

## Animacy in Blackfoot: Implications for Event Structure and Clause Structure

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### 1 Introduction

Transitivity alternations often involve the addition or suppression of internal arguments, with a concomitant shift in aspectual classification. Such alternations include the addition or removal of a direct object, as in antipassive, applicative, instrumental and benefactive alternations. Other transitivity alternations affect the external argument by adding or taking away an agent or causer, as in passive and causative constructions. The current paper will argue that apparent transitivity alternations in Blackfoot (Algonquian)<sup>1</sup> are fundamentally different in nature. We shall show that alternations between transitive and so-called intransitive verbs in Blackfoot are surprisingly immune to whether or not there is an internal argument. We further show that the relevant morphology is sensitive to the existence of an external argument, the thematic role of the external argument, and the semantic content of the external argument—external arguments must be animate.

Following Bloomfield (1946), it is standardly assumed in the literature on Algonquian languages that verb stems are subcategorized into one of four classes, depending on transitivity and gender:<sup>2</sup> These include two classes of intransitive verb stems, which are distinguished by the grammatical gender (animate or inanimate) of the subject and two classes of transitive verb stems, which are distinguished by the grammatical gender (animate or inanimate) of the object.<sup>3</sup>

Table 1: Bloomfield's (1946) Algonquian verb class system

VERB CLASS	INDICATIONS
Intransitive Animate (IA)	subject is animate
Intransitive Inanimate (II)	subject is inanimate
Transitive Animate (TA)	object is animate
Transitive Inanimate (TI)	object is inanimate

Verb class is indicated by a morpheme that appears at the right edge of the verb stem called a FINAL, whose form is lexically determined. The Blackfoot counterpart of 'eat' is typical of dyadic predicates in that it can be realized by an IA, TA or TI verb stem, each containing a different final morpheme.

- |     |       |          |    |                                 |
|-----|-------|----------|----|---------------------------------|
| (1) | ‘eat’ | ooy-i    | IA | – subject (agent) is animate    |
|     |       | oow-at   | TA | – object (patient) is animate   |
|     |       | oow-atoo | TI | – object (patient) is inanimate |

A first indication that the standard characterization of the Algonquian final morpheme as a transitivity marker does not accurately characterize the contribution of the final to clause structure is that IA finals appear on verbs with and without thematic objects, as shown in (2) below.<sup>4</sup>

- |     |    |                      |       |
|-----|----|----------------------|-------|
| (2) | a. | naoyiw               | mamii |
|     |    | na-ooy- <b>i</b> -wa | mamii |
|     |    | PST-eat-IA-3SG       | fish  |
|     |    | ‘S/he ate fish.’     |       |
|     | b. | naoyiw               |       |
|     |    | na-ooy- <b>i</b> -wa |       |
|     |    | PST-eat-IA-3SG       |       |
|     |    | ‘S/he ate.’          |       |

What then is the contribution of the final morpheme? We propose that it determines whether a DP object is licensed in the syntax. If Chomsky (1995) is correct, then the category that formally licenses a DP object is a light verb known as  $v$ , and  $v$  also determines whether there is an external argument. We show that Blackfoot finals have the both syntactic and semantic properties of  $v$ . It follows that they are not markers of transitivity, and consequently do not signal aspectual or internal argument structure. A survey of different finals in Blackfoot reveals that they have both the formal licensing capacity of a functional category and the open-class content characteristic of a lexical category. Thus, our analysis provides new empirical support for the postulation of  $v$ , and for the hypothesis that these light verbs constitute a category with mixed lexical and functional properties (cf. Butt 2003)<sup>5</sup>.

## 1.1 Organization

This paper is organized as follows: In section 2 we demonstrate that finals do not indicate membership in different aspectual classes. In section 3 we show that they do not express argument structure alternations, but rather determine whether a DP object is licensed in the syntax. In section 4 we argue that finals determine the availability of an external argument. We demonstrate that external arguments must be animate in Blackfoot, and analyse this as a semantic selectional restriction imposed by the final. In section 5, we discuss the morphosyntactic category of finals and the syntactic structure of Blackfoot predicates. Section 6 contains concluding remarks.

## 2 Blackfoot finals do not express event structure

We begin by demonstrating that Blackfoot finals do not encode aspectual distinctions, and more specifically that the alternation between related TA/TI and IA verb stems does not signal a difference in telicity. The literature has amply demonstrated that telic predicates—i.e., predicates that describe an event with an inherent endpoint—require a direct object (see, for example, van Voorst 1988, Tenny 1994 and van Hout 1998).<sup>6</sup> For verbs of creation and consumption, there is a direct relation between the unfolding of the event and semantic properties of the object noun phrase. This can be illustrated with the pair of examples in (3):

- |     |    |                   |                |
|-----|----|-------------------|----------------|
| (3) | a. | She ate fish.     | Activity       |
|     | b. | She ate the fish. | Accomplishment |

(3)a describes an *ACTIVITY*—an atelic event that unfolds over time, but has no inherent endpoint, and there is no specified quantity of fish consumed in the course of the eating event. (3)b, on the other hand, describes an *ACCOMPLISHMENT*—a telic event that unfolds over time, and whose inherent endpoint is determined by the quantity of fish consumed.

Cross-linguistically, this aspectual distinction is frequently signaled by morpho-syntactic alternations, such as object specificity, object case-marking, object agreement or object shift (cf. Ritter and Rosen 2001, and references cited therein). As noted in section 1, Blackfoot TA and TI finals agree in gender with their objects.<sup>7</sup> Given what we know about the relation between (a)telicity and agreement across languages, the standard view of Blackfoot finals might lead us to expect that these morphemes also serve as morpho-syntactic markers of (a)telicity. For example, we might expect to find evidence that the root ‘eat’ in combination with an intransitive final constitutes an atelic (activity) predicate, while the same root with a transitive final forms a telic (accomplishment) predicate. On the other hand, our hypothesis that Blackfoot finals are *v*, predicts that choice of final should not correlate with aspectual class. In order to test these predictions, we apply standard telicity tests to ‘eat’ and other verbs of consumption and creation in Blackfoot.

The first test we consider is compatibility with aspectual verbs meaning ‘stop’ and ‘finish’, both of which are possible with durative predicates.<sup>8</sup> The difference between them is that ‘finish’ presupposes that the event denoted by the predicate has some identifiable endpoint, while ‘stop’ does not. This leads to the prediction that both aspectual classes should be compatible with ‘stop’, but only accomplishments should be compatible with ‘finish’.

- (4) a. She stopped eating fish. Activity  
 b. \*She finished eating fish.
- (5) a. She stopped eating the fish. Accomplishment  
 b. She finished eating the fish.

The second test is the potential for ambiguity with ‘almost’. For activities, which are described as processes or events with homogeneous subparts, this adverb necessarily modifies only the start of the event. Accomplishments, on the other hand, consist of both a process and a result. Consequently, for this class of predicates the interpretation of ‘almost’ is ambiguous; it can modify either the process or the result, i.e., the start or the culmination of the event.<sup>9</sup>

- (6) a. She almost ate fish. Activity  
 = almost started; ≠ almost finished
- b. She almost ate the fish Accomplishment  
 = almost started OR almost finished

The third test is the availability of an entailment from the progressive/imperfective to the simple past. Dowty (1977) first used the term IMPERFECTIVE PARADOX to describe the observation that the entailment from the progressive to the simple past fails with accomplishments. This failure is due to the fact that the progressive form of an accomplishment does not entail completion of the event, whereas the simple past indicates that the event is complete. For example, if Anita was called from the table just as she started to eat her fish course, then she may not have been able to consume the entire portion, and the eating event will not have reached its natural culmination. Thus, (7)a does not entail (7)b.

- (7) a. Anita was eating that (piece of) fish. Accomplishment  
 b. Anita ate that (piece of) fish.

This problem does not arise with progressive/imperfective activities. Since activities are events with homogeneous subparts, the completion of at least one subpart is sufficient for the completion entailment to hold. For example, if Anita was eating fish, rather than meat or pasta, then as long as she consumed at least one bite, she ate fish. Thus, (8)a entails (8)b.

- (8) a. Anita was eating fish. Activity  
 b. Anita ate fish.

The hypothesis that Blackfoot finals encode aspectual distinctions would predict that the IA verb stem *ooyi* ‘eat’ was an activity predicate, and that *oowat*, the TA version of this verb stem was an accomplishment predicate. If this

were the correct analysis, the application of these telicity tests to the different Blackfoot verbs ‘eat’ would yield the following results:

Table 2: Predicted telicity test results if finals are aspectual

Telicity Test	<i>ooyi</i> ‘eat-IA’	<i>oowat</i> ‘eat-TA’
<i>stop</i> Ving	✓	✓
<i>finish</i> Ving	*	✓
<i>almost</i> V = almost start Ving	✓	✓
<i>almost</i> V = almost finish Ving	*	✓
imperf V entails simple past V	✓	*

In the remainder of this section, we show that these predictions are not borne out by the data. Rather, the results of these tests indicate that in fact there is no correlation between choice of final and aspectual class, consistent with the *v* hypothesis.

