

Featuring Animacy

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Abstract

Algonquian languages are famous for their animacy-based grammatical properties - an animacy based noun classification system and direct/inverse system which gives rise to animacy hierarchy effects in the determination of verb agreement. In this paper I provide new evidence for the proposal that the distinctive properties of these languages is due to the use of participant-based features, rather than spatio-temporal ones, for both nominal and verbal functional categories (Ritter & Wiltschko 2009, 2014). Building on Wiltschko (2012), I develop a formal treatment of the Blackfoot aspectual system that assumes a category Inner Aspect (cf. MacDonald 2008, Travis 1991, 2010). Focusing on lexical aspect in Blackfoot, I demonstrate that the classification of both nouns (Seinsarten) and verbs (Aktionsarten) is based on animacy, rather than boundedness, resulting in a strikingly different aspectual system for both categories.

1. Introduction

Both Folli and Harley (2008) and Ramchand (2008) assume that animacy is outside the narrow syntax, and that it constitutes part of encyclopedic knowledge. This assumption appears to be correct for languages like English, where (with the exception of 3rd person pronouns) animacy has no direct morpho-syntactic expression in either nominal or verbal inflectional paradigms. However, it is problematic for Algonquian languages, such as Blackfoot, which clearly manifest animacy distinctions in both nominal and verbal paradigms. This observation raises the following questions: How do we represent the difference between Blackfoot and English, and what are the grammatical consequences of this difference?

In this paper I provide an analysis of Blackfoot, a language that undoubtedly has a morpho-syntactic feature [animate], and this feature is part of a formal grammatical system that is vastly different from English¹. I will argue that the reason for the stark contrast ultimately rests with a language specific choice. Blackfoot uses participant-based features, including person and animacy, to perform the same functions as [tense] and other spatio-temporal features in English, and this gives rise to what appears to be a different kind of grammatical system. However, I will also argue that at an abstract level the two systems are in fact remarkably similar, because both kinds of features serve to fulfill same universal interpretive functions.

This paper is organized as follows: § 2 introduces some theoretical preliminaries about phrase structure, morpho-syntactic categories and their feature content. In §3 I describe the animacy-based noun classification system of Blackfoot, and introduce arguments against the majority view that this is a type of gender system. In §4 I develop new evidence for Wiltschko's (2009, 2012) alternative that Blackfoot has an animacy-based lexical aspectual system, showing that animacy plays a role in both nominal and verbal

¹Blackfoot is a Plains Algonquian language spoken in the western part of Canada and the United States. The analysis in this paper was presented at the Conference on Features in Phonology, Morphology, Syntax and Semantics: What are they? CASTL, University of Tromsø, the Department of English Literature and Linguistics, Bar Ilan University and the Haifa Language Forum, University of Haifa. A revised version was also presented in collaboration with Martina Wiltschko at GLOW 34 in Brussels. I thank the audiences and Martina for questions, comments and very helpful suggestions. This research was supported by a Marie Curie CIG grant to the author.



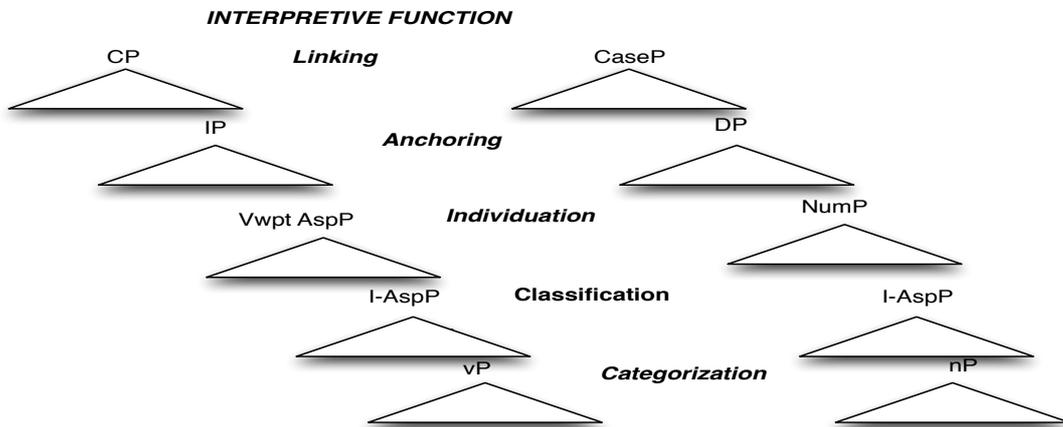
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aspectual classification. In §5, I briefly explore some consequences of this analysis for the verbal aspectual system of Blackfoot. §6 concludes the paper with a summary and questions for future research.

2. Constructing Syntactic Categories: The Universal Spine

I will begin by presenting my assumptions about universal and variable aspects of phrase structure, morpho-syntactic categories and their formal feature content. Following Ritter and Wiltschko (2009, 2014) and Wiltschko (2014), I assume that Universal Grammar makes available a universal spine - a hierarchical structure of abstract functional categories, each associated with an interpretive function, but no substantive content. Thus, in this model, features like [past] and [plural] are not universally grammaticized, i.e. they do not constitute universal categories. As shown in the schematic tree in (1), the interpretive functions of the functional categories are very general. For example, the category at the top of the spine is responsible for LINKING to the larger linguistic context - for embedded clauses this is linking within the sentence, for root clauses linking to the discourse, and for DPs, linking to the predicate.

(1)

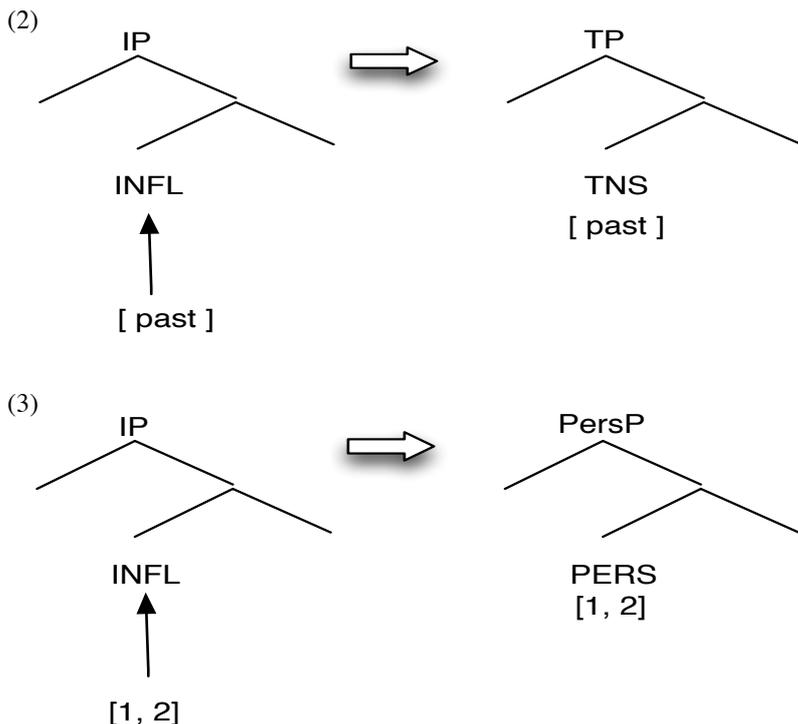


Pushing this idea to the limit, if categories lack specific substantive content then essentially the same set of interpretive functions will define both noun phrases and clauses. Ritter and Wiltschko (2014) hypothesize that this is why we find structural parallels between clauses and noun phrases. This paper focuses specifically on Inner Aspect, providing new evidence for Wiltschko's (2009, 2012) proposal that it is present in both the nominal and verbal spine, and that it has the same interpretive function in both contexts. I also adopt the view that 'little n' and 'little v' are categorizing heads responsible for turning category neutral lexical roots into nouns or verbs, cf. Marantz 1997, Marvin 2002, Lowenstamm 2007, among others.

