

# Predicate features and imperfectivity in Blackfoot\*

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**Abstract:** This paper argues that imperfectives can contain presuppositions about the types of predicates they combine with, using data from Blackfoot (Algonquian). I show that while a habitual interpretation of the imperfective is available for all predicate types except for homogenous states, the Blackfoot imperfective is infelicitous on ‘in-progress’ achievements and states which hold at the reference time of the utterance. The universal quantificational analysis of the Blackfoot imperfective in Dunham (2008) (based on Bonomi 1997) cannot explain this gap. I suggest that the imperfective is prohibited on predicates which are not ‘extended in time’, just like the English progressive (Rothstein 2004). I argue that the Blackfoot imperfective and the English progressive contain a presupposition that the predicates they combine with are [+extended]. Finally, I suggest an expansion of recent typologies of imperfectivity to include language-specific restrictions of predicate features.

**Keywords:** Blackfoot, imperfective, events, Aktionsarten, aspect

## 1 Introduction

The goal of this paper is to show that the interpretations of imperfective aspect may be constrained by the Aktionsart of the predicate it combines with. I use data from Blackfoot (Algonquian) and English to argue for a parameterized solution, whereby imperfectives may contain presuppositions about predicate features. This paper augments other typologies of imperfectivity, many of which focus on the different interpretations of imperfectivity without considering how the interpretations are restricted by predicate types cross-linguistically (Arregui, Rivero, and Salanova 2014; Deo 2009).

There are two main contributions of this paper to Blackfoot linguistics. First, I describe language-internal diagnostics to distinguish five Aktionsarten, which is a wider range of predicate types than previously considered (Chin 2007; Dunham 2007; Reis Silva and Matthewson 2007). I show that there are at least two types of stative predicates in Blackfoot, one of which includes an initial transition into the resulting state. Second, I show that a universal quantificational analysis of imperfectivity (e.g. Bonomi 1997; Deo 2009; Dunham 2008) cannot account for the distribution and interpretations of the Blackfoot imperfective without further modification.

The paper is organized as follows. In Section 2 I introduce the Blackfoot imperfective and the three interpretations I consider in this paper. In Section 3 I describe five different Aktionsarten in Blackfoot. Section 4 surveys the available interpretations of the imperfective for each predicate type. In Section 5 I show that a previous analysis of the Blackfoot imperfective in Dunham (2008) cannot explain the data in Section 4, and I argue in Section 6 that the imperfective carries a presupposition

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that the predicate is ‘extended in time’ (Rothstein 2004). I conclude in Section 7 with implications for a typology of imperfectivity.

## 2 Interpretations of the Blackfoot imperfective

Imperfectives have three common cross-linguistic interpretations: the progressive interpretation (for eventive predicates which are on-going at the time of reference), the continuous interpretation (for lexically stative predicates which hold at the time of reference), and a habitual interpretation (cf. Comrie 1976 and Deo 2009; the terminology is Deo’s).

Imperfectivity is expressed in Blackfoot via a verbal prefix *a-*. The grammars and descriptive literature describe two interpretations of the imperfective: progressive and habitual (Frantz 2009; Taylor 1969; Uhlenbeck 1938). Both interpretations exist for imperfective activities and accomplishments, shown in (1) and (2) below. Subsequent research showed that imperfective states only allow a habitual interpretation, where it means there is a habitual ingress into the state (Dunham 2007; Reis Silva and Matthewson 2007). The sentence in (3) means that I often or regularly become hungry.<sup>1</sup> (RSM:2007 = Reis Silva and Matthewson 2007).

(1) ACTIVITY	(2) ACCOMPLISHMENT	(3) STATE
nitáihpiyi	nitáókooysskaa	nitsikáístso’kini
nit-a-ihpiyi	nit-a-okooyi-hkaa	nit-ik-a-istso’kini
1-IPFV-dance.AI	1-IPFV-house-acquire.AI	1-DEG-IPFV-hungry.AI
‘I am dancing.’ or	‘I am building a house.’	#‘I am hungry.’
‘I dance.’	or ‘I build houses.’	‘I get hungry’ (RSM:2007)

The above data shows that the interpretations which are available are constrained by the predicate type. The only systematic study of Blackfoot predicate types remains unpublished (Chin 2007). Therefore in the next section, I present a fuller survey of predicate types than previously explored, including achievements and two types of states. My results show that much remains to be learned of predicate types in Blackfoot, especially of stative predicates.