## 2.1 *Stop vs. Finish in Blackfoot*

The Blackfoot counterparts of aspectual verbs ‘stop’ and ‘finish’ are realized as prefixes on the main verb. As predicted, when the prefix *issik-* ‘stop’ is added to either transitive or intransitive forms of the verb ‘eat’, the result is grammatical. Note that the result with intransitive ‘eat’ is the same regardless of whether there is a bare NP object. In other words, unlike in English, eliding the direct object or manipulating its semantic properties does not seem to change the aspectual classification of a Blackfoot verb.

- (9) a. *issiksooyiwa* (mamii) IA  
*issik-ooy-i-wa* (mamii)  
 stop-eat-IA-3SG (fish)  
 ‘S/he stopped eating (fish).’
- b. *issiksowatsiw* amo mamii TA  
*issik-oow-at-yii-wa* amo mamii  
 stop-eat-TA-TH-3SG DEM fish  
 ‘S/he stopped eating this fish.’

The prediction for the prefix *iksist-* ‘finish’ is that it should be acceptable in combination with the TA verb *oowat*, but not with the related IA verb *ooyi*. However, as shown in (10), affixation of *iksist-* is possible with both versions of the verb ‘eat’.

- (10) a. *akaiksistsooyiwa* (mamii) IA  
*akaa-iksist-ooy-i-wa* (mamii)  
 PERF-finish-eat-IA-3SG (fish)  
 ‘S/he’s finished eating (fish).’

b.	akaiksistsoowatsiw	amo	mamii	TA
	akaa-iksist-oow-at-yii-wa	amo	mamii	
	PERF-finish-eat-TA-TH-3SG	DEM	fish	
	‘S/he’s finished eating this fish.’			

Thus, this first diagnostic indicates that there is no aspectual difference between intransitive and transitive versions of the verb ‘eat,’ and moreover that both belong to the class of accomplishment predicates.

## 2.2 No ambiguity with *almost* in Blackfoot

Blackfoot has two verbal prefixes that translate as ‘almost’: *iimat/omat* and *ai’tamáak*. When the prefix *iimat-* is added to a verb the result is unambiguously interpreted as ‘almost start X-ing’, suggesting that it modifies event initiation only. Consequently, it should be compatible with both activities and accomplishments. On the hypothesis that *ooyi* is an activity predicate and *oowat* an accomplishment, we predict that both will be acceptable with the prefix *iimat-*. As illustrated in (11), this prediction is borne out by the data:

(11)	a.	iimatooyiwa	(ni’tawaakii)	IA
		iimat-ooy-i-wa	(ni’tawaakii)	
		almost-eat-IA-3SG	(chicken.AN)	
		‘S/he almost ate (chicken).’		
		= almost started; ≠ almost finished		
	b.	iimatoowatsiw	amo ni’tawaakii	TA
		iimat-oow-at-yii-wa	amo ni’tawaakii	
		almost-eat-TA-TH-3SG	DEM chicken.AN	
		‘S/he almost ate this chicken’		
		= almost started; ≠ almost finished		

In order to express the idea that an event is almost finished in Blackfoot, it is necessary to prefix both the adverb *ai’tamáak* ‘almost’ and the aspectual preverb *iksist-* ‘finish’. On the hypothesis that *ooyi* is an activity predicate and *oowat* an accomplishment, we predict that only the latter will be acceptable with this combination of prefixes. However, consistent with our observations about the prefix *iksist-* ‘finish’ discussed in section 2.1 above, we found that in fact both the intransitive and transitive verbs are compatible with the prefix combination ‘almost finished’.

(12)	a.	ai’tamáakiksistsoyi	(owaai)	IA
		ai’tamaak-iksist-ooy-i-wa	(owaa-i)	
		almost-finish-eat-IA-3SG	(egg.IN-NON-PRT)	
		‘S/he’s almost finished eating (eggs).’		

b.	ai'tamáakiksistsoowatoom	amostsi	owaistsi	TI
	ai'tamaak-iksist-oow-atoom	amo-istsi	owai-istsi	
	almost-finish-eat-TI-TH	DEM -IN.PL	egg-IN.PL	
	'S/he almost finished eating these eggs.'			

Thus, this second diagnostic also suggests that both transitive and intransitive verbs 'eat' belong to the class of accomplishment predicates.

### 2.3 The imperfective paradox in Blackfoot

Dunham (2007) analyses the Blackfoot prefix *a-* as a marker of imperfective aspect for a number of reasons, including the fact that it cannot occur on verbs that express perfective or completed accomplishments. The evidence that he adduces to support this claim consists of an IA verb with a bare noun complement:

(13)	a.	anna	Joel	á'pistotáki	pisátsasski
		ann-a	Joel	á'p-istotaki	pisátsáisski
		DEM-AN.SG	Joel	around-make.IA	flower.IN
		'Joel made a flower.'			
		Good after completion of flower			
		Bad during construction of flower			
	b.	anna	Joel	á'paistotáki	pisátsasski
		ann-a	Joel	á'p-á-istotaki	pisátsáisski
		DEM-AN.SG	Joel	around-IMPERF-make.IA	flower.IN
		'Joel is (in the process of) making a flower.'			
		Bad after completion of flower			
		Good during construction of flower			

(Dunham 2007)

Our own fieldwork data confirms this finding. More specifically, we found that when we added the imperfective prefix *a-* to both transitive and intransitive versions of 'eat' the event could not be interpreted as completed.<sup>10</sup> In other words, none of the imperfective versions of 'eat' in Blackfoot has a completion entailment.

(14)	a.	ooyiwa	mamii		IA
		ooy-i-wa	mamii		
		eat-IA-3SG	fish		
		'S/he ate a fish.'			
		Good after entire fish has been consumed			
		Bad during consumption of fish			
	b.	aooyiwa	mamii		IA
		a-ooy-i-wa	mamii		
		IMPERF-eat-IA-3SG	fish		
		'S/he was eating a fish.'			
		Bad after entire fish has been consumed			
		Good during consumption of fish			

- (15) a. oowatsiw amo mamii TA  
oow-at-yii-wa amo mamii  
eat-TA-TH-3SG DEM fish.AN  
‘S/he ate that fish.’  
Good after entire fish has been consumed  
Bad during consumption of fish
- b. aoowatsiw amo mamii TA  
a-oow-at-yii-wa amo mamii  
IMPERF-eat-TA-TH-3SG DEM fish.AN  
‘S/he was eating that fish’  
Bad after entire fish has been consumed  
Good during consumption of fish

Thus, this final diagnostic confirms that there is no aspectual difference between intransitive and transitive versions of the verb phrase ‘eat a/that fish’, and moreover that both belong to the class of accomplishment predicates.

## 2.4 Summary

The results of the three telicity tests available in Blackfoot indicated there is no difference between the transitive and intransitive finals. These results are summarized below.

Table 3: Actual telicity test results

Telicity Test	<i>ooyi</i> ‘eat-IA’	<i>oowat</i> ‘eat-TA’
<i>stop</i> Ving	✓	✓
<i>finish</i> Ving	✓	✓
<i>almost</i> V = almost start Ving	✓	✓
<i>almost finish</i> Ving	✓	✓
imperf V entails simple past V	*	*

As expected, the transitive verb stem *oowat* patterns like an accomplishment, but so does the intransitive verb stem *ooyi*. This suggests that the alternations between transitive and so-called intransitive verb stems do not reflect differences between atelic/activity predicates and telic/accomplishment predicates in Blackfoot. Thus, the evidence does not support the hypothesis that Blackfoot finals are morpho-syntactic markers of (a)telicity.

## 3 Blackfoot finals do not express argument structure

A reasonable interpretation of the standard characterization of Blackfoot finals as markers of (in)transitivity is that they encode information about the verb's internal argument structure. Assuming that such information is listed in the lexicon, this view leads to the following expectations: First, an intransitive final will indicate that the verb has only one lexically listed argument, and a transitive final will indicate that the verb has (at least) two. Second, transitivity alternations will not apply across clause boundaries. In contrast, the hypothesis that Blackfoot finals are *v* predicts that the choice of intransitive versus transitive final will depend on whether an object is licensed in the syntax, and that a transitive final may syntactically license an object which is not a lexically listed argument of the verb. We shall demonstrate that the predictions of the *v* hypothesis are borne out by the facts, and that the predictions of the (in)transitivity alternative are not. We have already seen that the verb stem *ooyi* 'eat' may take two arguments, even though it contains an IA final. Below we discuss the syntactic constraints on the object of such verb stems. Then, we show that morphologically transitive verb stems may borrow their 'object' from an embedded clause, and that morphologically transitive verbs may license a non-thematic object (i.e., an object which is not part of the verb's lexically listed argument structure).

