayi*	*nápayini.*
	om-wa	imitaa-wa	imsstsi-m-wa	ann-yi-hk-ayi	napayin-yi.

[9] A reviewer suggest that this may be due to a restriction associated with the zero *n* to the effect that it may only select for an IP, and not a V. At this point I have no convincing counter-evidence for this claim.

DEM-3S dog-3S steal.TI-3:IN-3S DEM-IN-NV-*ayi* bread-IN

'That dog stole that one certain (piece of) bread.'

Unlike the other demonstrative determiners, however, *annahkayi* may not be used pronominally as shown in (29).

(29) a. *Nitsíínoawa anna.*

nit-iino-a-wa ann-wa

1-see-DIR-3S DEM-3S

'I saw him/her.'

b. **Nitsíínoawa annáhkayi.*

nit-iino-a-wa ann-wa-hk-ayi

1-see-DIR-3S DEM-3S-NV-*ayi*

intended: 'I saw him/her.'

This suggests that *annahkayi* cannot license a silent noun.[10] Nevertheless, *annahkayi* can precede a (bare) nominalized clause as shown in (30).

[10] A reviewer suggests that this pattern may be explained on the assumption that *annahkayi* requires a complement accounting for the ungrammaticality of (29) without appealing to the presence of a zero noun. And if this is the case then we would not have an argument against the presence of a zero noun in clausal nominalizations. However, if zero nouns are available in the language, it is not clear how to rule out the ungrammaticality of (29): the requirement for a complement would be satisfied by the zero noun. Thus, for this alternative to go through, one would have to appeal to a requirement for an overt

(30) a. *Annahk aahksáóyiwaahk iyísta'poo*

ann-wa-hk aahksa-ioyi-wa-hk ii-yista'poo

DEM-PROX-POST.INFL always-eat.AI-PROX-POST.INFL IC-go.away.AI

'That person that always eats went away.'

b. *Annahk aahksáóyiwaahk*

*S/he's always eating

Speaker's comment: this can't be a sentence by itself

The grammaticality of (30) indicates that bare nominalizations are not introduced by a silent noun, otherwise *annahkayi* would be expected to be ungrammatical, contrary to fact.

We have now established that bare nominalizations cannot be analyzed as being nominalized by a silent noun. But what else serves to mark such constructions as nominal? Furthermore, we still need to determine why bare nominalizations do not behave like nouns for all of the available diagnostics.

4. IPs are not inherently verbal

The proposal I develop here is couched within the Universal Spine Hypothesis (Déchaine & Wiltschko 2010, Wiltschko in preparation). The essence of this hypothesis is the postulation of a universal syntactic spine. A hierarchically organized set of functional categories (κ), each of which is associated with a particular function. Roughly, the layers we postulate correspond to the three domains generally

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complement, but it is not immediately clear how such a PF-requirement can be part of a selectional restriction.

assumed to be found in the clausal architecture: the domain of thematic relations, the domain of grammatical relations, and the domain of discourse relations.[11] The functions associated with the categories in each of these domains are *classification*, *anchoring*, and *linking* (for similar ideas see Travis 2005: 327 attributed to Ken Hale MIT classes in the 1980s). Furthermore, we assume that there is a nominal and a verbal instantiation of this spine accounting for the parallelism between nominal and verbal projections (Abney 1987, Grimshaw 1991 inter alia.)

(31) a. syntactic spine [κ_1 [κ_2 [κ_3]]]
core function [LINKING [ANCHORING [CLASSIFYING]]]

b. V spine [$_{CP}$ Comp [$_{IP}$ Infl [$_{AspP}$ Viewpoint Asp]]

c. N spine [$_{KP}$ Kase [$_{DP}$ Det [$_{ClassP}$ Class]]]

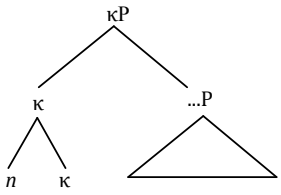
On this view, the universal syntactic spine is not inherently nominal or verbal. Instead it is neutral relative to nominality and verbality. So what makes a given projection nominal or verbal? In what follows I will show that the assumption that the anchoring category IP is inherently category-neutral (neither nominal nor verbal) allows us to understand the patterns of nominalization in Blackfoot. I further hypothesize that nominality and verbality is introduced as a lexical atom *n* and *v*, respectively.