Wiltschko (2014) describes language specific functional categories as constructed by associating specific morpho-syntactic features with abstract functional categories. Cross-linguistic variation arises because different languages use different features for the same interpretive function². This characterization elegantly captures the findings of Ritter & Wiltschko's (2009, 2014) study of two tenseless languages - Halkomelem, a Salish language, and Blackfoot, and the ways they differ from tense languages like English. The core insight is that TENSE is constructed when features like [past] associate

²This by no means exhausts the possibilities. A second source of variation derives from the fact that a given feature may in principle associate with different abstract categories of the spine. For example, research on number features in a variety of languages has demonstrated that the category of [plural] is subject to cross-linguistic variation, and that the interpretive function of this feature varies with its category, (cf. Borer 2005a, Lowenstamm 2007, Wiltschko 2008, Butler 2012, among others). See Wiltschko (2008) and Butler (2012) for discussion of other sources of cross-linguistic variation in the properties of such morpho-syntactic features, notably manner of association and valence.

with INFL, as schematized in (2). As for Blackfoot, it associates [person] features in INFL, thereby constructing a category that we call PERSON, as schematized in (3).



INFL is the anchoring category - it anchors the event situation to the utterance situation. Tense languages like English do this with times, specifying when, relative to the utterance or some other reference time, the event occurs. Person languages do this with participants, specifying who, relative to the utterance participants, is involved in the event.

Note that the features in (2) and (3) are represented as privative. I assume that all morpho-syntactic features are privative in the sense of Dresher (2013) and Cowper and Hall (2013), i.e. “only one pole of the opposition is linguistically active, but its absence is crucially interpreted as contrastively signifying the opposite pole,” (Cowper & Hall 2013). I also adopt Dresher’s (2013) convention for representing the absence of a formal privative feature [F] as (non-F). Thus, the absence of [animate] is always interpreted as inanimate, and will be represented here as (non-animate).

In this model, the category of a given functional feature will determine its interpretive function, the features it is in complementary distribution with, its syntactic position and its selectional restrictions³. The content of a given substantive feature will restrict the categorial options. In the next section I show how these assumptions inform the analysis of [animate] in Blackfoot.

3. Noun classification in Blackfoot

If a language has an animacy-based noun classification system it must have a formal feature [animate] in some nominal functional category. Blackfoot, like all members of the Algonquian family, is such a

³Ritter & Wiltschko (2009, 2014) and Wiltschko (2014) propose that, in addition to the variable substantive features discussed here, functional categories have an abstract universal feature [coincidence] for verbal categories, and [identity] for nominal ones. As nothing in the current analysis hinges on this detail, I omit it for ease of exposition. I also depart from their assumption that morpho-syntactic features are bivalent, e.g. [\pm past].

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language. In this section, I summarize the facts of the Blackfoot noun classification system, and then turn to the question of the morpho-syntactic category of [animate], the feature that I assume realizes this classification system. In order to address this question, it is necessary to determine the morpho-syntactic function of [animate], and the category that realizes this function. I discuss the evidence against the majority view that [animate] is a gender feature, and thus belongs to the category *n*. Next, I introduce Wiltschko (2009, 2012) alternative proposal that [animate] is an aspectual feature, and as such is associated with the category I(nner)-Aspect. I argue that Wiltscho’s proposal better captures the facts of Blackfoot and provide new evidence for this treatment.

3.1 Animacy-based Noun Classification in Blackfoot

In Blackfoot all nouns are classified as animate or inanimate, based on the form of the plural suffix that attaches to the noun itself and to the demonstrative. Without exception, plural animate nouns and their demonstrative modifiers take the suffix *-iksi* and plural inanimate nouns and their demonstrative modifiers take the suffix *-istsi*. The two classes are distinguished semantically as well since the inanimate class consists exclusively of nouns that refer to inanimate objects or abstract concepts, and the majority of animate nouns denote humans and other rational and animate beings. However, there is also a small set of exceptional animate nouns that refer to inanimate objects. These facts are summarized in Table 1, and illustrated in examples (4) and (5).

| | Animate | Inanimate |
|----------------------|--------------|---------------|
| Plural marker | <i>-iksi</i> | <i>-istsi</i> |
| Sentient beings | ✓ | ✗ |
| Non-sentient objects | ✓ | ✓ |

Table 1. Blackfoot noun classes

- (4) a. **amo-iksi** saahkímaapi-**iksi**⁴
 this-AN.PL boy-AN.PL
 ‘these boys’
- b. **amo-iksi** istoan-**iksi**
 this-AN.PL knife-AN.PL
 ‘these knives’
- (5) **amo-istsi** míín-**istsi**
 this-IN.PL berry-IN.PL
 ‘these berries’

Following Hockett (1958), Corbett (1991:1) defines gender as the division of nouns into classes based on the agreement patterns they give rise to. Thus, the fact that the classification of a given noun is determined on the basis of the form of the (noun itself and) modifying determiners might suggest that [animate] is a gender feature, much like the sex-based classification of well-studied Indo-European and Semitic languages. In fact, this is the most widely-held view of the Algonquian animate and inanimate noun classes, cf. Corbett 1991, Dahlstrom 1995, Darnell and Vanek 1976, Frantz 2009, Goddard 2002, Hockett 1966, Kramer 2012, Mathieu 2012. In the next subsection, I argue that there are good reasons to reject this view.

⁴Abbreviations: 1,2,3 = 1st, 2nd, 3rd person; 1,3:IN = 1st,3rd person subject acting on inanimate object; AI = animate intransitive; AN = animate; DEM = demonstrative; DIR = direct; EVID = evidential II = inanimate intransitive; IMPF = imperfective; IN = inanimate; INCL(usive); INV = inverse); INDEP = independent; INTNS = intensifier; INSTR = instrumental; OBV = obviative; PRN = pronoun; PROX = proximate; SG = singular; TA = transitive animate; TI = transitive inanimate.

3.2 Why Blackfoot [animate] should not be analysed as a gender feature

The problem with analysing Blackfoot' animacy-based classification system as a type of gender system is that it fails to capture the fact that participant-based features are pervasive in this participant-centered grammatical system⁵. Notably, it fails to account for two significant grammatical properties of the language - first, both the noun and the verb classification systems are based on animacy, and second, the presence or absence of the feature [animate] determines the availability of other inflectional features on both nouns and verbs. Neither of these properties characterizes sex-based gender systems.

3.2.1 Animacy-based verb classification in Blackfoot

I begin by showing the contribution of animacy to the verb classification system of Blackfoot, and other Algonquian languages. As first described by Bloomfield (1946), the verb classification system of these languages consists of four classes, based on transitivity and animacy. As summarized in Table 2, transitive verbs are subdivided based on the animacy of their object and intransitive verbs are subdivided based on the animacy of their subject.

| Verb Class | Classifying Argument | Animacy |
|--|----------------------|-----------|
| transitive animate (TA) | Object | Animate |
| transitive inanimate (TI) | Object | Inanimate |
| intransitive animate (AI) ⁶ | Subject | Animate |
| intransitive inanimate (II) | Subject | Inanimate |

Table 2. Algonquian verb classes

Verb class is signaled by a morpheme that appears at the right edge of the verb stem, known as a final in the Algonquianist tradition. Though there are a number of finals for each of the four verb classes, most finals are uniquely associated with just one class. Some examples of verb stems belonging to the different classes (with finals in bold) are given in Table 3 below.