### 3.1 Different verb classes, same argument structure

In section 1, we noted that the Blackfoot counterpart of 'eat' is typical of dyadic verbs in that the choice between TA/TI and IA final not determined by the verb's argument structure. This is evidenced by the fact that the TA verb stem *oowat*, the TI verb stem *oowatoom* and the IA verb stem *ooyi* are all compatible with both an external and an internal argument, as illustrated in (16).

(16)	a.	naowatsiw na-oow-at-yii-wa PST-eat-TA-TH-3SG 'S/he ate this fish.'	amo amo DEM	mamii mamii fish.AN	TA
	b.	naowatoom na-oow-atoom-wa PST-eat-TI-TH-3SG 'S/he ate that soup.'	ani ani DEM	akoopis akoopis soup.IN	TI
	c.	naoyiw na-ooy-i-wa PST-eat-IA-3SG 'S/he ate (fish/soup).'	(mamii/akoopis) (mamii/akoopis) (fish/soup)		IA

The choice among these verb stems is not determined by the presence or absence of an internal argument, but rather by its morpho-syntactic properties, namely by its syntactic category (DP or NP) and its gender (animate or inanimate).

Glougie (2000) argues that there is a categorical distinction between indefinite and definite nominals in Blackfoot: Indefinite nominals, which are often realized as bare nouns, are NPs; definite nominals are DPs. She observes that only definite DP objects occur in the context of verbs with transitive finals; elsewhere an intransitive final is required. This analysis elegantly captures the fact that both intransitive verbs and verbs with bare NP objects require an intransitive final.<sup>11</sup>

(17)	a.	naowatsiw na-oow-at-yii-wa PST-eat-TA-TH-3SG 'S/he ate this fish.'	[DP	amo	mamii ]	TA
				amo	mamii	
				DEM	fish.AN	
	b.	* naowatsiw na-oow-at-yii-wa PST-eat-TA-TH-3SG 'S/he ate fish.'	[NP	mamii ]	TA	
				mamii		
				fish.AN		
(18)	a.	naoyiwa na-ooy-i-wa PST-eat-IA-3SG 'S/he ate fish.'	[NP	mamii ]	IA	
				mamii		
				fish.AN		
	b.	* naoyiwa na-ooy-i-wa PST-eat-IA-3SG 'S/he ate that fish.'	[DP	amo	mamii]	IA
				amo	mamii	
				DEM	fish.AN	

The choice between the two transitive finals depends on the grammatical gender of the DP object. As illustrated in (19), a verb that selects a DP object of animate gender requires a TA final, and a verb that selects a DP object of inanimate gender requires a TI final.

(19)	a.	naowatsiw na-oow-at-yii-wa PST-eat-TA-TH-3SG 'S/he ate this fish/*soup.'	amo	mamii/*akooпис	TA
			amo	mamii/*akooпис	
			DEM	fish.AN/*soup.IN	
	b.	naowatoom na-oow-atoom-wa PST-eat-TI-TH-3SG 'S/he ate that soup/*fish.'	ani	akooпис/*mamii	TI
			ani	akooпис/*mamii	
			DEM	soup.IN/*fish.AN	



- (22) nitsíksstatawa [CP noxkówa máxka'potakssi ] CCA  
nit-íksst-at-a-wa [CP n-oxkó-wa m-áxk-a'potak-ssi ]  
I-want-TA-TH-3SG my-son-3SG 3-might-work-CONJ  
'I want my son to work.' (Frantz 1978: 89)

Above we noted that TA/TI finals require a DP (rather than an NP) object. CCA is subject to the same restriction: this construction is impossible if the target in the embedded clause is an NP, rather than a DP, as illustrated by the following examples from Bliss (2007).

- (23) \*Nitáisstaata omááhkitstssi mátapí áihpiyi  
nit-a-i-sstaat-a om-aahk-itstsi-his matapí a-ihpiyi  
I-DUR-I-want.TA-DIR 3-NONFACT-exist-CONJ person DUR-dance  
'I want someone to dance'  
Lit: 'I want there to be a person who dances'

- (24) \*Nitáisstaata mátapí ninááhksspomoyissi  
nit-a-i-sstaat-a matapí nin-aahk-sspomo-yissi  
I-DUR-I-want.TA-DIR person I-NONFACT-help.TA-INV.CONJ  
'I want someone to help me'  
Lit: 'I want a person to help me'

(Bliss 2007)

This shift from IA to TA/TI final in CCA provides compelling evidence that the relationship between finals and direct objects is syntactic, rather than lexical.

### 3.3 Transitivity alternations due to non-thematic benefactive objects

Assuming that benefactive objects are the result of a syntactic operation of incorporation, as argued by proponents of Principles and Parameters theory (e.g., Baker 1988, Marantz 1984, 1993, Pyllkkänen 2008), Blackfoot benefactives provide a third argument that transitivity alternations do not indicate argument structure alternations.<sup>13</sup> Although benefactive DPs are not inherently part of a verb's argument structure, they can be added to any Blackfoot clause. Further, when they appear, they function as direct objects, and are licensed by a benefactive marker (Frantz 1991).

- (25) a. Iihpómmaawa ónnikii. IA  
iihpomm-aa-wa ónnikisi  
buy-IA-3SG milk  
'He bought milk.'
- b. Iihpóm moyiiwayi ónnikii. Ben (=TA)  
iihpomm-o-yii-wa-ayi ónnikisi  
buy-BEN(TA)-TH-3SG-4PRON milk

“He bought milk for her.”

(Frantz 1991:104 (k))

Frantz analyses the benefactive marker as a TA final because it always licenses an animate DP object, appears in complementary distribution with the IA final and with other transitive finals, and because it is followed by the THEME suffix, which is an obligatory inflectional suffix added to all and only transitive stems.<sup>14</sup> If finals can license non-thematic objects, then clearly they are not markers of argument structure.

### 3.4 Summary

In short, we have seen that a transitive final is required if the verb has a DP internal argument, if it agrees with a DP argument of another predicate, or if it agrees with a non-thematic DP such as a benefactive. Otherwise, the verb will take an intransitive final. Thus, there is no evidence that related transitive and intransitive verb stems are associated with different argument structures, or that apparent transitivity alternations are due to lexical operations on argument structure. Rather, the difference between related IA, TA and TI verb stems in Blackfoot is syntactic in nature: Transitive finals (TA and TI) license a DP object, intransitive (IA) finals do not. This is precisely what we expect given the hypothesis that Blackfoot finals are *v*. This much establishes that finals have the syntactic property of *v*. In the next section, we argue that Blackfoot finals also have the semantic property that characterizes *v*, i.e. that they determine whether there is an external argument.

## 4. Animacy, agency and verb classification

Standard descriptions of the verb class system of Blackfoot all specify that verb stems with TA or TI finals agree in grammatical gender with their objects. Frantz (1991: 45) observes that these verb stems also impose a semantic selectional restriction on their subjects, i.e., they “must reference an entity which is capable of exercising will.” Since all nouns that denote entities capable of exercising will (i.e., people and animals) are grammatically animate in this language, the result is that verb stems with TA or TI finals require an animate external argument, capable of functioning as an agent. Frantz’s evidence for this comes from the fact that there exists a small class of non-sentient animate nouns, such as *isttoan* ‘knife’, *pokón* ‘ball’ and *po’táá* ‘stove’. Even though they are grammatically animate, these nouns cannot function as subjects of transitive verbs, as illustrated in (26). In contexts where English

would allow such instrumental subjects, Blackfoot requires an instrumental prefix on the verb licensing an instrumental adjunct, and a phonetically null, unspecified animate subject, which is interpreted as an agent, as shown in (27).

(26)	*oma	isttoána	ikahksínima	annistsi	ikkstsíkisiistsi
	om-wa	isttoán-wa	ikahksíni-m-wa	ann-istsi	ikkstsíkisi-istsi
	DEM-3PROX.AN	knife-3PROX.AN	cut.TI-TH.3sg	DEM-IN.PL	branch-IN.PL
	‘That knife cut those branches.’				
					Frantz 1991: 45 (k)

(27)	oma	isttoána	iihtsikahksínii’pi	annistsi	ikkstsíkisiistsi
	om-wa	isttoán-wa	iiht-ikahksíni-’p-yi	ann-istsi	ikkstsíkisi-istsi
	DEM-3PROX.AN	knife-3PROX.AN	INST-cut.TI-TH-IN.PL	DEM-IN.PL	branch-IN.PL
	‘By means of the knife the branches were cut off.’				
					Frantz 1991: 45 (l) <sup>15</sup>

We attribute this animacy restriction on the external argument to the final morpheme. In section 3 we demonstrated that finals play no role in the selection of *internal* arguments. We now propose that they determine whether the verb takes an *external* argument. In particular, we propose that all TA and TI finals select an external argument, and that they impose a semantic animacy restriction on this argument. IA finals that derive related PSEUDOTRANSITIVE verbs (i.e. verbs with both an external argument and NP object) impose the same semantic animacy restriction on their external argument.<sup>16</sup> The standard Algonquian verb class system obscures this fact because it treats the animacy restriction on IA verb stems as a type of syntactic agreement, rather than semantic selection.