## 3 Predicate types in Blackfoot

I distinguish five predicate types: activities, accomplishments, achievements, inchoative states, and homogenous states. The classes are based on language-internal diagnostics, such as the interaction of lexical aspect with viewpoint aspect, expressed via prefixes (following Chin 2007). I also consider culmination entailments and the meaning of predicates when combined with *when*-clauses (following Bar-El 2005; Dunham 2007). Further data is given in the Appendix.

A first division of predicate types is apparent with the interpretation of a bare predicate, which distinguishes activities, accomplishments, and achievements, as a group, from inchoative and homogenous states. Bare activities (4), accomplishments (5), and achievements (6) yield perfective

<sup>1</sup>Examples cited from other sources include the original vernacular and free translation lines, but I have changed the morpheme and gloss lines to match the rest of this paper. Abbreviations not in the Leipzig Glossing Rules include : AI = animate intransitive, AN = animate, CMP = comparative, CNJ = conjunct order, CONJ = conjunction, DEG = degree marker, DIR = direct, II = inanimate intransitive, IN = inanimate, INVS = invisible, PRX = proximate, TA = transitive animate, TI = transitive inanimate.

readings: the event instantiating the predicate has ended by the time of the utterance, and the reference time contains the event time (Chin 2007; Dunham 2007; Reis Silva and Matthewson 2007).

(4) ACTIVITY nítsspiyi nit-ihpiyi 1-dance.AI 'I danced.' (RSM:2007)	(5) ACCOMPLISHMENT nitsíkooysskaa nit-ikooyi-hkaa 1-house-acquire.AI 'I built a house.' (RSM:2007)	(6) ACHIEVEMENT nítóhkoonii'pya nit-ohkooni-'p-yi=aawa 1-find.TI-DIR-PL=PRX.PL 'I found them.'
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Bare inchoative states are ungrammatical; all inchoative states must co-occur with a prefix, as discussed in Section 3.3. Examples (7) and (8) show stage-level (S-level) and individual-level (I-level) inchoative states, respectively. S-level states generally hold for a short period of time, while I-level states hold for a longer period or indefinitely (Kratzer 1995). In contrast to activities, accomplishments, and achievements, bare homogenous states yield an progressive interpretation, shown in (9): the predicate holds at the reference time.

(7) S-LEVEL INCHOATIVE STATE *nitsístso'kini nit-ístso'kini 1-hungry.AI Intended: 'I am hungry.'	(8) I-LEVEL INCHOATIVE STATE *sspitáá isspitaa-wa tall.AI-3 Intended: 'Joel is tall.'	(9) HOMOGENOUS STATE imitááya imitaa-yi=aawa dog-PL=PRX.PL 'They are dogs.'
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### 3.1 Activities vs. accomplishments

Accomplishments carry an entailment of culmination, while activities do not. A bare accomplishments like *iikóoysskaa* 'he built a house' in (10a) cannot be followed by a predicate prefixed with *saaki-* 'still' plus *a-* (meaning the house is still being built), because the bare accomplishment entails that the house was built completely. The imperfective predicate in (10b) is felicitous when followed by a predicate modified with *saaki-* plus *a-* 'IPFV'. (See also an example using *iyaakokiiyi* 'put up a tipi (AI)' in Dunham 2007.) Note that imperfective predicates exhibit the Imperfective Paradox, because imperfective accomplishments remove the entailment of culmination inherent to accomplishments (cf. Dowty 1979; Landman 1992).

(10) a. #matónni iikóoysska matonni iikooyskaa-wa yesterday house.acquire.AI-3	kii ánohk kii annohk CONJ now	sáákyakooysskaa saaki-a-okooyskaa-wa still-IPFV-house.acquire.AI-3
'Yesterday he built a house, and right now he's still building his house.'		
Speaker's comment: that means he finished the house		
b. matónni áokooysska matonni a-okooyskaa-wa yesterday IPFV-house.acquire.AI-3	kii ánohk kii annohk CONJ now	sáákyakooysskaa saaki-a-okooyskaa-wa still-IPFV-house.acquire.AI-3
'Yesterday he was building a house, and right now he's still building his house.'		