| | TA | TI | AI | II |
|---|--------------------|--------------------|-------------------------|-----------------------|
| 'whet, sharpen' | <i>Iksisistsim</i> | <i>iksisiststo</i> | <i>iksisiststaki</i> | -- |
| 'roll (someone/something)' | <i>Inakat</i> | <i>inakatoo</i> | <i>Inakataki</i> | -- |
| 'regret the loss of/miss (someone/something)' | <i>Ikookimm</i> | <i>ikooki'tsü</i> | <i>ikooki'taki</i> | -- |
| 'be small' | | | <i>ohpokssi</i> | <i>Ohpokü</i> |
| 'be slow' | | | <i>iitsiksista'pssi</i> | <i>iitsiksista'pü</i> |
| 'disappear' | | | <i>sayinako</i> | <i>Sayinakoyi</i> |

Table 3. Blackfoot verb stems

Source: Frantz & Russell (1995)

I assume that TA and AI finals are specified for the privative feature [animate], while TI and II finals are (*non-animate*). At first glance, it might appear that finals are simply a kind of inflectional agreement, but there are at least three good reasons to reject this option. First, inflectional affixes are external to the verb stem, but the final is a stem internal morpheme. Second, Blackfoot verbs also bear agreement affixes, but these are realized as stem-external prefixes and suffixes (Frantz 2009). Finally, in some cases, verb class

⁵In this paper I focus on the category and function of [animate] in Blackfoot. Though there is no doubt that other members of the Algonquian family have a morpho-syntactic feature [animate] (as well as other participant-based features discussed here), it is also clear that the category and the function of these features is subject to micro-parametric variation. See for example, Brittain (2001), Johansson (2007, 2008), Mathieu (2012), Bliss (2013), Bliss, Ritter & Wiltschko (2014).

⁶Throughout this paper I adopt the conventional Algonquianist abbreviation for the intransitive animate class - AI.

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alternations give rise to changes in the meaning of the verb stem. For example, according to Frantz & Russell (1995: 50) the TA verb *iniiyimm* means ‘respect,’ its TI counterpart *iniyi'tsi* means ‘appreciate’ and the related AI verb *iniyi'taki* means ‘feel grateful, be appreciative or thankful’. Such meaning shifts are not unexpected if finals are part of the verb stem, but would be surprising if they were nothing more than gender agreement. Thus, both verbs and nouns are classified on the basis of animacy in these languages. This is in stark contrast to sex-based gender classification, which applies to nouns but not verbs.

3.2.1 Interactions between [Animate] and other types of inflection

A second challenge for the view that [animate] is a gender feature is the fact that it determines the availability of other features on both nouns and verbs. On nouns, [animate] interacts with a type of nominal inflection, known as proximate/obviate marking, which serves as a reference-tracking device (Frantz 2009, Bliss 2013).⁷ Proximate/obviative marking is subject to the following constraints: (i) Each sentence may have at most one proximate DP; all others are obviate, and (ii) only grammatically animate DPs may be proximate. In other words, [animate] nouns, regardless of whether they denote animate beings or inanimate objects may bear a proximate suffix, but this suffix never appears on (*non-animate*) nouns; (ii) Obviation and number marking compete for the same suffix position on the noun. As a result, the distinction between proximate and obviate is morphologically realized on singular DPs only. The proximate suffix *-wa* appears on [animate] singular DPs while the obviate suffix *-yi* appears on both [animate] and *non-animate* singular DPs. [Animate] plural DPs bear the suffix *-iksi*, regardless of whether they are proximate or obviate; (*non-animate*) plural DPs, like (*non-animate*) singular ones, are always obviate and bear the suffix *-istsi*. These facts are summarized in Table 4:

| Number | Obviation | Animate | Inanimate |
|----------|-----------|--------------|---------------|
| Singular | Proximate | <i>-wa</i> | |
| | Obviate | <i>-yi</i> | |
| Plural | | <i>-iksi</i> | <i>-istsi</i> |

Table 4. Nominal suffix paradigm

Evidence that [animate] plural DPs, like [animate] singular DPs, are either proximate or obviate may be gleaned from their interaction with a second type of verbal inflection known as direct/inverse (or theme) marking. Following Bliss (2005, 2013) and Bliss, Ritter and Wiltschko (2014), I assume that direct/inverse marking encodes point-of-view, and that it realizes the functional head Viewpoint Aspect. Direct/inverse marking identifies a point-of-view holder. A direct marker on the verb indicates that the subject is the point-of-view holder, and an inverse marker indicates that the object is the point-of-view holder. Like proximate/obviate marking, direct/inverse marking is constrained by animacy, though the details of the constraint are significantly different: Whereas all grammatically animate DPs may be proximate, only subjects or objects that are both grammatically and semantically animate may trigger direct or inverse marking on the verb, cf. Bliss (2005, 2013).

To the best of my knowledge no language makes comparable distinctions between masculine nouns and feminine nouns. For example, no language permits only masculine nouns to be plural, or only feminine DPs to be topics or point-of-view holders. Thus, this asymmetry between the animate and inanimate noun classes with respect to other types of verbal and nominal inflection is also in stark contrast to the relationship between sex-based gender classes and other types of inflection.

⁷There seems to be variation in the function of proximate/obviate marking across Algonquian languages, but consistently the proximate DP has a distinct discourse determined role, e.g. topic, or point-of-view holder, cf. Bliss 2013, and references cited therein. With respect to Blackfoot, Genee 2009 analyses proximate DPs as topics and obviate DPs as non-topics.

3.3 Summary

I have provided two kinds of arguments against the view that animacy is a type of gender in Blackfoot, and other Algonquian languages. I showed that animacy in these languages has properties that are unlike those of sex-based gender in a language like French or Hebrew. In particular, I showed that animacy underlies not only the nominal classification system, but also the verbal one, and that whether a noun is animate or inanimate has significant morpho-syntactic consequences. We observed that proximate marking, another type of nominal inflection, is possible with animate nouns but not inanimate ones, and that direct/inverse marking, another type of verbal inflection, is possible with animate arguments but not inanimate ones. These differences are summarized in Table 5.

| | Sex-based classification | Animacy-based classification |
|--|--------------------------|------------------------------|
| Intrinsic to nouns only (agreement on Vs, As, Ds etc.) | ✓ | ✗ |
| Other nominal inflection constrained by noun class specification | ✗ | ✓ |
| Verbal inflection constrained by noun class specification | ✗ | ✓ |

Table 5. Comparison of sex-based gender classification and animacy-based classification

These facts indicate that, unlike sex-based gender, animacy is pervasive in the grammar of Blackfoot. Treating animacy as a special kind of gender simply misses this fundamental fact. In the next section, I turn to an alternative characterization of animacy that captures this difference, and provides insight into the properties described here.

4. [Animate] as Inner Aspect

Wiltschko (2009, 2012) was the first to observe that animacy in Blackfoot has very un-gender-like properties. She then went on to develop an analysis that sought to explain why. Her hypothesis is that [animate] is an aspectual feature that formalizes both lexical verbal aspect (*Aktionsarten*) and lexical nominal aspect (*Seinsarten*, cf. Rijkhoff 1991). In this section, I summarize Wiltschko's analysis and provide additional motivation for analyzing [animate] as an aspectual feature.

4.1 Wiltschko (2009, 2012)

Wiltschko (2009, 2012) develops an alternative view of Blackfoot [animate]: This is not gender (a feature of *n*), but rather an aspectual feature associated with I(nner)-Aspect, a syntactic category that is in the first phase of *both* nominal and verbal spines. Wiltschko's insight is that [animate] is the Blackfoot counterpart of a feature that serves to formalize the lexical aspectual classification of both *nP* and *vP* predicates in tense languages. Following Jackendoff (1991), she formalizes this feature as [bounded]. As a nominal aspectual feature, [bounded] serves to distinguish between count and mass nouns. As a verbal aspectual feature, it realizes the telic-atelic distinction. Wiltschko hypothesizes that the feature [animate] similarly underlies the lexical aspectual classification of both nouns and verbs in Blackfoot, resulting in an aspectual contrast between grammatically animate and grammatically inanimate nouns, and between verbs with a classifying animate participant, and those with a classifying inanimate one.⁸

⁸As noted in §2, I assume that all morpho-syntactic features are privative. Applying this assumption to the feature [bounded], count nouns are [bounded] and mass nouns are contrastively interpreted as (*non-bounded*); similarly, telic verbs are specified as [bounded] and atelic verbs are contrastively (*non-bounded*). Similarly, animate nouns and verbs with a classifying animate participant are [animate] while inanimate nouns and verbs with a classifying inanimate participant are (*non-animate*).