In the remainder of this section, we further explore the relation between the verb final and the selection of an external argument. In section 4.1 we argue that verb stems with II finals typically fail to select an external argument, and thus II finals derive unaccusative verb stems. In section 4.2 we show that some IA finals select an external argument; others do not. The result is that IA finals constitute a heterogeneous set deriving unergative, pseudotransitive and unaccusative verb stems.

#### 4.1 Intransitive Inanimate (II) verbs lack an external argument

We begin by reviewing Johansson’s (2007) evidence that there are no II verbs with agentive or experiencer subjects. For verbs that denote emotional states, such as ‘be happy’ or ‘be sad’, Frantz and Russell’s (1995) *Blackfoot dictionary of stems, roots and affixes* lists only IA stems. Similarly, for verbs that require an agent the dictionary lists IA, TA, and/or TI stems, but strikingly no II ones. Johansson was interested in the question of how a Blackfoot

speaker describes a fictional world in which inanimate objects feel, think and act. She found that in this context, a strategy of gender mismatch is employed: For verbs that denote emotional states, existing IA verbs are predicated of an inanimate DP, as illustrated in (28)a. Johansson tested other strategies for dealing with this situation, namely coining a new II verb and switching the gender of the DP subject, but both were categorically rejected, as shown in (28)b,c.<sup>17</sup>

(28)	a.	ámostsi amo-istsi DEM-IN.PL	pisátssaissskiistsi pisatssaissski-istsi flower <sub>(IN)</sub> -IN.PL	iiki'taamssiiyaawa iik-i'taam-ssi-yi-aawa very-happy-be.IA-PL-PRON	IA
		'These flowers (inanimate) are happy(animate).'			
	b.	*ámostsi amo-istsi DEM-IN.PL	pisátssaissskiistsi pisatssaiasski-istsi flower <sub>(IN)</sub> -IN.PL	iiki'taamiiyaawa iik-i'taam-ii-yi-aawa very-happy-be.II-PL-PRON	II
		'These flowers (inanimate) are happy (*inanimate)'			
	c.	*ámoksi amo-iksi DEM-AN.PL	pisátssaissskiiksi pisatssaissski-iksi flower <sub>(IN)</sub> -AN.PL	iiki'taamssiiyaawa iik-i'taam-ssi-yi-aawa very-happy-be.IA-PL-PRON	IA
		'These (*animate) flowers are happy (animate).'			

The fact that II finals can not be used to fill the gaps in the verb inventory indicates that related verbs do not constitute an inflectional paradigm, and consequently that finals are not simply inflectional agreement morphemes.

Johansson also gathered data on transitive verbs, and determined that DPs that denote willful or sentient inanimate entities can function as agentive subjects of transitive verbs, regardless of their grammatical gender. Thus, (26) is considered grammatical in a world where knives are capable of volitional action. Similarly, the examples in (29), with IA, TI and TA verbs 'eat', are all fine in a world inhabited by willful, hungry flowers.

(29)	a.	ámostsi amo-istsi DEM-IN.PL	pisátssaissskiistsi pisatssaissski-istsi flower-IN.PL	naooyiaawa na-oo-yi-yi-aawa PST-eat-IA-PL-PRON	mamii mamii fish	IA
		'These flowers ate fish'				
	b.	ámostsi amo-istsi DEM-IN.PL	pisátssaissskiistsi pisatssaissski-istsi flower-IN.PL	naówatoomiyaawa na-owatoo-m-yi-aawa PST-eat.TI-TH-PL-PRON	ámostsi míniistsi amo-istsi miin-istsi DEM-IN.PL berry-IN.PL	TI
		'These flowers ate these berries'				
	c.	amostsi amo-istsi DEM-IN.PL	pisatssaissskiistsi pisatssaissski-istsi flower-IN.PL	naowatsiyi na-owat-yi-yi PST-eat.TA-TH-PL	amo mamii amo mamii DEM fish	TA
		'These flowers ate this fish.'				

The conclusion to be drawn is that Blackfoot imposes a semantic animacy constraint on agents and experiencers of IA and TA/TI verbs. Given the possibility of sentient inanimates, i.e., inanimate gender nouns that denote entities capable of thought, feeling or action (in a fictional world), the question arises as to why there are no agentive or experiencer II verbs. According to Folli and Harley (2008), such animacy effects arise from the interaction of grammar and conceptual structure. They argue that conceptually, agents must have the teleological capacity, i.e., inherent qualities and abilities, to generate the event on their own, and that animacy constitutes the grammatical realization of this teleological capacity. We propose that the animacy constraint on experiencers has a similar explanation, i.e., experiencers must have the teleological capacity to respond to the event, and as sentient beings, animate entities have the necessary inherent ability. We attribute the impossibility of II verbs with agentive or experiencer subjects in Blackfoot to the fact that II finals are unable to semantically select arguments with the required teleological capacity.

It follows that (most) Blackfoot II verbs will be unaccusative.<sup>18</sup> An examination of the II verb stems listed in Frantz and Russell's Blackfoot dictionary suggests that this prediction is borne out. II verbs primarily belong to three semantic classes: (a) stative verbs, (b) eventive change of state verbs and (c) eventive change of location verbs. For both types of eventive II verb, the single argument undergoes the change denoted by the verb. Though we have not yet developed language specific syntactic evidence in support of this classification, we note that these Blackfoot verbs correspond to unaccusative verbs in other languages. Some representative examples are listed in the following table:

Table 5: Blackfoot II verbs

<b>stative verbs</b>	<b>II</b>
‘be small’	<i>ohpokii</i>
‘be deep snow’	<i>immiko</i>
‘be slow’	<i>iitsiksist.a'pii</i>
‘be a risky situation’	<i>i'sa'pii</i>
<b>change of state verbs</b>	<b>II</b>
‘spoil, rot’	<i>oka'pihtsii</i>
‘burst’	<i>ipáksii</i>
‘curdle, congeal’	<i>ipahsii</i>
‘break (said of a rope or string-like object)’	<i>ikahkapi'kaa</i>
‘blow down, collapse (said of a structure)’	<i>ikóóhpapokaa</i>
<b>change of location verbs</b>	<b>II</b>
‘fall’	<i>ohpi'yi</i>
‘disappear’	<i>sayínakoyi</i>
‘lodge, land on end’	<i>sstaaka'si</i>

Frantz & Russell (1995)

In short, we have seen that Blackfoot has no II verbs with agentive or experiencer subjects, and that in fact verbs of this class are primarily stative or require a patient or theme subject. We have also seen that Blackfoot IA verbs may be predicated of a grammatically inanimate subject just in case that subject is an agent or experiencer. This indicates that the language specific animacy constraint on external arguments is uniformly a type of semantic selection, and that it is imposed by TA, TI and IA, but not II finals. Consequently, we speculate that verbs with II finals are (almost) all unaccusative, and attribute this to the fact that II finals cannot impose the semantic animacy restriction required for an agentive or experiencer external argument.

#### 4.2 Some Intransitive Animate (IA) verbs have an external argument

The Blackfoot animacy constraint on external arguments leads us to expect two subclasses of IA verbs: (i) unergative and pseudotransitive verbs, which have an external argument; and (ii) unaccusative verbs, which do not. Our hypothesis that the final morpheme determines whether an external argument is selected leads to the expectation that these two subclasses of IA verbs will have different finals. In this section, we show that this prediction is indeed borne out.