In particular, in order to understand different patterns of categorization, I propose that the categorical features *n* (as well as *v*) may enter the syntactic spine in different ways. Specifically, *n* may associate directly with a functional category κ, as in (32). I refer to this as *nominalization via m(orphological)-markin*g. This derives a nominal functional category. The second strategy to become nominal is to associate *n* with κP in a head complement relation as in (32) and I refer to this as *nominalization via complementation*. This derives true nouns. Finally, there is also a third strategy

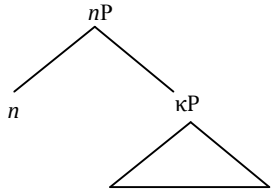
[11] There may be more layers in the spine. This is however not my concern in this paper.

whereby *n* is not directly associated with the nominalized category κ, but instead with a higher functional category which turns the category-neutral κP into a nominal category via f-selection, as illustrated in (32). I refer to this as *nominalization via f-selection*.

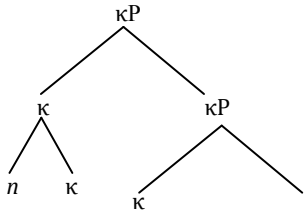
(32) a. nominalization via m-marking



b. nominalization via complementation



c. nominalization via f-selection



5. Analysing Blackfoot nominalization patterns

We are now ready to analyse the nominalization patterns of Blackfoot. I shall argue that clausal nominalization in Blackfoot is derived via f-selection (the case of bare nominalization) or via m-marking (the case of *–hp* nominalization). The other types of nominalization patterns are derived via

complementation. This is summarized in table 9. We discuss each of these patterns in turn, with the exception of *hsiN* nominalization, which is the topic of investigation in Ritter, this volume.

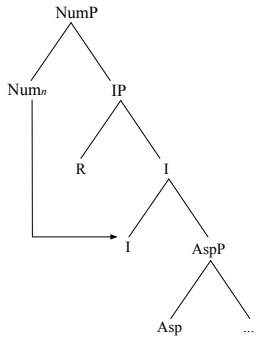
	bare nom	*-hp* nom	*a'tsis* nom	*hsiN* nom
Nominalization strategy	f-selection	m-marking	complementation	complementation
Instance of *n*	*n*=*κ* NUMBER	*n*=*-hp*	*n*=*-a'tsis*	*n*=*-hsiN*

Table 9: Analyzing Blackfoot nominalization patterns

5.1 Bare nominalization

One of the key problems associated with bare nominalization in Blackfoot is the question as to what serves to mark this constituent as being nominalized. I argue here that in this case nominalization is a matter of f-selection. Specifically, number marking may turn a bare IP into a nominal constituent, as schematized in (33).

(33) nominalization via f-selection



The result of this type of nominalization is a nominal constituent, which does not behave like a real noun. It is nominal because the nominal feature on Num turns its complement (IP) into a nominal via f-

selection. However, the nominalized clause is never dominated by an independent projection of *n*. Hence it does not behave like a noun. The degrees of nominality associated with bare nominalization are summarized again in table 10.

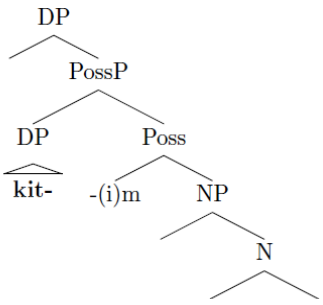
Diagnostic	N	bare nom
denotes individual (R-argument)	✓	✓
compatible with (nominal) plural marking	✓	✓
compatible with possessive prefixes	✓	✗
compatible with adjectival modification	✓	✗

Table 10. Degrees of nominality

They follow from our analysis in the following way. Suppose that the nominal feature associated with I via f-selection turns the abstract argument in SpecIP into a referential argument. This accounts for the fact that bare nominalization denotes an individual. Next, plural marking is possible because it is precisely the mechanism to turn the IP into a nominal constituent. And adjectival modification is dependent on the presence of an R-argument hence is impossible with bare nominalization.

The question remains however why possessive prefixes are not possible with bare nominalization. On independent grounds, Ritter & Rosen 2010 have argued that in Blackfoot possessor arguments are introduced by *n* and then licensed by a separate functional projection (Poss) as schematized in (34)

(34) Licensing possessors (from Ritter & Rosen 2010)



On this analysis then, the projection of a possessive prefix in PossP requires the presence of a possessor argument. In the absence of *n*P there cannot be such a possessor. Hence clauses nominalized via f-selection do not allow for possessive prefixes.