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| | Feature | Nominal I-Asp | Verbal I-Asp |
|---------------|-----------|--------------------|-----------------------|
| English, etc. | [bounded] | count-mass | telic-atelic |
| Blackfoot | [animate] | animate –inanimate | animated-non-animated |

Table 6. Features of I-Asp

Extending proposals by Travis (2005) and MacDonald (2008) to the nominal spine, Wiltschko hypothesizes that I-Asp appears immediately above category-forming *n*P and *v*P, as schematized below:

- (6) *Nominal I-Aspect*
 $\dots [{}_{\text{NumP}} \text{Num} \quad [{}_{\text{nP}} \quad \text{n} \quad [{}_{\text{I-AspP}} \quad \text{I-Asp} \quad [{}_{\text{nP}} \quad \text{n Root}]]]]$
↑
[animate/bounded]
- (7) *Verbal I-Aspect*
 $\dots [{}_{\text{NumP}} \text{Vwpt} \quad [{}_{\text{vP}} \quad \text{v} \quad [{}_{\text{I-AspP}} \quad \text{I-Asp} \quad [{}_{\text{vP}} \text{v Root}]]]]$
↑
[animate/bounded]

Wiltschko’s hypothesis makes clear predictions about complementary feature content. If nominal I-Asp is specified for [animate], then it is not simultaneously specified for [bounded], and the language should have no grammaticalized count-mass distinction. Similarly, if verbal I-Asp is specified for [animate], it is not specified for [bounded], and the language should have no grammaticalized telic-atelic distinction. In the next subsection I argue that both predictions are borne out by the data.

4.2 *Blackfoot Inner Aspect is NOT [bounded]*

4.2.1 *Nominal I-Asp is NOT [bounded] - no count-mass distinction*

Wiltschko (2009, 2012) shows that Blackfoot lacks a grammaticalized count-mass distinction. Notably, she observes that a range of diagnostic grammatical properties that distinguish count nouns from mass nouns in languages like English are simply unattested in Blackfoot. Here I summarize four of her diagnostics: First, whereas only count nouns can readily be pluralized in English (e.g. *eggs*, but not **sugars*), almost all nouns can be pluralized in Blackfoot including nouns that refer to substances (e.g. *náápiiniivan-istsi* ‘sugars’ and *áápaistsi* ‘bloods’).⁹

Second, English has determiners and quantifiers that are sensitive to the count mass distinction, such as plural demonstratives, the indefinite article *a*, and the quantifiers *much* and *many*; Blackfoot does not. There are no articles, and all demonstrative stems are compatible with any noun, cf. Frantz (2009), Bliss (2013) for discussion. In Blackfoot quantifiers are realized as verbal prefixes, and like demonstratives, are not sensitive to the count/mass distinction. For example, Frantz & Russell’s (1995) *Blackfoot Dictionary of Stems, Roots and Affixes* defines the verbal prefix *immak* as indicating ‘few, rare, less than normal’ (F&R 1995: 46) and translates *iiksskáóonnatohsimmiaawa* as ‘they are much fewer, less’ (F&R 1995: 173).¹⁰

⁹In Blackfoot when a noun referring to a liquid or granular substance is pluralized, it can only refer to a plurality of some contextually determined unit. For example, *áápaistsi* ‘bloods’ can refer to drops or bags or pools of blood. In this respect, Blackfoot differs from English, where pluralized mass nouns may only refer to kinds or conventionalized units. For example, *coffees* can refer to kinds of coffee or cups of coffee, but not pots, pools or drops of coffee. See Kim and Ritter (2014) for discussion and analysis of Blackfoot [plural] as a modifying feature, in the sense of Wiltschko (2008).

¹⁰An anonymous reviewer correctly points out that the lack of a count/mass distinction on determiners and quantifiers should not be taken as conclusive evidence that the language lacks a count/mass distinction, but simply as a lack of evidence that it has one. Thus, this fact is compatible with the hypothesis defended here, but needs to be supplemented by other arguments adduced here.

Third, English combines mass nouns with classifiers in order to count them, e.g. *two drops of blood*. Blackfoot, on the other hand, has no classifiers, and simply combines the mass noun with a numeral, as shown in (8):

- (8) a. *nitoohkoonimh niisitoyi mistsis*
 nit-ohkooni-m-hp-yi niisitoyi mistsis
 1-find.ti-1:inan-indep-sg five wood
 ‘I found five pieces of wood.’ (Wiltshcko 2012: 155)
- b. *natokayi a’apannists iihtsokina*
 two aáápan-istsi iiht-sokin-aa
 two blood-pl inst-treat.ta-dir
 ‘There were two blood (bags) used to treat him.’ (Wiltshcko 2012: 155)

Finally, in English, the availability of bare NP arguments is correlated with boundedness, but this is not the case for Blackfoot. As illustrated in (9), bare mass and bare plural NP arguments, which are (*non-bounded*), are acceptable in English; bare singular count NP arguments, which are [bounded], are not:

- (9) a. I ate fish/soup/rice/bread/crackers. (*non-bounded*)
 b. *I ate cookie/sandwich/muffin/bun. [bounded]

Wiltshcko points out that Blackfoot transitive (TA and TI) verbs never allow a bare NP object, regardless of the referent. As illustrated in (10), the object of a TA or TI verb must be preceded by a demonstrative.

- (10) a. *naowatsiw *(amo) mamii*
 na-oowat-yii-wa amo mamii
 evid-eat.ta-dir-3sg dem fish.an
 ‘S/he ate *(this) fish.’
- b. *naowatoom *(ani) akooapis*
 na-oowatoo-m-wa ani akooapis
 evid-eat.ti-3:in-3sg dem soup.in
 ‘S/he ate *(that) soup.’

Bare NP arguments are attested in Blackfoot, but strikingly their availability correlated with the morphological transitivity of the verb, not the boundedness of the argument.¹¹ Despite the label, animate intransitive (AI) verbs sometimes take objects, but these objects are either bare (number neutral) nouns or plural-marked nouns (Glougie 2000, Bliss 2013), and, as is demonstrated by the examples in (11), may denote either substances or individuals.

- (11) a. *naoyiw (akooapis)*
 na-ooyi-wa akooapis
 evid-eat.ai-3sg (soup)
 ‘S/he ate (soup).’
- b. *Náyiisakiwa ponokáóómitaa*¹²
 na-yiis-aki-wa ponokaomitaa
 evid-feed-ai-prox horse
 ‘He fed a horse/horses.’ (Bliss 2013: 107 (63a))

¹¹ Bliss (2013) observes that Blackfoot AI verbs allow both bare nouns or nouns inflected with a plural suffix (either *-iksi* or *istsi*, depending on whether the noun is animate or inanimate). Importantly, both proximate *-wa* and obviative *-yi* are impossible in this context. Bliss analyses this as evidence that *-wa* and *-yi* are associated with a higher syntactic head than the plural suffix, even though they compete for the same morphological spell-out position.

¹² Like nouns, verbs may bear an interpretable proximate/obviative suffix. Bliss (2013) proposes that verbal *-wa* marks matrix clauses, as is the case in 0, and that its obviative counterpart (*-yini*) marks embedded clauses.