In contrast, for activities like *iikstaki* ‘read (AI)’, either a bare predicate, (11a), or an imperfective predicate, (11b), may be followed by a predicate modified with *saaki-* ‘still’ plus *a-* ‘IPFV’, meaning the reading is still on-going.

- (11) a. matónni iikstaki kii ánohk ksistsikóyihk sáákyaokstaki  
 matonni iikstaki-wa kii annohk ksistsikoyihka saaki-a-okstaki-wa  
 yesterday read.AI-3 CONJ now today still-IPFV-read.AI-3  
 ‘Yesterday she did some reading, and right now today she is still reading.’
- b. matónni áókstaki kii ánohk ksistsikóyihk sáákyaokstaki  
 matonni a-okstaki-wa kii annohk ksistsikoyihka saaki-a-okstaki-wa  
 yesterday IPFV-read.AI-3 CONJ now today still-IPFV-read.AI-3  
 ‘Yesterday she was reading, and right now today she is still reading.’

### 3.2 Achievements

Achievements are the only instantaneous predicate; the other four can all be predicated of events with some non-instantaneous duration. The evidence is that achievements can only occur with *saaki-* ‘still’ plus *a-* ‘IPFV’ or with *iksist-* ‘finish’ in habitual contexts, while other predicate types also allow a progressive or continuous interpretation.<sup>2</sup> Both of these judgements differ from those reported in Chin (2007), which may have been misinterpretations of English translations with ‘now’.

- (12) anna Tomas saakiaistohkohpi  
 ann-wa Tomas-wa saaki-a-isttohkohpi-wa  
 DEM-PRX Tomas-PRX still-IPFV-fall.AI-3

‘Tomas is still falling down.’

Only good on a habitual reading; i.e. said of a toddler learning to walk. It cannot be said in a context where Tomas is in the middle of a fall. (Based on Chin 2007)

- (13) anná Tomas iksistsisttohkohpi  
 ann-wa Tomas-wa iksist-isttohkohpi-wa  
 DEM-PRX Tomas-PRX finish-fall.AI-3

‘Tomas finished falling.’

Only good on a habitual reading; i.e. said of a toddler once he walks consistently and does not fall. It cannot be said in a context after Tomas falls down, even when the fall is longer than an instant (e.g. a tumble down the stairs). (Based on Chin 2007)

Other predicate types allow a habitual and a progressive/continuous interpretation with *saaki-a-*, shown in (14) with an accomplishment. Predicates with *iksist-* ‘finish’ mean that a single event instantiated by the predicate is complete, (15). Although the evidence is preliminary, the last context suggests that accomplishments with *iksist-* are infelicitous in habitual contexts, unlike achievements.

<sup>2</sup>Because achievements are instantaneous, I also expect they will only be felicitous in a habitual or semelfactive context when combined with a temporal adverb like ‘five minutes’ (Rose-Marie Déchaine, p.c.).

- (14) *sáákiaokooysskaa*  
*saaki-a-okooysskaa-wa*  
 still-IPFV-house.acquire.AI-3  
 ‘He is still building a house,’ or  
 ‘He is still building houses.’ (Re-elicited from Chin 2007)
- (15) *iksistókooysskaa*  
*iksist-okooysskaa-wa*  
 ‘He finished building a house.’  
 ✓ He completed the whole house.  
 ✗ He left off in the middle of building the house.  
 ✗ He retired and will not be building houses anymore. (habitual) (Based on Chin 2007)

### 3.3 Inchoative states

I propose that inchoative states in Blackfoot are gradable predicates and are complex, consisting of an instantaneous change of state plus the resulting state. The inspiration for this analysis and the term ‘inchoative state’ are both from Bar-El (2005), who discusses inchoative states in *Skwxwú7mesh*. Blackfoot inchoative states have also been called Change-and-State predicates (Chin 2007; Dunham 2007). This section discusses general properties of inchoative states in Blackfoot, as well as diagnostics which distinguish them as a class from other predicate types.