Under this analysis, bare nominalizations are based on independent clauses, which are category-neutral, and which are nominalized via f-selection. Interestingly, the independent paradigm has its roots in the nominal paradigm. That is, it is a well-known fact within the Algonquianist tradition that from a diachronic perspective, the independent order is an innovation. In particular all clauses used to be in the so called *conjunct order*, which is now reserved for dependent clauses, at least in Blackfoot (Frantz 1991/2009; though see Cook 2008 for a discussion of conjunct order in Plains Cree showing that they are not always dependent in a syntactic sense). Independent order morphology has been borrowed from the nominal paradigm (Pentland 1999, Goddard 2007; see Oxford 2012 for a recent discussion and literature overview). This diachronic pattern suggests that the verbal paradigm was neutralized via the use of a nominal paradigm deriving a category-neutral IP. Based on these observations, I speculate that there are two ways to be interpreted as verbal: i) via explicit verbal marking (i.e., *v* on I) or else ii) via default. The independent order is an instance of the latter type: in the absence of *n* on I, it is interpreted as a verbal category. This is consistent with a pattern reported for Tagalog in Kaufmann 2009.

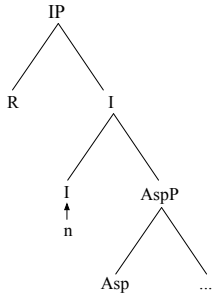
In sum, Blackfoot clauses in the independent order are category-neutral. They may participate in nominalization via f-selection by Num. Note that even though Num selects for a nominal constituent, it appears that the IP is not itself nominal but category-neutral. This suggests that f-selection must be

looking for a constituent that does not contradict the selected features (*n*). Both explicitly nominal constituents as well as category-neutral constituents fit the bill. But explicit verbal constituents are predicted to not be able to serve as the input for nominalization via f-selection. This is indeed the case. Bare nominalization is only attested with the independent order, which instantiates the category-neutral IP. Other clause-types, which are explicitly verbal, do not participate in this pattern of nominalization.

5.2 -hp nominalization

We now turn to the other type of clausal nominalization, marked by *–hp* and thus labeled here as *–hp* nominalization. I argue that *–hp* is to be analyzed as instantiating *n* itself. By associating directly with I it turns a category-neutral IP into an explicitly nominalized IP. This is schematized in (35).

(35) nominalization via **m-marking** (= *-hp* nominalization)



As with bare nominalization, the result of this type of nominalization is a nominal constituent that does not behave like a real noun. It is nominal because the nominal feature *n* associates with I. However, the nominalized clause is never dominated by an independent projection of *n*. Hence it does not behave like a noun. The degrees of nominality associated with bare nominalization are summarized again in table 11 below.

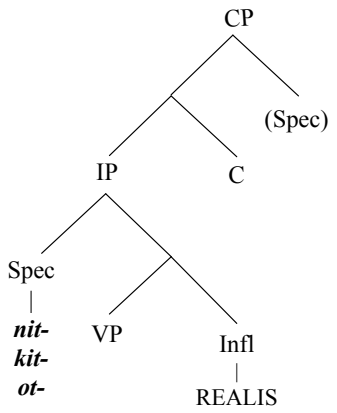
Diagnostic	N	-hp nom
denotes individual (R-argument)	✓	✓
compatible with (nominal) plural marking	✓	✓
compatible with possessive prefixes	✓	✗

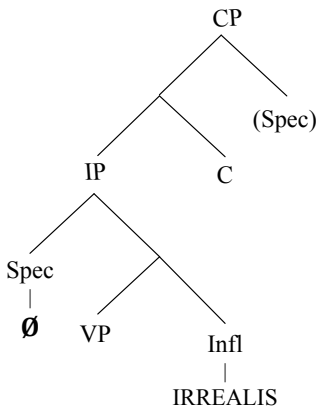
Table 11: Degrees of nominality with *–hp* nominalization

Just as with IP-nominalization, these properties follow from our analysis. The R-argument is introduced by the nominal feature in I, accounting for the individual-denoting property. Plural marking is possible because a nominalized IP may be selected by Num. And possessive prefixes are unattested because of the absence of an independent *n,* which would however be needed to introduce a possessor argument.

The assumption that *–hp* is a nominal suffix (*n)* which directly associates with I predicts that it should be in complementary distribution with other formatives that associate with I. This prediction is indeed borne out. In Ritter & Wiltschko 2011, and in Déchaine & Wiltschko to appear, it is argued that Blackfoot clause-typing morphology is associated with I. This includes the markers for independent order, conjunctive order unreal mode as well as subjunctive, and imperative clause-types. As noted above, the former three are all realis clause types, which allow for person-prefixes in SpecIP, while the latter two are irrealis type clauses, which do not allow for the person prefixes. This is illustrated below in the form of the tree-structure (36). The corresponding paradigms are given in table 12.