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The clear conclusion to be drawn from this cluster of facts is that there is no grammaticalized count-mass distinction in Blackfoot. Following Wiltschko, I interpret this as evidence that nouns in this language are not specified for the aspectual feature [bounded]. Assuming that the same aspectual feature is used to classify both nouns and verbs leads to the expectation that [bounded] will also play no role in aspectual classification of verbs. In the next subsection I summarize Ritter & Rosen's (2010) evidence that this is indeed the case.

4.2.2 Verbal I-Asp is NOT [bounded] - no telic-atelic distinction

It has long been observed that transitivity alternations involving the addition or suppression of internal arguments are often accompanied by a shift in lexical aspectual classification, e.g. Verkuyl 1972, 1993, Dowty 1979, Tenny 1992, 1994, Krifka 1992, Borer 2005b, Ramchand 2008, Smith 1997, among many others. The reason for this is that "the property of temporal boundedness is compositional, being determined by a combination of certain properties of the verb and the direct object (and in the case of goal phrases, other material in the verb phrase as well.)" (Tenny 1995: 230). Thus, one might reasonably expect that shifts between TA/TI and AI/II verbs in Blackfoot would give rise to changes in the boundedness specification of the predicate. In other words, one might expect that related TI/TA with a referential DP object and AI/AI+O verbs, which have no DP object, would contrast in that the former are telic, but the latter atelic. However, this expectation is not borne out by the facts.

Adapting standard telicity tests to Blackfoot, Ritter & Rosen 2010 found that the alternation between transitive (TA/TI) and intransitive (AI/AI+O) verbs does not signal a shift between telic and atelic predicates.¹³ They observed that both transitive (TA/TI) and intransitive (AI/AI+O) verbs are acceptable with the aspectual preverb *iksist* 'finish', and with the combination of *ai'tamáak* 'almost' and *iksist* 'finished', indicating that telic accomplishments occur in all of these classes. They also replicated Dunham's (2007) study, which found that AI+O verbs give rise to an imperfective paradox, indicating that this class of verbs includes accomplishments, a subclass of telic predicates. In that study speakers were presented with pairs of sentences that differed only in the composition of the verb - one included the imperfective prefix *á-*, while the other did not. When *á-* is added to an AI/AI+O predicate the result describes an event in-progress, and cannot refer to a culminated event, as shown in (12)a. However, when it is not present, the same predicate can only describes a culminated event, as in (12)b.

- (12) a. *anna Joel á'paistotáki pisátsasski*
 ann-a Joel á'p-á-istotaki pisátsáisski
 dem-an.sg Joel around-**impf**-make.ai flower.in
 'Joel is (in the process of) making a flower.'
 Bad after completion of flower, good during construction of flower
- b. *anna Joel á'pistotáki pisátsasski*
 ann-a Joel á'p-istotaki pisátsáisski
 dem-an.sg Joel around-make.ai flower.in
 'Joel made a flower.'
 Good after completion of flower, bad during construction of flower (Dunham 2007)

Summarizing the discussion, the evidence adduced in this section indicates that Blackfoot makes no formal grammatical distinction between count and mass nouns, or between telic and atelic predicates. Assuming that such distinctions are due to the presence or absence of [bounded] in nominal and verbal I-

¹³Since there is no distinction between time frame adverbials (in X time) and durative ones (for X time) in Blackfoot, this test was not included in their study. There is also not ambiguity with 'almost'. Rather, Blackfoot has two verbal prefixes meaning 'almost' - *iimat-/omat-* and *ai'tamáak* -. The first is unambiguously interpreted as 'almost start V-ing'. The interpretation 'almost finished' requires a combination of *ai'tamáak*- 'almost' and the aspectual preverb *iksist* 'finished', so the question they focused on was whether AI/AI+O verbs were compatible with 'almost finished'.

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- b. *Náihkiitaawa napayinists.*
 na-ihkitaa-wa napayin-istsi
 evid-bake.ai.prox bread.pl
 ‘She baked breads.’ (Bliss 2013: 125 (102))
- c. **Nitáikskimaa ponokáwa.*
 nit-a-ikskimaa ponoka-wa
 1-impf-hunt.ai elk-prox
 Intended: ‘I am hunting an/the elk (proximate).’ (Bliss 2013: 119 (90b))
- d. **Nitáikskimaa ponokáyi.*
 nit-a-ikskimaa ponoka-yi
 1-impf-hunt.ai elk-obv
 Intended: ‘I am hunting an/the elk (obviative).’ (Bliss 2013: 119 (90c))

Bliss offers two reasons for analysing *-wa* and *-yi* as Link/Case, i.e. as the head of the highest nominal functional category, rather than D. First, she proposes that they indicate the role of the DP in the larger discourse or clause, and as such serve a linking function. Second, *-wa* and *-yi* also associate with Link/Comp, the highest head position in the clausal spine – albeit with different content. (See, for example, the verb in 0b.) Bliss offers good motivation for analysing verbal *-wa* and *-yi* as Link/Comp, and asserts that, in the absence of evidence to the contrary, nominal *-wa* and *-yi* should also be analysed as occupying the highest position in the nominal spine.

Having established the category of these suffixes, I turn to the question of their morpho-syntactic feature specification. The fact that at most one third person singular DP in a sentence may bear the proximate suffix *-wa*, and that all others are obviative suggests that proximate is marked relative to obviative. Consequently, I posit a privative feature [proximate] in Link/Case to capture the contrast between the obviation suffixes. The proximate suffix *-wa* bears this feature, and the obviative suffix *-yi* is contrastively interpreted as (*non-proximate*).

Given that *-wa* and *-yi* marked DPs are always interpreted as singular, I further assume that Num in the context of these suffixes is interpreted as (*non-plural*).¹⁴ The availability of the plural suffixes in a context (AI+O) where the obviation suffixes are impossible indicates that *-iksi* and *-istsi* are specified for [plural], but not [proximate]/(*non-proximate*). The feature content of Num and Link/Case for each of these suffixes is summarized in Table 8.

| Morphemes Category | <i>-wa</i> | <i>-yi</i> | <i>-iksi</i> | <i>-istsi</i> |
|--------------------|-----------------------|--------------------------|--------------|---------------|
| Link/Case | [proximate] | (<i>non-proximate</i>) | --- | --- |
| Num | (<i>non-plural</i>) | (<i>non-plural</i>) | [plural] | [plural] |

Table 8. Nominal suffixes and Nominal Functional Categories

With these assumptions in place, let us now explore the interaction between the two pair of suffixes and the content of I-Asp. Consider first the plural suffixes. We have already seen that, in the absence of a grammaticalized count-mass distinction, [plural] is ubiquitous in Blackfoot. It appears productively on all classes of nouns – count and mass, animate and inanimate.¹⁵ Thus, the availability of a plural marking is

¹⁴ It may be that there is a null singular morpheme, in Num or that *-wa* and *-yi* are portmanteau morphemes realizing Num and Link features. In the latter case, these suffixes would merge in Num, and subsequently move to Case/Link, or they would span these functional categories, in the sense of Williams (2004). Nothing in the present paper hinges on the choice between these two alternatives.

¹⁵ Rhodes (1990) argues that Ojibwe, another related language, also lacks a grammaticalized count-mass distinction, based on similar considerations. See also Corbett (2000) for discussion. However, Mathieu (2012) rejects this position, based on evidence that the language has two productive singulativization processes, i.e. processes that derive count nouns from inherently mass terms. Interestingly, one of these processes involves the reclassification of inanimate nouns as animates, which Mathieu analyses as gender re-assignment. There is no evidence of a comparable singulativization process in

not constrained by the content of I-Asp. However, as Wiltschko (2012) points out, the form of plural marking in Blackfoot does depend on the content of I-Asp: all and only plural [animate] nouns take the suffix *-iksi*, and all and only plural (*non-animate*) nouns take *-istsi*. This constitutes a morpho-syntactic agreement relation between Num and I-Asp.