Two pieces of evidence show that inchoative states are gradable predicates: (1) they occur with a degree marker prefix *ik-*, and (2) they can occur in comparative and superlative constructions. As shown in (7) and (8), a bare predicate (i.e. with no other prefixes besides a person marker) is ungrammatical. These predicates are normally prefixed with *ik-* ‘DEG’, where they express a state which holds at a salient reference time of the utterance, (16) and (17).

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| <p>(16) <i>iksistso’kini</i><br/> <i>ik-isttso’kini-wa</i><br/>     DEG-hungry.AI-3<br/>     ‘She is hungry.’</p> | <p>(17) <i>iksspita</i><br/> <i>ik-sspita-wa</i><br/>     DEG-tall.AI<br/>     ‘He is tall.’</p> |
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The prefix *ik-* is likely a degree marker (Rose-Marie Déchaine, p.c.) It is often translated as ‘very’ by speakers, especially when the vowel is lengthened and spoken with high pitch, (18). It also can occur with intensifiers like *sstonnat-* ‘extremely, dangerously’, (19).

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|---|---|
| <p>(18) <i>ííkspita</i><br/> <i>iik-sspitaa-wa</i><br/>     DEG-tall.AI-3<br/>     ‘He is very tall.’</p> | <p>(19) <i>ikstónnatsspita</i><br/> <i>ik-sstonnat-sspitaa-wa</i><br/>     DEG-extremely-tall.AI-3<br/>     ‘He is <i>really</i> tall.’</p> |
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These predicates can also occur in comparative (20) and superlative (21) constructions.

- (20) *otsítsksspitaami*                      *otákkaiks*                      (21) *iihkanáísspitaami*                      *otákkaiks*  
*otsítsk-sspitaam-yii-wa*    *ot-akkaa-iksi*                      *iihkana-isspitaam-yii-wa*    *ot-akkaa-iksi*  
 CMP-tall.AI-TA-DIR-3                      3-friend-AN.PL                      all-tall.AI-TA-DIR-3                      3-friend-AN.PL  
 ‘He is taller than his friends.’                      ‘He is the tallest of his friends.’

Inchoative states are complex predicates which include both an initial transition and a result state. Both parts are linguistically accessible by multiple constructions.<sup>3</sup> The initial transition is picked out by predicates prefixed with *it-*, *iksist-* ‘finish’, and *akaa-* ‘PRF’. Example (22) includes the relative root prefix *it-*, which links the predicate to the time of the *when*-clause (Bliss 2014; Frantz 2009). This example makes the inchoative nature of the predicate clear.

- (22) *nitáo’taatsímaahsi*                      *anááhk*                      *Píítaaki*                      *nitsítsistso’kini*  
*nit-a’-o’taatsiim-aa-hsi*    *ann-wa-hka*                      *Piitaakii-wa*    *nit-it-istso’kini*  
 1-when-meet.TA-DIR-CNJ    DEM-PRX-INV    Piitaakii-PRX    1-LOC-hungry.AI  
 ‘When I met Piitaaki, I got hungry.’

An inchoative state plus *iksist-* ‘finish’ means that the instantaneous transition into the state is finished. This judgement differs from that in Chin (2007), who argued that inchoative states with *iksist-* ‘finish’ have two interpretations. The first is that the transition into a state was halted, and the second is that the resulting state ceased to be. However, I found that only the former context was good. Example (23a) is felicitous in a context where a transition into a state of being tall was completed. Example (23b) was elicited in a context where a resulting state ceases to be. Here, a tall individual ceases to be tall once he is elderly and shrinks a few inches; i.e. he has left the state of being tall. An inchoative state plus *iksist-* ‘finish’ is not felicitous in this context.

- (23) a. *otá’yiiipoohsi*                      *iitsiksístsspita*  
*ot-a’-yiiipo-hsi*                      *iit-iksist-sspitaam-wa*  
 3-when-summer.II-CNJ    LOC-finish-tall.AI-3  
 ‘In the summertime was when he stopped growing tall.’  
 (He did all his growing, and didn’t grow after that.)
- b. *Context: an old person shrinks and is no longer tall.*  
 \**anááhk*                      *Saako*                      *iksístsspitaam*  
*ann-wa-hka*                      *Saako-wa*                      *iksist-sspitaam-wa*  
 DEM-PRX-INV    Saako-PRX    finish-tall.AI-3  
 Intended: ‘Saako stopped being tall.’