(36) a. Blackfoot Realis Clause b. Blackfoot Irrealis Clause





Ø/*-hp* → independent

-hsi → conjunctive

-htopi → unreal

-iniki → subjunctive

-k → imperative

Déchaine & Wiltschko, 2012

	REALIS			IRREALIS	
	INDEPENDENT	UNREAL	CONJUNCTIVE	SUBJUNCTIVE	IMPERATIVE
1	*nit…*	*nit…htopi*	*nit…hsi*	*…iniki*	
2	*kit…*	*kit…htopi*	*kit…hsi*		
1PL	*nit…hpinnaana*	*nit…hpinnaanopi*	*nit…hsinnaani*	*…inoaa-iniki*	
2PL	*kit…hpoaawa*	*kit…hpoaawopi*	*kit…hsoaayi*		*…k*
X	*…'pa*	*…o'topi*	*…o'si*	*…o'ki*	
3	*…wa*	*…wahtopi*	*ot…hsi*	*…si*	
3PL	*…yi*	*…wahtopiyi*			
3OBV	*…yini*	*… wahtopiyini*			

Table 12 Blackfoot Intransitive Verb Paradigm (adapted from Frantz 1991:145; D&W, in press)

Blackfoot conjunct clauses are the verbal equivalent of *–hp* nominalized IPs in that they show the same morphological properties, as indicated by the paradigm in table 13. (Note that this is the reason why Frantz 1991/2009 refers to *–hp* nominalization as *conjunct nominalization*.)

	CONJUNCTIVE MODE (-hs)		CLAUSE NOMINALIZATION (-hp)	
	VAI	VTI	VAI	VTI
1	*nit…hsi*	*nit…hsi*	*nit…hpi*	*nit…hpi*
2	*kit…hsi*	*kit…hsi*	*kit…hpi*	*kit…hpi*
1pl	*nit…hsinnaani*	*nit…hsinnaani*	*nit…hpinnaani*	*nit…hpinnaani*
2pl	*kit…hsoaayi*	*kit…hsoaayi*	*kit…hpoaayi*	*kit…hpoaayi*
x	*…o'si*	*…hsi*	*…o'pi*	*…hpi*
3/3PL/3OBV	*ot…hsi*	*ot…hsi*	*ot…hpi*	*ot…hpi*

Table 13. Blackfoot conjunctive mode versus conjunct nominalization (adapted from Frantz 1991:119, 145, 146, D&W in press)

5.3 a'tsis nominalization

Lastly, we turn to *a'tsis* nominalization.[12] I argue that *–a'tsis* is itself an instantiation of *n*, which combines with a verbal constituent, which I assume to be inner Aspect in the sense of Travis 2009. This is so because the input constituent for *–a'tsis* nominalization has exactly the same properties as the input for *–hsin* nominalization. These properties are listed in (37) with some relevant examples given in (38)-(39).

(37) Properties of *-a'tsis* and *–hsiN* nominalization

[12] *-hsin* nominalization is discussed in detail in Ritter, this volume.

i) DP and NP arguments are never realized

ii) possessive morphology refers to the agent (in)alienable possessor.

iii) prefixes identifying time, location and instrument may not be realized on the verbal input

iv) the input verb can only be intransitive

(38) *-a'tsis* nominalization combines with animate intransitive verbs

Nitsitáání amo sináákia'tsis.

nit-itaanii amo sina-aki-a'tsis

1-read.AI DEM draw-AI-INSTR

'I read this book.'

(39) *-a'tsis* nominalization cannot contain verbal person prefixes

a. *kitsóópa'tsinnoon*

kit-iso-opii-a'tsis-innoon

2-on-sit.AI-NOM-21

'our (inclusive) chair'

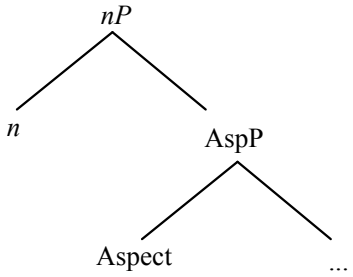
b. *sóópa'tsiyo'p iso-opii-a'tsis-o'p

on-sit.AI-NOM-21`

intended: "our (inclusive) chair"

Ritter (this volume) analyses *-hsiN* nominalization as *n* combining with inner Asp. I assume that the same analysis carries over to *a'tsis* nominalization, as in (40).

(40) nominalization via *n*



As a consequence the derived form has all of the properties of a noun: it is a noun. This is summarized in Table 13.