Next consider the obviation suffixes. As noted above, only [animate] DPs can bear either *-wa* or *-yi*; (*non-animate*) DPs, on the other hand, may bear only *-yi*. I attribute this to the fact that obviation on [animate] DPs is formally represented by the contrastive presence or absence of the interpretable feature [proximate], while (*non-animate*) DPs have only the default specification (*non-proximate*), as summarized in the following table:

| | I-Asp | Link/Case | Example |
|-----------------|------------------------|---|-------------------------------------|
| animate nouns | [animate] | [proximate] or (<i>non-proximate</i>) | <i>imitaawa/imitaayi</i> ‘dog’ |
| inanimate nouns | (<i>non-animate</i>) | default (<i>non-proximate</i>) | <i>owááyi</i> ‘egg’/* <i>owááwa</i> |

Table 9. [animate] and [proximate]

I interpret these facts as evidence of a selectional restriction imposed by [proximate] in Link/Case on its complement, DP, and indirectly on I-Asp. Since demonstratives agree in number and animacy with the noun they modify this results in [proximate] selecting a DP that acquires its [animate] feature via agreement with I-Asp. Thus, the content of the higher nominal functional categories, Link/Case, D and Num all depend in part on the content of nominal I-Asp.¹⁶

4.3.2 Clausal functional heads and verbal I-Asp

In § 3.2.2 I noted that there is a dependency relation between the content of verbal I-Asp and direct/inverse marking, and that direct/inverse marking realizes Point-of-View, the participant based realization of the functional category Viewpoint Aspect (cf. Bliss 2005, 2013, Bliss, Ritter and Wiltschko 2014). Here I demonstrate that the relationship between direct/inverse marking and [animate] in verbal I-Asp is similar to the relationship between obviation marking and [animate] in nominal I-Asp. I will begin with a brief introduction to direct/inverse marking, and then discuss the evidence for this claim in more detail.

Direct/inverse marking, together with agreement marking, indicates which argument is the subject and which is the primary object of a morphologically transitive verb. In Blackfoot transitive verbs bear up to three different agreement affixes that reflect person and number and obviation status of both the subject

Blackfoot, and though reclassification exists, it is generally used for derivation, of related nouns. Thus, the status of [animate] as a gender or an aspectual feature may be a source of microparametric variation among Algonquian languages. I leave exploration of this possibility for future research.

¹⁶In current work (Kim & Ritter (2014), Wiltschko & Ritter (2014)) my colleagues and I are exploring an alternative categorial analysis of the nominal suffixes in which the (in)animate plural suffixes *-iksi/-istsi* are associated with iAsp, singular (*non-proximate*) *-yi* with Num, and proximate *-wa* with D, as shown in (i)

(i) [DP D [NumP Num [nP n [I-AspP I-Asp [nP n Root]]]]]
 ↑ ↑ ↑
 -wa/0 *-yi/0* (*-iksi/-istsi*)

This structure retains Bliss’s insight that the plural markers are associated with a lower head than either *-wa* or *-yi*. The primary innovation is that [plural] is recast as a modifying feature of I-Asp, in the sense of Wiltschko (2008), permitting a straightforward account of the fact only that plural suffixes are specified for animacy, and for the fact that in AI+O contexts, plural contrasts with number neutral bare nouns. Importantly, like (13), the structure in (i) is also compatible with the evidence adduced above that proximate *-wa* imposes a selectional restriction on its complement, and indirectly on I-Asp.

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and primary object. However, the content of the different affixes is determined by the person hierarchy in (15), rather than by grammatical function.¹⁷

(15) 1st / 2nd > 3proximate > 3obviative

As a result, a verb that describes an interaction between any pair of persons on this hierarchy will have the same set of agreement affixes, regardless of which is the subject and which is the primary object. The function of direct/inverse marking is to distinguish between the two interpretive options. Direct marking indicates that the argument that is more highly ranked on the person hierarchy is the subject; Inverse marking indicates that it is the primary object. Observe, for example, that the bolded agreement markers on the transitive animate (TA) stem *waakomimm* ‘love’ in (16)a and (16)b are identical – both have the same first person prefix and third person proximate suffix.¹⁸ However, the underlined direct/inverse suffixes differ: The first example has the direct marker *-a*, indicating that the first person argument is the subject, and the second has the inverse marker *-ok*, indicating that it is the object.

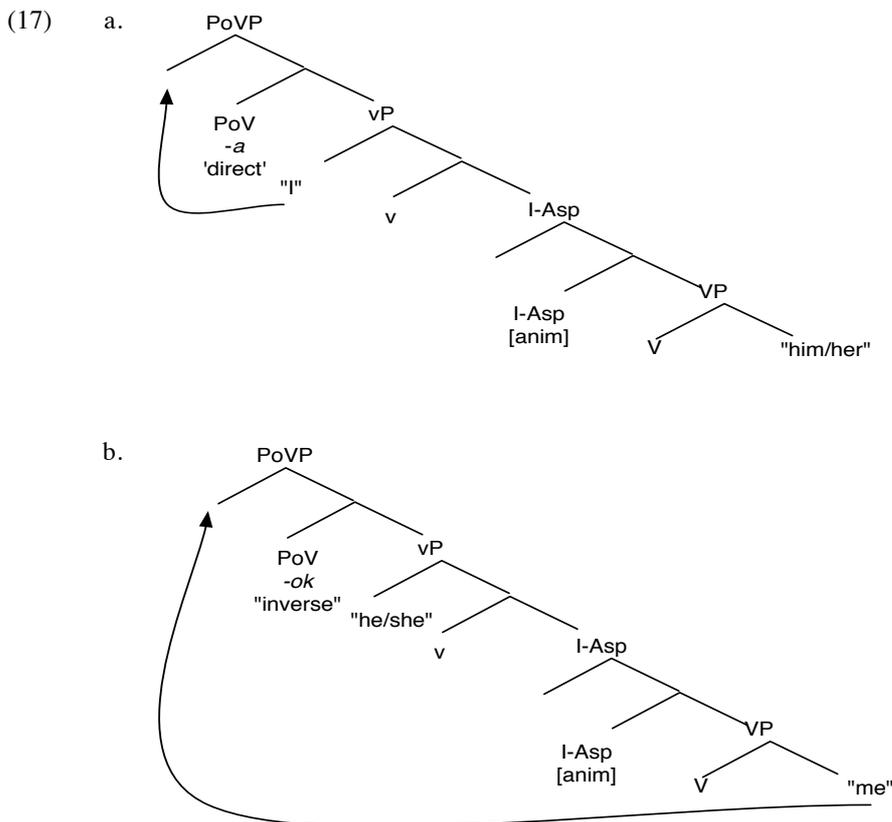
- (16) a. ***n̄sikákomimmáwa***
 nit-ik-waakomimm-a-wa
 1-intns-love.ta-dir-3prox
 ‘I love him/her.’ (Adapted from Frantz 2009: 56(a))
- b. ***n̄sikákomimmoka***
 nit-ik-waakomimm-ok-wa
 1-intns-love.ta-inv-3prox
 ‘S/he loves me.’ (Adapted from Frantz 2009: 56(c))

Bliss (2005) analyses the more highly ranked argument identified by the direct/inverse marker as the Point-of-View holder, i.e. as a semantically animate argument whose perspective on the event is formally encoded in the clause. On her analysis direct/inverse marking is realized in the head of a functional category that she labels Point-of-View Phrase (PoVP). The PoV holder is an argument DP that undergoes movement to Spec, PoVP to check an animacy-based agreement feature of this head. Bliss, Ritter and Wiltschko (2014) propose that PoVP is the Blackfoot counterpoint of the functional category, variously known as Viewpoint Aspect, Outer Aspect or simply Aspect, that encodes a temporal perspective on the event in languages such as English, Russian and Dëne Sų́łíné (e.g. Smith 1997, Mezhevich 2008, Wilhelm 2007). Both PoV and temporal Aspect are language specific instantiations of Viewpoint Aspect, the functional category that appears immediately above the lexical layer. The structures in (17) show the results of this analysis applied to the examples in (16):¹⁹

¹⁷Agreement affixes include (a) a verb initial person prefix, (b) a number suffix that appears immediately after the direct/inverse marker, and appears in the context of first and second person plural DPs only and (c) a number and obviation suffix that specifies plural number or obviation status of third person DPs. The hierarchy in 0 abstracts away from the fact that for verbs that describe an event between a first and second person arguments, second person outranks first for purposes of the person prefix, but first person outranks second for purposes of the number suffix. See Frantz (2009), Bliss, Ritter & Wiltschko (2014) and Bliss (2013) for discussion.