Some preliminary evidence for these two types of IA verbs comes from an analysis of Frantz and Russell's Blackfoot dictionary, which lists verb stems subcategorized by class (IA, II, TA or TI). At the end of the main entry for a given verb stem are listed related stems of other classes.<sup>19</sup> Ritter and Wiltschko (2006) conducted a study of this dictionary and found that the majority of verb stems mentioned belong to the IA class (1247 – 54%). This is in stark contrast to the number of II verb stems (292 – 13%). They attribute this quantitative difference to differences in the argument structure possibilities of the two verb classes: IA verbs may be pseudotransitive, unergative or unaccusative, while II verbs may only be unaccusative. They observe that entries in the Blackfoot dictionary for verb stems with external arguments only list related stems with the same root that share this property. Strikingly, pseudotransitive and unergative IA verb stems are often listed in the dictionary as related to TA and/or TI stems, but II verb stems are not.<sup>20</sup> Moreover, these IA-TI/TA pairs and IA-TI-TA triples almost always have agentive or experiencer arguments. Some illustrative examples are given in the tables below:

Table 6: Blackfoot IA-TI-TA verbs

<b>agentive subject</b>	<b>IA</b>	<b>TI</b>	<b>TA</b>
‘whet, sharpen’	<i>iksisiststaki</i>	<i>iksisiststoo</i>	<i>iksisistsim</i>
‘saw (e.g. wood)’	<i>ikahksiststaki</i>	<i>ikahksiststoo</i>	<i>ikahksistsim</i>
‘save (food)’	<i>imsskaa</i>	<i>imsskatoo</i>	---
‘save food for’			<i>imsskat</i>
‘roll (s.o./s.t.)’	<i>inakataki</i>	<i>inakatoo</i>	<i>inakat</i>
‘challenge (someone)’	<i>ikahtomaa</i>	---	<i>ikohtom.a't</i>
‘play a non-athletic game, gamble;’	<i>ikahtsi</i>	---	
‘play against’			<i>ikahtsiim</i>
‘stir a liquid into a powdery substance to create sthg’	<i>iitssksiiststaa</i>	<i>iitssksiiststoo</i>	---
‘use a feather as head ornament’	<i>ikkimaani</i>		---
‘use as a head ornament’		<i>ikkimaanatoo</i>	
<b>experiencer subject</b>	<b>IA</b>	<b>TI</b>	<b>TA</b>
‘regret the loss of/ miss (s.t. or s.o.)’	<i>ikooki'taki</i>	<i>ikooki'tsii</i>	<i>ikookimm</i>
‘feel grateful/be appreciative/thankful’	<i>iniiyi'taki</i>		
‘appreciate’		<i>iniiyi'tsi</i>	
‘respect’			<i>iniiyimm</i>
‘think/desire (s.t.) secretly’	<i>iksimsstaa</i>		
‘think about/covet’		<i>iksimsstatoo</i>	<i>iksimsstat</i>
‘be fascinated, amazed’	<i>ipisatsi'taki</i>		
‘be amazed at’		<i>ipisatsi'tsi</i>	<i>ipisatsimm</i>

Similarly, when the dictionary entry for verb stems without an external argument mentions a related stem, the related stem also shares this property. Consequently, unaccusative II verb stems are often listed in the dictionary as related to

unaccusative IA stems. The following table contains the II verb stems in Table 5, along with the IA stems listed in the dictionary as related. In most cases it is clear from the examples given that these related IA and II verb stems have the same argument structure, i.e., both take a theme argument.

Table 7: Blackfoot II-IA verbs

<b>stative verbs</b>	<b>II</b>	<b>IA</b>
'be small'	<i>ohpokii</i>	<i>ohpokssi</i>
'be slow'	<i>iitsiksista'pii</i>	<i>iitsiksista'pssi</i>
'be deep snow'	<i>immiko</i>	---
'be a risky situation'	<i>i'sa'pii</i>	---
<b>change of state verbs</b>	<b>II</b>	<b>IA</b>
'spoil, rot'	<i>oka'pihtsii</i>	<i>oka'phitsimi</i>
'burst'	<i>ipákksii</i>	<i>ipákksskaa</i>
'curdle, congeal'	<i>ipahsii</i>	---
'blow down, collapse (said of a structure)'	<i>ikóóhpapokaa</i>	---
<b>change of location verbs</b>	<b>II</b>	<b>IA</b>
'fall'	<i>ohpi'yi</i>	<i>ohpi'yi</i>
'disappear'	<i>sayinakoyi</i>	<i>sayinako</i>
'lodge, land on end'	<i>sstaaka'si</i>	---

Frantz & Russell (1995)

As mentioned above, our hypothesis that the final determines whether there is an external argument leads to the prediction that unergative/pseudotransitive IA verb stems should have different finals from unaccusative IA verb stems. This is obviously the case for Blackfoot verb stems meaning 'dry' reproduced in (30). The dictionary lists two IA verb stems that appear to have the same root but different finals; it is clear from the examples given that *ihkssaki* is an unergative/pseudotransitive verb stem with an agentive subject while *ihkssoyi* is an unaccusative verb stem with a theme subject. Note also that the entry for the unergative/pseudotransitive verb stem *ihkssaki* lists a related TI stem, which also has an external argument, but the unaccusative verb *ihkssoyi* does not. On the other hand, the main entry for the unaccusative II verb stem, *ihkitsi* 'dry', lists *ihkssoyi* (but not *ihkssaki*) as a related stem.

- (30) a. *ihkssaki* [IA] dry (something); *ihkssakít!* dry (s.t.)!; *áakihkssakiwa í'ksisakoi* she will dry meat; also *ihkihsaki*; Rel. stem : [TI] *ihkssi* dry.
- b. *ihkssoyi* [IA] become dry; *áakihkssoyiwa* it will dry; *iikhksóyiwa* it dried; *anníiksi katsíiksi máátomaihkssoyiwaiksaawa* your pants, they are not dry yet.<sup>21</sup>
- c. *ihkitsi* [II] dry; *áakihkitsiwa* it will dry; *iikhkitsiwa* it dried; *ákaihkitsiwa kaapoksíniimaani* the floor is dry; Rel. stem: [IA] *ihkssoyi* dry.

Frantz and Russell 1995: 17

Though it is not always easy to isolate the final morpheme in the verb stem, we have identified some finals that are exclusively associated with one type of IA or the other. In particular, unergative/pseudotransitive IA verbs, such as those in Table 6 often have the finals *-aki* or *-i'taki*, and unaccusative IA verbs, such as those in Table 7, often have the finals *-ssi* and *-a'pssi*. Other IA finals are possible (e.g., *-imi* on *oka'phitsimi* 'spoil, rot'), but importantly *-aki* or

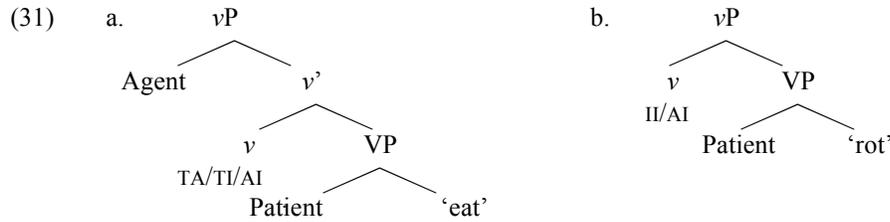
*-i'taki* never appear on unaccusative IA verbs, and similarly *-ssi* and *-a'pssi* do not appear on unergative/pseudotransitive IA verbs.

### 4.3 Summary

Johansson's research provides compelling evidence that II verbs cannot have experiencer or agentive subjects under any circumstances, and that TA, TI and unergative or pseudotransitive IA verbs may all be predicated of experiencer or agentive subjects regardless of grammatical gender; the subject need only denote an entity capable of will. This indicates that Blackfoot TA, TI and IA finals imposes a semantic animacy requirement on external arguments. As a consequence of this language-specific constraint, II verbs are almost always unaccusative. IA verbs, in contrast, are a heterogeneous class which includes both pseudotransitive/unergative and unaccusative verbs, and these two subclasses are identified by different finals. Based on this semantic animacy requirement, and the observation that the form of IA finals attached to verbs that select agentive or experiencer subjects differs from that of IA finals attached to verbs that select patients or themes, we argued that the semantic contribution of the final is to determine whether an external argument is selected.

## 5 Finals are light verbs (*v*)

We have now established the following properties of Blackfoot finals: First, transitive finals are distinguished from their intransitive counterparts by their syntactic properties, and not by their event or (internal) argument structure. More specifically, transitive finals license DP objects, but intransitive finals do not. Second, finals determine whether the predicate has an agent or experiencer as its external argument. Taken together, these properties suggest that finals are *v*, a light verb that theta-marks the external argument DP, and enters into a Case-checking relation with an internal DP argument (cf. Chomsky 1995).<sup>22</sup> The hypothesis that finals are *v* gives rise to the structure in (31)a for verbs with an external argument, such as 'eat': the Patient Merges with V forming a VP, *v* Merges with VP and the agent Merges in Spec, *v*P. Verbs without an external argument, such as 'rot', have the syntactic structure in (31)b. The only difference between this structure and (31)a is that there is no external argument in Spec, *v*P.



The assumption that theta-role assignment is a property that is otherwise associated with lexical categories, and that structural Case checking is a property of functional categories, leads to the characterization of *v* as a quasi-lexical category.<sup>23</sup> While some authors (e.g., Horvath and Siloni 2002, this volume) consider this mixed status problematic, Butt (2003) takes a different approach, proposing that light verbs (including *v*) constitute a third type of syntactic category, whose mixed status is their defining property. In this section we demonstrate that Blackfoot finals have both the functional and lexical properties that characterize *v*.