Diagnostic	N	a'tsis nom
denotes individual (R-argument)	✓	✓
compatible with (nominal) plural marking	✓	✓
compatible with possessive prefixes	✓	✓
compatible with adjectival modification	✓	✓

Table 14: *a'tsis* nominalization behaves like a noun

6. Other category-neutral functional categories

The core claim I defend in this paper is the assumption that functional categories, such as I, are not inherently categorized as being nominal or verbal; they are category-neutral. This accounts for the nominalization patterns observed in Blackfoot. If this analysis is on the right track we expect that category-neutral functional categories may be found elsewhere. In this section I show that this is indeed the case. In particular, I review evidence from Halkomelem (Central Coast Salish) to the effect that i) IPs are category neutral (Thompson 2012) and ii) the word class associated with I is category-neutral.

6.1 Category-neutral IPs: Halkomelem

It is a well-known fact that Salish languages show predicate-argument flexibility (Kinkade 1983, Jelinek & Demers 1994). That is, the same form may be used as a (verbal) predicate and as a (nominal) argument. This is shown by the data in (41).

(41) Predicate argument flexibility (Upriver Halkomelem)

a. [$_{\text{pred}}$ *ʔimɛx$_v$* [$_{\text{arg}}$ *tə swiyəqə*$_{\text{n}}$]]

[walk [DET man]]

'The man is walking.'

b. [$_{\text{pred}}$ s*wiyəqə* [$_{\text{arg}}$ *tə ʔimɛx*$_{\text{v}}$]]

[man [DET walk]]

'The one who is walking is a man.'

Thompson 2012: 77 (103)

There is, however, evidence that nouns and verbs can be distinguished in this language (Demirdache & Matthewson 1995). Thus, the source of category-neutrality cannot lie in the absence of a noun-verb distinction. Another way to think about this category-neutral behavior in Halkomelem is that I can select for both nominal and verbal categories. And on the basis of this, one may conclude with Thompson 2012:87 that I is 'category-neutral'.

If Thompson's analysis is on the right track, then we can conclude that category-neutrality may manifest itself in selectional properties, as well. In particular, in Halkomelem category-neutral I fails to unambiguously select for either a nominal or a verbal category: it is compatible with both. This contrasts with Blackfoot where category-neutrality of I manifests itself in its selectability. It is compatible with being selected by a nominal constituent such as Num.

6.2 Category-neutral functors

If I is indeed inherently category-neutral, we expect to find elements that lexicalize category-neutral functional categories. That is, we expect to find category-neutral functors. This is indeed the case as I will now show. In Halkomelem, *i* and *li* can serve as functors both in the nominal as well as in the verbal domain. In particular, in the verbal domain *i* and *li* are classified as auxiliaries. They serve to locate the event relative to the utterance location. *i* is used when the event takes place at the location of the utterance (42); *li* is used when the event takes place somewhere else (42).

(42) a. ***í***$_{prox}$ *qw'eyílex tú-tl'ò*
AUX dance he
'He is/was dancing [here]'

b. ***lí***$_{distal}$ *qw'eyílex tú-tl'ò*
AUX dance he
'He is/was dancing [there].'

However, *i* and *li* are not restricted to occur in the verbal domain. Instead they may also be used preceding determiner phrases (DPs) essentially functioning as a preposition. This is shown in the examples in (43).

(43) a. *i-lh-tset* ***li*** *te sqw'eyílex*
here-PAST-1PL.S there ART dance

'We were at the dance.'

b. *i-lh-tsel* ***lí*** *kw'e Chilliwack*

here-PST-1SG.S there ART Chilliwack

'I was at Chilliwack.'

c. *qwà:l* ***li*** *kw'e qéx mestíyexw*

speak there DET many people

'announce before lots of people, announce at a gathering',

d. *sq'óq'ey te pús* ***í*** *kw'e xálh*

dead DET cat here DET road

'There's a dead cat on the road.'

7. Conclusion

The problem that I have addressed in this paper is the fact that while Blackfoot has several patterns of nominalizations, not all of them behave truly like nouns. We have established this on the basis of three criteria that diagnose for nouns in the language. We have seen that bare and *hp-* nominalizations do not behave like nouns on all counts. Thus, there seems to be some degree of nominality. The puzzle I set out to solve was to understand the source of this degree of nominality. I have argued that the spine of functional categories is not intrinsically associated with nominal or verbal features. Instead, the spine is category-neutral. This automatically allows us to understand the strict parallelism between nominal and verbal extended projections: they are both derived from a category-neutral spine. Information about categorial identity is added to the spine and thus, nominal and verbal features must be part of the lexical atoms. If so, category-neutrality is not restricted to (lexical) roots. Instead functional categories and the word-classes that instantiate them may also be category-neutral.

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