¹⁸The difference in the form of the agreement suffix in the first line of the example (*-wa* vs *-a*) is due to the application of a morpho-phonological adjustment rule that deletes the glide when the suffix is immediately preceded by a vowel.

¹⁹I assume that the object of a TA verb undergoes a series of local movements, notably to Spec, I-Asp and then to Spec, vP, but abstract away from this detail here.



Significantly, inverse marking is limited to clauses with TA verbs, but direct marking is possible in clauses with either TA or transitive inanimate (TI) verbs. The reason that direct marking is an option for both TA and TI verbs is that PoV holders must be semantically animate, and Blackfoot imposes a strict animacy requirement on the external argument of morphologically transitive verbs (Frantz 2009). Thus, the subject is always a potential PoV holder. However, inverse marking has a more limited distribution because it requires both a semantically animate subject and a semantically animate object. This is only possible with TA verbs.²⁰ Since TI verbs select an inanimate object, the only potential PoV holder is the subject, and, thus, the only option for PoV is direct marking, as illustrated in 0.²¹

- (18) *nitáákomi'tsii'pa*
 nit-waakomi'tsi-'p-wa
 1-like.TI-dir-3prox
 'I took pleasure in it.' (Frantz & Russell 1995: 188)

Extending to PoV the assumption that the formal morpho-syntactic feature content of functional categories is privative, I analyse inverse marking (the marked option) as specified for the feature

²⁰For the same reason TA verbs that select objects that are grammatically animate but semantically *inanimate* also only occur with direct marking, cf. Bliss (2005).

²¹Direct and inverse markers have different forms depending on (a) the person specification of the subject and primary object; (b) whether the verb is TA or TI and (c) clause type, cf. Bliss, Ritter & Wiltschko (2014) and Bliss (2013). Thus, despite the difference in morphology, -a on the TA verb in 0a and -'p on the TI verb in 0 could both be analysed as direct markers because they both indicate that the subject is the PoV holder.

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[inverse], and direct marking (the unmarked option) as (*non-inverse*).²² Since TA verbs have the feature [animate] in verbal I-Asp, and TI verbs do not, the facts discussed in this section point to a dependency between [inverse] and [animate], summarized in the following table:

| | I-Asp | PoV | Example |
|----------|------------------------|-------------------------------------|----------------|
| TA verbs | [animate] | [inverse] or (<i>non-inverse</i>) | (16a) or (16b) |
| TI verbs | (<i>non-animate</i>) | default (<i>non-inverse</i>) | (18) |

Table 10 [animate] and [inverse]

Like [proximate] in Link/Case, [inverse] in PoV is only compatible with I-Asp that is specified for [animate]. I suggest that this is another example of a selectional restriction imposed by a higher functional head on its complement, and indirectly on I-Asp. In this case, I-Asp requires an [animate] object; vP the complement of PoV gets its [animate] specification when the [animate] object moves through Spec, vP on its way to Spec, PoVP.

4.4 Summary

Summarizing the discussion in this section, we have seen that the hypothesis that [animate] is a feature of I-Aspect sheds light on the significant differences between Blackfoot noun classification and familiar sex-based gender systems. It also accounts for the fact that [animate] underlies the classification of verbs as well as nouns in Blackfoot, whereas [bounded] is relevant to the aspectual classification of neither. The pervasiveness of participant-based features (and concomitantly the lack of spatio-temporal features) in Blackfoot is attributable to interpretive dependencies among functional categories.

4. Consequences for verb classification

The hypothesis that the grammar of Blackfoot is organized around participants, rather than times leads to the expectation that the counterparts of tense, viewpoint aspect and verbal lexical aspect will encode qualitatively different semantic contrasts. The investigation of verbal inflection has borne out this prediction with respect to tense (Ritter & Wiltschko 2009, 2014) and viewpoint aspect (Bliss 2005, Bliss, Ritter & Wiltschko 2014). In this section I offer some speculations that this is also the case for lexical aspect (*Aktionsarten*).

Louie (2008), Wiltschko (2009, 2012) and Ritter (2014) all share the intuition that the Bloomfield verb classes underlie the Blackfoot counterpart of the Vendler-Dowty verb classes. The two aspectual classification systems are summarized in the tables below. The temporal-based aspectual classification system in Table distinguishes eventualities based on grammaticalized property of times. In this system a delimiting aspectual argument, licensed by [bounded] in I-Asp, may be identified on the basis of its role in the temporal structure of the event.

| Verb Class | Process | Telic | I-Aspect |
|-------------------|----------------|--------------|------------------------|
| accomplishments | yes | yes | [bounded] |
| activities | yes | no | (<i>non-bounded</i>) |
| achievements | no | Yes | [bounded] |
| states | No | No | (<i>non-bounded</i>) |

Table 11. Aspectual verb classes for English, etc.

²²This assumption is consistent with Klaiman's (1992) characterization of inverse as a universally marked option, and with the fact that it has a more limited distribution.

In contrast, participant-based aspectual classification system in Table 12 distinguishes eventualities based on grammaticalized properties of participants. (Note that the aspectual classes in Table 12 bear the labels of the Bloomfield classes that typically represent them.) In this system a delimiting aspectual argument is identified on the basis of its role in the performance of the event, and licensed by [animate] in I-Asp.

| Verb Class | Transitivity | Animated | I-Aspect |
|------------------------|--------------|----------|------------------------|
| transitive animate | yes | yes | [animate] |
| transitive inanimate | yes | No | (<i>non-animate</i>) |
| intransitive animate | no | yes | [animate] |
| intransitive inanimate | no | No | (<i>non-animate</i>) |

Table 12 Bloomfield verb classes for Blackfoot

In Ritter (2014) I conjecture that the Bloomfield participant-centered system and the Vendler-Dowty time-centered system are alike in that at an abstract level the classification of eventualities is based on the same two properties - extent and a delimiting argument. In a time-centered system extent distinguishes between instantaneous events that occur at a single point in time and those that occur over an extended period of time. In a participant-centered system, extent distinguishes between events that have a single thematic argument and those that have more than one.²³ A delimiting argument is one that serves to mark the temporal or experiential bound of the event. In the time-based Vendler-Dowty system, these two properties determine a fundamental split between states and events – events have either extent, a delimiting argument or both; states have neither. In the participant-based Bloomfield system, there is an analogous split between eventualities that have only a single inanimate argument on the one hand, and eventualities that have at least one semantically animate argument, on the other. The first class has neither extent nor a delimiting argument, and the remaining three classes have extent, a delimiting argument or both.