In the minimalist framework, it is assumed that only functional categories syntactically license arguments they do not theta-mark by entering into formal feature checking relations with them (Chomsky 1995, 2000). In particular, it is assumed that transitive *v* licenses a direct object by entering into a checking relation with it. As discussed in 3.1, there is clear evidence that Blackfoot transitive finals (TA and TI) license a DP object in the syntax by means of formal feature-checking, and that IA finals fail to enter into such a checking relation.

While views differ as to the details and mechanisms involved, the consensus is that lexical verbs determine the theta role of their internal arguments (Grimshaw 1990; Jackendoff 1972, 1990; Rappaport Hovav and Levin 1998; and many others). For example, whether the internal argument is a patient, which undergoes a change of state, or a theme, which undergoes change of location, depends on the semantic content of the verb that theta-marks it. Similarly, the hypothesis that *v* theta-marks the external argument entails that the semantic content of *v* will determine whether this argument is an agent or an experiencer. The prediction for Blackfoot is that different theta roles are assigned by different finals. It appears that this prediction is borne out, at least for the verbs in Table 6. If we compare the agentive and experiencer verbs listed there, we find that all of the experiencer verbs have the finals *i'taki* (IA), *-i'tsi* (TI) and *-imm* (TA), and that none of the agentive verbs have these finals. Our Blackfoot consultant also commented that “*i'taki* means you feel something,” providing additional evidence that these finals theta-mark their external arguments as an experiencer.

Functional categories consist of a fixed inventory of grammatical items whose semantic content is frequently characterized in terms of formal features, and whose contribution to interpretation is systematic and predictable. Lexical categories, in contrast, are open classes, and elements in these classes have wide-ranging semantic content that does not lend itself to representation in terms of formal features. Their contribution to interpretation is often idiosyncratic and unsystematic. With these criteria in mind, we briefly consider the question of whether the semantic content of Blackfoot finals is like that of a functional or lexical category.

We observed above that experiencer finals have a specific interpretation related to the theta-role of the external argument they select. Other finals contain specific semantic content that is independent of their grammatical function. For example, Frantz (1991: 101) notes that there are specific finals that “indicate the instrument (usually a body part) involved.” Some of the verbs that contain a final meaning ‘with teeth’ are listed in Table 8; verbs that contain a final meaning ‘with hand’ are given in Table 9. Comparing the two lists, we note the existence of at least one minimal pair: *iipákkio'tsi* ‘burst by hand (TI)’ and *iipakksstsi* ‘burst with teeth (TI)’

Table 8: Verbs with final meaning ‘with teeth’

Verb Meaning	IA	TA	TI
‘bite off of’ ‘bite off (something)’	<i>ika'k-staki</i>	<i>ika'k-sipi</i>	<i>ika'k-stsi</i>
‘burst (with teeth)’	<i>ipakks-staki</i>	<i>ipakk-sip</i>	<i>ipakks-stsi</i>
‘pop/burst/crack/nip with the teeth’		<i>ipikk-sip</i>	
‘bite’	<i>sik-staki</i>	<i>sik-sip</i>	<i>sik-stsi</i>

Frantz & Russell 1995

Table 9: Verbs with final meaning ‘with hand’

Verb Meaning	IA	TA	TI
‘catch with hands’	<i>ikan-o'taki</i>	<i>ikan-o'to</i>	<i>ikan-o'tsi</i>
‘uproot, pull out (a small natural embedded ‘growth) by hand’	<i>ipohk-o'taki</i>	<i>ipohk-o'to</i>	<i>ipohk-o'tsi</i>
‘burst by hand’			<i>iipákki-o'tsi</i>
‘break off with one’s hands’ ‘break (s.t.)’	<i>omin-o'taki</i>	<i>omin-o'to</i>	<i>omin-o'tsi</i>
‘break apart (a wooden object) by hand’			<i>opaks-o'tsi</i>
‘dig out, hollow out by use of hand or finger’			<i>waatan-o'tsi</i>
‘mold, shape using the hand’			<i>yaakaahki-o'tsi</i>

Frantz & Russell 1995

Moreover, when different finals are added to the same root the resulting verbs may have distinct meanings. The stative II and IA verbs in table 10 are representative. Each row of the table contains a pair of related verbs that have

the same root but different finals, and different meanings. Although these shifts in meaning are related to the choice of animate or inanimate arguments, the specific semantic content of the various IA and II verbs cannot be compositionally determined from the meaning of the root and the final.

Table 10: II–IA stative verbs

Verb Meaning	II	IA
'be without design, pointless' 'be aimless'	<i>iksísst-a'pii</i>	<i>iksísst-a'pssi</i>
'be of fine quality' 'be handsome'	<i>itsów-a'pii</i>	<i>itsów-a'pssi</i>
'be bad' 'be bad, mean'	<i>ok-a'pii</i>	<i>ok-a'pssi</i>
'be delicate/fragile' 'be sensitive'	<i>ika'k-ii</i>	<i>ika'k-ssi</i>

Frantz & Russell 1995

We have seen that Blackfoot finals signaling membership in a given verb class have a variety of morphological shapes. The semantic evidence indicates that these represent different morphemes and not simply allomorphs of the same abstract functional morpheme. This suggests that finals belong to a lexical category.

In short, we have argued that Blackfoot finals have both the functional and lexical properties that characterize the category *v*: they theta-mark the external argument and syntactically license the direct object. In addition, we have shown that finals have open class semantic content and unpredictable effects on the meaning of the derived verb stem. These are semantic properties that characterize lexical categories, and distinguish Blackfoot finals from the abstract functional category postulated by Chomsky (1995) and Kratzer (1996): the latter has been characterized as a quasi-lexical functor, whereas Blackfoot finals appear to be quasi-functional lexical morphemes. The hypothesis that both are light verbs, a category with mixed properties, as proposed by Butt (2003), would allow for a unified treatment of this cross-linguistic variation.

Table 11: Mixed properties of *v*

Properties	Functional Category	Blackfoot Finals	Lexical Category
syntactic licenser of direct object	yes	yes	no
theta-marker	no	yes	yes
independent semantic content	no	yes	yes

## 6 Conclusion

In conclusion, we have argued that, contrary to the standard characterization (Bloomfield 1946), Blackfoot stem final morphemes do not encode transitivity. Consequently, the alternation between transitive and so-called intransitive verbs signals neither an aspectual shift nor a modification of the verb's (internal) argument structure. Rather, the difference is purely syntactic: verbs with a transitive final formally license a DP object in the syntax; verbs with an intransitive final do not, though they may have an NP or CP complement.

In addition to their syntactic function, the stem final morphemes discussed in this paper determine whether the verb has an external argument, and in cases where it does, the theta-role assigned to that argument. Blackfoot has a strict animacy requirement on external arguments which we analysed as a type of semantic selection imposed by the final. We concluded that finals must be *v*, a light verb that selects the external argument and formally licenses the direct object, as proposed by Chomsky (1995) and Kratzer (1996). Chomsky and Kratzer conceptualized *v* as an abstract element lacking phonetic content, but there is no principled reason why it should not be overt. Given the option to realize *v* overtly, our analysis of Blackfoot finals provides additional empirical support for this category.<sup>24</sup>

Chomsky characterizes *v* as a quasi-lexical functional category, based on its properties in languages like English. We found that Blackfoot *v* elements have the open class semantic content characteristic of a lexical category. A second difference between Blackfoot *v* and its English counterpart is that only the former imposes an animacy restriction on the external argument. We speculate that it is the lexical semantic content of Blackfoot *v* that imposes a semantic selectional restriction on the external argument (i.e. *s*-selects in the sense of Grimshaw 1979, 1990). In a language like English, *v* lacks this lexical semantic content and imposes no *s*-selectional restrictions on the external argument. Thus, the characterization of *v* as a functional or lexical category may be subject to cross-linguistic variation.

As it turns out, an animacy restriction on external arguments is not uncommon. For example, de Swart, Lamers and Lestrade (2008) point out that similar restrictions have been found in a wide range of languages, including Japanese (Kuno 1973), Jacaltec (Craig 1977), Dutch (van Voorst 1988), Lakota (Van Valin and LaPolla 1997) and Irish (Guilfoyle 1997). Our analysis predicts that in these languages *v* also has the semantic content of a

lexical category. If *v* is lexical we further predict that there may be significant variability in the specific selectional restrictions on the external argument in the different languages. It is a question for future research to determine whether these predictions are borne out.

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<sup>1</sup> Blackfoot is a Plains Algonquian language of Southern Alberta, Canada, and Northwestern Montana, U.S.A. It is considered an endangered language, with approximately 5100 speakers (Ethnologue website). We thank Rachel Ermineskin for teaching us about her language, and Jen Abel, Heather Bliss and Sara Johansson for their help with the fieldwork. Unless otherwise noted, all data come from our fieldwork.

<sup>2</sup> See for example Piggott 1989, Goddard 1990 and Frantz 1991.