In the Vendler-Dowty system, events with extent are events that involve a process, i.e. events that unfold over a period of time; events without extent are punctual. This gives rise to the contrast between accomplishments and activities on the one hand, and achievements on the other (Vendler 1967). For the Blackfoot system, I suggest that events with extent are events that have (at least) two distinct arguments; events without extent have only one. This gives rise to the contrast between semantically transitive and semantically intransitive predicates. The former class includes TA, TI and arguably AI+O verbs, while the latter includes II verbs as well as canonical AI verbs that have no object. As noted above, Blackfoot imposes a strict semantic animacy constraint on the external argument of transitive verbs (Frantz 2009). These arguments are overwhelmingly agents or agent-like experiencers (Kim 2013a). Thus, a Blackfoot predicate has extent if it describes an eventuality between an animate being whose action on - or reaction to - some other entity brings about the event.

Similar observations can be made with respect to the second property that underlies the two aspectual classification systems, the presence or absence of a delimiting argument. In the Vendler-Dowty system, this is the argument that serves to identify the inherent termination point of a telic event (an accomplishment or achievement), and in the case of accomplishments bears an aspectual role, such as incremental theme (Dowty 1979) or terminus (Tenny, 1995). An incremental theme is an object, such as *the cookie* in (19)a, that undergoes a change that can be mapped to the time trace of a bounded event. Progress through the event of eating the cookie can be measured by observing the changes in the cookie, and the endpoint is reached when the cookie is completely consumed. Thus, the temporal boundedness of the event correlates with the spatial boundedness of the object. The goal PP *to the store* in (19)b is a

²³ Extent is similar to Jackendoff's (1991) notion DIMENSIONALITY, and is intended to capture the common property that characterizes both events that unfold over a period of time in a temporal language and events that unfold between two or more arguments in a participant-based language. I use the term thematic argument here to refer to arguments that denote participants in the event, and to exclude situation (event) arguments from consideration.

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terminus, but not an incremental theme. In this example, *the store* “participates in defining the temporal endpoint of the event by naming the spatial terminus that correlates with the event’s temporal terminus” (Tenny 1995: 381). In this case progress through the event correlates with progress through a path that ends at the store. That both examples denote delimited events is clear from the fact that both are compatible with a time frame adverbial PP.

- (19) a. John ate the cookie in 10 minutes/*for 10 minutes.
 b. John ran to the store in 10 minutes/*for 10 minutes.

Incremental themes are objects that have the same I-Asp content as the predicate – both are [bounded]. I suggest that the Blackfoot counterpart of an incremental theme is an object that shares the [animate] specification of the predicate, and whose experience of the event determines its termination. However, an experiential delimiter will be unlike an incremental theme, and like a terminus, whenever the eventuality involves no outward change in the object. This is the case for sources, goals and benefactives of (di)transitive verbs, all of which are obligatorily realized as the primary object of the morphologically TA predicate they belong to (Bliss 2010). Recall that such objects determine agreement and direct/inverse marking on the verb.

- (20) a. *Nitsúkamo’satoka ana Rosie ihtohpomo’pi.*
 nit-ikamo’s-at-ok-wa an-wa Rosie ihtohpomo’pi
 1-steal-ta-3:1-prox dem-prox Rosie money
 ‘Rosie stole from me that money.’ (Bliss 2010 (10c))
- b. *Ana Leo nitsapóhtomoka.*
 an-wa Leo nit-sapoht-omo-ok-wa
 dem-prox 1-give.tobacco-ta.ben-3:1.prox
 ‘Leo gave me some tobacco.’ (Bliss 2010 (4))²⁴

Two additional facts suggest that the delimiting object in Blackfoot is indeed an experiential delimiter. First, themes and patients of ditransitive verbs are *never* primary objects. I interpret this as evidence that the aspectual role incremental theme is simply not relevant to the grammar of Blackfoot, as even when such an object is present it behaves like an adjunct, rather than a direct object. Second, as Bliss (2010) observes, all argument structure operations that add a new primary object derive a TA verb, and the new object is always grammatically and semantically animate. (See also Meadows (2010)). This includes the benefactive object in (20)b, and the associate object in (21).

- (21) *Nitohpokooyiimiiwa na Pokaakii písátsi'nsimaaniksi.*
 nit-ohpok-ooyi-m-yii-wa ann-wa Pokaakii písátsi'nsimaan-iksi
 1-with-eat-ta-dir-3sg dem-prox Pokaakii vegetable-in.pl
 ‘I ate vegetables with Pokaakii.’
 (=I, together with Pokakii, ate vegetables; ≠I ate Pokaakii with vegetables.)
 (Meadows (2010))

What these delimiting arguments have in common is the mental capacity to apprehend the event, and their role in it. Bliss (2007, 2010) argues such arguments occupy a syntactic position that is structurally higher than the position occupied by objects of TI verbs. (See also Kim (2013b), Meadows (2010) and Ritter (2014) for similar analyses.) If indeed the relevant distinction is between experiential delimiters and other primary objects, then we might expect to find evidence that only semantically animate primary objects of TA verbs appear in the higher position, and that otherwise objects of TA and TI (and AI+O) verbs occupy a lower position in the structure. I leave the investigation of this question for future research.

²⁴Gloss in 0b has been modified slightly to make the two examples consistent.

If this approach is on the right track, it suggests the following parallels between the participant-based aspectual system and a temporal one: (i) Transitive verbs with a semantically animate object correspond to accomplishments. These are the most complex events, having both extent and delimiting argument. (ii) Transitive verbs with an inanimate object correspond to activities. These events have extent, but lack a delimiting argument. (iii) Animate intransitive verbs with a semantically animate subject correspond to achievements. MacDonald (2008) proposes that for punctual achievements the same time is both the initiation and termination point of the event. The parallel in a participant based system is an argument that both initiates and experiences the event. (iv) Finally, intransitive verbs with a semantically inanimate subject correspond to states. These events lack both extent and a delimiting argument.

| Temporal Aspectual Class | Participant-based Aspectual Class | Dimensionality | Delimiting argument |
|--------------------------|-----------------------------------|----------------|---------------------|
| accomplishments | transitive S-animate | yes | yes |
| activities | transitive S-inanimate | yes | no |
| achievements | intransitive S-animate | no | yes |
| States | intransitive S-inanimate | no | no |

Table 13. Aspectual Classification

Though more research is required to confirm this hypothesis, if only semantically animate arguments may serve as delimiting experiencers, then morphological marking in the form of verb stem finals need not align with aspectual class. In other words, though there is significant overlap, Bloomfield's morphological verb classes are not isomorphic with the participant-based aspectual classes in Blackfoot. For example, the TI verb *a'psski* means 'seek, try to discover, lit. chase after' (Frantz & Russell 1995:19). This verb always selects a semantically and grammatically inanimate object, which is not a delimiting argument. Thus, the verb invariably belongs to the transitive S-inanimate aspectual class. The aspectual classification of its TA counterpart, *a'pssko*, depends on whether its object is a delimiting argument: For example, the TA verb also belongs to the transitive S-inanimate class if it selects a semantically inanimate (but morphologically animate) argument, such as *pokon* 'ball'. However, it will be classified as a transitive S-animate class verb if it selects a semantically animate object, such as *imitáá* 'dog'. But this lack of alignment between morphology and aspectual classification should not be unexpected - the Vendler-Dowty classes are not morphologically determined either. In order to determine whether this hypothesis has merit it will be necessary to develop tests that distinguish among the four participant-based aspectual classes. The development of such tests is beyond the scope of the present paper.

6. Conclusion

The conclusion I draw from this case study is that animacy constitutes the ontological basis for aspectual classification in both the nominal and the verbal domain in Blackfoot. In this respect, it contrasts with English where boundedness constitutes the ontological basis for such classification. I attribute this contrast to variation in the formal feature that substantiates Inner Aspect (I-Asp), the category responsible for the classificatory function in both the verbal spine and the nominal spine: Whereas both nominal and verbal I-Asp are specified for [bounded] in English, they are specified for [animate] in Blackfoot. The difference between the featural make-up of I-Asp in English and Blackfoot provides support for the Universal Spine Hypothesis, according to which functional categories are substantiated on a language-specific basis.

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