<sup>3</sup> We use the terms subject and object for ease of exposition. There is in fact little evidence that grammatical relations play a role in the grammar of Algonquian languages (cf. Ritter and Rosen 2005, Ritter and Wiltschko 2004 for arguments that these languages lack subjects). Note also that traditional Algonquianists use the term **ACTOR** for the external argument of transitive verb and **GOAL** for the internal argument, rather than subject and (in)direct object.

<sup>4</sup> The following abbreviations are used in this paper: **1/2/3/4** - 1st/2nd/3rd/4th person; **AN** – animate; **BEN** – benefactive; **CONJ** – conjunctive paradigm; **CP** – complementizer phrase (clause); **DIR** – direct theme; **DEM** – demonstrative; **DUR** – durative; **DP** - determiner phrase; **IA** - intransitive animate; **II** – intransitive inanimate; **IMPERF** – imperfective; **IN** – inanimate; **INST** – instrument; **INTRANS** – intransitive; **INV** – inverse theme; **NONFACT** – non-factive; **NON-PRT** – non-particular (= general) number; **NP** - noun phrase; **PERF** – perfective; **PL** – plural; **PRON** – pronominal clitic; **PROX** – proximate; **PST** – past; **SG** – singular; **TA** – transitive animate; **TI** – transitive inanimate; **TRANS** – transitive; **TH** – theme.

<sup>5</sup> See Brittain (2003) for a similar proposal based on morphological evidence from a variety of other Algonquian languages.

<sup>6</sup> In fact the requirement is for an *underlying* direct object. This is the case for intransitive telic predicates, which are all unaccusative (e.g. *arrive*, *die*). We assume that the surface subject of this class of verbs is Merged as a direct object, and subsequently undergoes movement to subject position.

<sup>7</sup> In fact finals are also known as stem agreement markers.

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<sup>8</sup> The *for an hour/in an hour* test is inapplicable in Blackfoot because this language makes no formal distinction between time frame adverbials and durational ones. Thus, a phrase like *n'ito'takoohsin* 'one hour' is ambiguous between these two interpretations.

<sup>9</sup> See Tenny (2000: 313-315) for an argument that *almost* is vague rather than scopally ambiguous. She correctly observes that while both 'almost start' and 'almost finish' interpretations are salient, what qualifies as *almost* V-ing is 'limited only by the imagination of the speaker'. We have elected to include this test as because it is widely used to distinguish between telic and atelic events. What is important for our purposes is the fact that (6)b can be interpreted as almost finished, while (6)a cannot.

<sup>10</sup> In order to elicit this data, the consultant was presented with two pictures: one showing a person with a half-eaten fish on his plate, and the other showing a person with nothing but fish bones on his plate. For each picture, the speaker was asked to judge whether the sentences in (14) and (15) could be used to describe the picture. Like Dunham, we found that when the imperfective prefix *a-* was present, the sentence could be used to describe accomplishments in progress, but not completed accomplishments, and that when *a-* was not present, the sentence could be used for completed accomplishments only. These results were replicated with other accomplishments, including 'fix a/that wagon' and 'sew a/that shirt'. For activities ('sleep,' 'dance,' and 'run'), the same picture could be described using verbs both with and without the imperfective prefix.

<sup>11</sup> There is no parallel alternation between II and IA verbs based on the DP or NP status of the single argument.

<sup>12</sup> This term is due to Branigan and McKenzie (2000, 2002), who discuss this phenomenon in Innu-aimûn, another Algonquian language. It has also been called copying from complement (Frantz 1978) and copy-to-object (Dahlstrom 1991).

<sup>13</sup> As a reviewer points out, the addition of the benefactive final might alternatively be viewed as indicative of a *lexical* valence increasing operation, as argued by proponents of LFG Lexical Mapping Theory (Bresnan and Moshi 1990) or Lexical Decomposition Grammar (Wunderlich 2000). If this were indeed the case, then the existence of a benefactive final would indicate that at least some finals signal changes in argument structure. In fact, Frantz (1991) distinguishes between abstract finals, which only indicate verb class, and concrete finals, which are valence changing morphemes that derive new verbs of a particular class (TA or IA). The concrete finals include causative, benefactive, accompaniment, reflexive and reciprocal morphemes. In most cases the concrete finals are added to

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stems consisting of the verb root and an abstract final. The benefactive final *-o*, which is added to the verb root as shown in (25), is an exception, but there is another benefactive final, *-(o)mo*, which is added to TA verb stems (cf. Frantz 1991: 104-5). The evidence from CCA discussed in the last subsection strongly argues that abstract finals are syntactically determined. Since concrete finals are added after abstract finals, we suggest that they, too, are syntactically determined.

<sup>14</sup> Theme suffixes express relative animacy of the subject and object. DIRECT theme suffixes indicate that the subject outranks the object and INVERSE theme suffixes indicate that the object outranks the subject. The suffix *-yii* in (25)b is a direct theme suffix, indicating here that a 3rd person subject acts on a 4th person object.

<sup>15</sup> As part of the example reproduced in the text as (32), Frantz lists the same translation as (26), but in the accompanying discussion he suggests that translation given here is in fact a more literal rendering of his Blackfoot example. The selectional restriction on subjects of transitive verbs still applies in examples like (27), with the result that the unspecified subject is also restricted to animate beings capable of will. Both (26) and (27) were further modified by the addition of a morphemic analysis and glosses.

<sup>16</sup> The term PSEUDOTRANSITIVE is due to Taylor (1969: 165). More recently, Frantz (1990: 41) coined the term PARATRANSITIVE for this type of IA verb. We adopt Taylor's original terminology, as we assume that such objects are syntactically inactive. See section 5 for discussion.

<sup>17</sup> The gender of a Blackfoot DP can be deduced from the form of the plural suffix attached to the noun and demonstrative determiner: In an inanimate DP the plural suffix that appears on both categories is *-istsi*, whereas in an animate DP, the plural suffix is *-iksi*. In order to determine whether a gender switching strategy is possible, Johansson replaced the inanimate plural suffix with the animate one, as shown in (28)c.

<sup>18</sup> Folli and Harley (2008) point out that other semantic classes of unergative verbs require other kinds of teleological capacity. They observe, for example, that English verbs of sound emission such as *whistle*, *ring*, and *squeak* are unergative verbs. They all require an argument that denotes an entity with the necessary constitution to make the named sound, accounting for the contrasts below:

- (i) John/the train/the kettle/\*the bullet whistled.
- (ii) The phone/the bell/\*John rang.

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The prediction for Blackfoot is that there may be unergative II verbs if they require an external argument with a teleological capacity other than animacy, such as the ability to emit a sound. The Blackfoot dictionary lists the following II verbs of sound emission (all of which are related to IA verbs with the same meaning).

(iii) *isatsiksi* ‘jingle’; *ohtako* ‘make a sound’; *isitsipohtako* ‘be [sic] a sound that breaks the silence’

In order to test the prediction, we need to determine whether these verbs are unergative or unaccusative. We leave this question for future research, pending the development of language internal tests for unaccusativity.

<sup>19</sup> The decision as to which verb stems to provide main entries for is not entirely systematic, and the list of related stems is not exhaustive (Donald Frantz p.c.). Nevertheless, it is clear from the presentation of verb stems in the dictionary that Frantz and Russell adopt the standard Algonquianist view, i.e. they treat stems consisting of same root but different finals as derivationally related, but distinct lexical items.

<sup>20</sup> The dictionary includes six examples of II verbs related to transitive verbs, but in each case the II verb is clearly unaccusative. For example, the main entry for *istsitsii* ‘melt’ indicates that this is an II verb whose single argument undergoes the change of state named by the verb. The entry for this verb lists AI, TI and TA related stems, all meaning melt or thaw, suggesting that these related stems are all causative counterparts. Frantz (p.c.) confirms that the decision to list related verbs that share the property of (not) having an external argument is based on their intuitions about which verbs are related, rather than formal criteria, and that these six entries, which list causative-inchoative pairs, are inconsistent with their own criteria.

<sup>21</sup> The Blackfoot noun *atsís* ‘pants’ is grammatically animate, and thus requires an IA verb form, rather than an II one.

<sup>22</sup> More recent work has proposed that extended projections essentially define the lexical categories. In other words, *v*, *n*, and *a* are functional heads that combine with category neutral roots to derive verbs, nouns and adjectives (Embeck & Marantz 2006, Landau this volume). Our treatment of Blackfoot verbs is essentially compatible with this more radical approach.

<sup>23</sup> The assumption that only lexical and quasi-lexical categories assign theta-roles is not uncontroversial. For example, Doron (2003), Folli and Harley (2005) and Alexiadou (this volume) all assume that *v* is responsible for assigning a theta-role to the external argument, and that different members of this category, (or a second functional

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category Voice), assign different theta-roles (agent vs causer), but they do not assume that *v* is a lexical category. Regardless of whether the ability to assign a theta role is a diagnostic of (quasi-)lexical status, in the remainder of this section we discuss other properties of Blackfoot finals that argue against treating them as either purely functional or purely lexical morphemes.

<sup>24</sup> See Doron (2003) for persuasive arguments that Semitic template morphology also realizes *v* overtly.

## References

- Baker, Mark C. 1988. *Incorporation: A Theory of Grammatical Function Changing*. Chicago: The University of Chicago Press.
- Bliss, Heather. 2007. 'Structuring Information in Blackfoot: Against an A'-Agreement Analysis of Cross-Clausal Agreement,' unpublished ms. University of British Columbia.
- Bloomfield, Leonard. 1946. 'Algonquian,' in Harry Hoijer (ed.), *Linguistic Structures of Native America*. New York: Viking Fund Publications in Anthropology, 6: 85-129.
- Branigan, Phil and Marguerite MacKenzie. 2000. 'How much syntax can you fit into a word? Late insertion and verbal agreement in Innu-aimûn,' presented at WSCLA 5, University of Toronto.
- Branigan, Phil and Marguerite MacKenzie. 2002. 'Altruism, A'-Movement, and Object Agreement in Innu-aimûn,' *Linguistic Inquiry* 33: 385-408.
- Bresnan, Joan and Lioba Moshi. 1990. 'Object Asymmetries in Comparative Bantu Syntax,' *Linguistic Inquiry* 21: 147-185.
- Brittain, Julie. 2003. 'A distributed morphology account of the syntax of the Algonquian verb,' in S. Somesfalean and S. Burrell (eds.), *Proceedings of the 2003 Annual Conference of the Canadian Linguistic Association*. Département de linguistique et de didactique les langues. Université du Québec à Montreal. 26-41.
- Butt, Miriam. 2003. 'The light verb jungle,' *Harvard Working Papers in Linguistics*, Volume 9. 1-49.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2000. 'Minimalist inquiries: The framework,' in Roger Martin, David Michaels, and Juan Uriagereka (eds.), *Step by step: Essays on Minimalist syntax in honor of Howard Lasnik*. Cambridge, MA: MIT Press. 89-155.
- Craig, Colette. 1977. *The Structure of Jacalteco*. Austin, TX: University of Texas Press.
- Dahlstrom, Amy. 1991. *Plains Cree Morphosyntax*. New York: Garland Press.
- Dunham, Joel. 2007. 'The "durative" in Blackfoot: Understanding imperfectivity,' presented at SULA 4, Universidade de São Paulo.
- Doron, Edit. 2003. 'Agency and voice: The semantics of the semitic templates,' *Natural Language Semantics* 11: 1-67.

- Dowty, David R. 1977. 'Toward a semantic analysis of verb aspect and the English "imperfective" progressive,' *Linguistics and Philosophy* 1: 45-78.
- Embick, David and Alec Marantz. 2006. Architecture and Blocking. Unpublished ms., University of Pennsylvania and MIT.
- Ethnologue website [http://www.ethnologue.com/show\\_language.asp?code=bla](http://www.ethnologue.com/show_language.asp?code=bla) 20 June 2008.
- Folli, Raffaella and Heidi Harley. 2005. 'Flavors of v: Consuming results in Italian and English,' in Paula Kempchinsky and Roumyana Slabakova (eds.), *Aspectual Inquiries*. Dordrecht: Springer. 95-120.
- Folli, Raffaella and Heidi Harley . 2008. 'Teleology and animacy in external arguments,' *Lingua* 118: 190-202.
- Frantz, Donald G. 1978. 'Copying from complements in Blackfoot,' in Eung-Do Cook and Jonathan Kaye (eds.), *Linguistic Studies of Native Canada*. Vancouver: University of British Columbia Press. 89-110.
- Frantz, Donald G. 1991. *Blackfoot Grammar*. Toronto: University of Toronto Press.
- Frantz, Donald G. and Norma Jean Russell. 1995. *Blackfoot Dictionary of Stems, Roots, and Affixes*. Toronto: University of Toronto Press.
- Glougie, Jennifer R.S. 2000. *Topics in the Syntax and Semantics of Blackfoot Quantifiers and Nominals*. Unpublished M.A. thesis. University of British Columbia.
- Goddard, Ives. 1990. 'Primary and secondary derivation in Algonquian,' *International Journal of American Linguistics* 56: 449-483.
- Grimshaw, Jane. 1979. 'Complement selection and the lexicon,' *Linguistic Inquiry* 10: 279-326.
- Grimshaw, Jane. 1990. *Argument Structure*. Cambridge, MA: MIT Press.
- Guilfoyle, Eithne. 1997. 'The verbal noun in Irish nonfinite clauses,' in V. Capková and A. Ahlqvist (eds.), *Dán do Oide, Essays in Memory of Conn Ó Cléirigh*. Dublin: Institiúid Teangeolaíochta Éireann. 187-200.
- Horvath, Julia and Tal Siloni. 2002. 'Against the little-v hypothesis,' *Rivista di Grammatica Generativa* 27: 107-122.
- Jackendoff, Ray. 1972. *Semantic Interpretation in Generative Grammar*. Cambridge, MA: MIT Press.
- Jackendoff, Ray. 1990. *Semantic Structures*. Cambridge, MA: MIT Press.
- Johansson, Sarah. 2007. 'Sentience and stem agreement in Blackfoot,' presented at 39th Algonquian Conference, York University, Toronto.

- Kratzer, Angelika. 1996. 'Severing the external argument from its verb,' in J. Rooryck and L. Zaring (eds.), *Phrase Structure and the Lexicon*. Dordrecht: Kluwer Academic Publishers. 109-137.
- Kuno, Susumo. 1973. *The Structure of the Japanese Language*. Cambridge, MA: MIT Press.
- Marantz, Alec. 1984. *On the Nature of Grammatical Relations*. Cambridge, MA: MIT Press.
- Piggott, Glynn. 1989. 'Argument structure and the morphology of the Ojibwa Verb,' in Donna B. Gerdts and Karin Michelson (eds.), *Theoretical Perspectives on Native American Languages*. Albany, NY: SUNY Press. 176-208.
- Pylkkänen, Liina. 2008. *Introducing Arguments*. Cambridge, MA: MIT Press.
- Rappaport Hovav, Malka and Beth Levin. 1998. 'Building Verb Meanings,' in M. Butt and W. Geuder, (eds.), *The Projection of Arguments: Lexical and Compositional Factors*. Stanford: CSLI Publications. 97-134.
- Reinhart, Tanya and Tal Siloni. 2005. 'The lexicon-syntax parameter: Reflexivization and other arity operations,' *Linguistic Inquiry* 36: 389-436.
- Ritter, Elizabeth and Sara Thomas Rosen. 2001. 'The interpretive value of object agreement,' *Language Sciences* 23: 425-451.
- Ritter, Elizabeth and Sara Thomas Rosen. 2005. 'Agreement without A-positions: A closer look at Algonquian,' *Linguistic Inquiry* 36: 648-660.
- Ritter, Elizabeth and Martina Wiltschko. 2004. 'The lack of tense as a syntactic category: Evidence from Blackfoot and Halkomelem,' presented at the 39th International Conference on Salish and Neighbouring Languages, North Vancouver and Canadian Linguistics Association, University of Manitoba, Winnipeg.
- Ritter, Elizabeth and Martina Wiltschko. 2006. 'Relating verb stems in Blackfoot: The contribution of argument structure to stem agreement,' presented at the 38th Annual Algonquian Conference, University of British Columbia.
- de Swart, Peter, Monique Lamers and Saunder Lestrade. 2008. 'Animacy, argument structure, and argument encoding,' *Lingua* 118: 131-140.
- Taylor, Allan R. 1969. *A Grammar of Blackfoot*. Unpublished Ph.D. dissertation. University of California, Berkeley.

- Tenny, Carol L. 1994. *Aspectual Roles and the Syntax-Semantics Interface*. Dordrecht: Kluwer Academic Publishers.
- Tenny, Carol L. 2000. 'Core events and adverbial modification,' in Carol Tenny and James Pustejovsky (eds.), *Events as Grammatical Objects*. Stanford: CSLI Publications. 285-334.
- van Hout, Angeliek. 1998. *Event Semantics of Verb Frame Alternations: A Case Study of Dutch and its Acquisition*. New York: Routledge Outstanding Dissertations in Linguistics.
- Van Valin, Robert D. and Randy LaPolla. 1997. *Syntax: Structure, Meaning and Function*. Cambridge, UK: Cambridge University Press.
- van Voorst, Jan. 1988. *Event Structure*. Dordrecht: John Benjamins.
- Wunderlich, Dieter. 2000. 'Predicate composition and argument extension as general options,' in Barbara Stiebels and Dieter Wunderlich (eds.), *Lexicon in Focus*. Berlin: Akademie Verlag. 247-270.