The perfect *akaa-* locates the reference time after the run-time of the event, or a portion of the event, which instantiates the predicate. Perfect activities are usually translated as ‘has P-ed’, shown with the activity ‘dance’ in (24), which shows that the reference time is located after the run-time of the entire event of dancing.

<sup>3</sup>I have assumed that the initial transition into the state is instantaneous, but more work would be needed to see if the transition itself could take place over a non-instantaneous interval (Martina Wiltschko, p.c.).

- (24) Anna Rafa akaaihpiyi  
 ann-wa Rafa-wa akaa-ihpiyi-wa  
 DEM-PRX Rafa-PRX PRF-dance-3  
 ‘Rafa has already danced.’ (Re-elicited from Chin 2007)

However, an inchoative state plus *akaa-* ‘PRF’ is usually translated as ‘is/was P’, i.e. that the state holds at the reference time. The perfect targets the transition into the state, not the run-time of the entire predicate, and an inchoative state with the perfect prefix locates the reference time after the initial inception of the state.<sup>4</sup>

- (25) (ánohk) aná apí’saaki ákaisttso’kini  
 (annohk) ann-wa api’saakii-wa akaa-isttso’kini-wa  
 (now) DEM-3 Coyote.Woman-PRX PRF-DEG-hungry.AI-3  
 ‘(Right now) Coyote Woman is hungry,’ or ‘(Right now) Coyote Woman has gotten hungry.’

The result state of inchoative states is accessed not only by the predicate with the degree marker *ik-*, but also by predicates prefixed with *saaki-* ‘still’ plus *a-* ‘IPFV’. Example (26) minimally differs from (22) by using the prefix *ik-* ‘DEG’ instead of *it-* ‘LOC’. Example (26) references the result state while (22) references the initial transition into the state.

- (26) nitáo’taatsímaahsi anááhk Píitaaki nitsiksísttso’kini  
 nit-a’-o’taatsiim-aa-hsi ann-wa-hka Piitaakii-wa nit-ik-isttso’kini  
 1-when-meet.TA-DIR-CNJ DEM-PRX-INV S Piitaakii-PRX 1-DEG-hungry.AI  
 ‘When I met Piitaaki, I was hungry.’

Example (27) uses the prefixes *saaki-* ‘still’ and *a-* ‘IPFV’ and can only mean that Joel is still in the state of being tall, and cannot mean that Joel is still becoming tall.

- (27) anna Joel saakiaisspita  
 ann-wa Joel-wa saaki-a-sspita-wa  
 DEM-PRX Joel-PRX still-IPFV-tall.AI  
 ‘Joel is still tall.’  
 #‘Joel is still growing taller’ (Re-elicited from Chin 2007)

In sum, inchoative states are gradable predicates which include an initial transition and a result state. Both parts of the complex predicate are linguistically accessible and referenced by multiple different constructions. Inchoative states include both S-level and I-level states (see also the appendix), though more elicitation would be needed to see whether the two groups behave differently.

### 3.4 Homogenous states

All examples I have of homogenous states are nominal predicates and do not occur with *ik-* ‘DEG’, as was shown in (9). They are also uniformly individual-level states which hold for long periods of

<sup>4</sup>Note that the result state is linguistically accessible via multiple constructions, including predicates prefixed with *ik-* and *iksist-*. For this reason, I assume that inchoativity is inherent to the predicate class, and does not arise from the denotation of the perfect, as has been argued for Niuean (Dhillon, Lee, and Massam 2009).

time or indefinitely (Kratzer 1995).<sup>5</sup> Unlike inchoative states, homogenous states are ungrammatical with *akaa-* ‘PRF’, (28) and *iksist-* ‘finish’ (29). Because these are the two prefixes which targeted the inception into inchoative states, I take this to mean that homogenous states do not include an initial transition into the state.

(28) \*ákaitsikinya  
 akaa–itsikin–yi=aawa  
 PRF–shoe–PL=PRX.PL  
 Intended: ‘They are shoes.’

(29) \*iksístsitsikinyaa  
 iksist–itsikin–yi=aawa  
 finish–shoe–PL=PRX.PL  
 Intended: ‘They aren’t shoes anymore.’  
 Intended: ‘They stopped being shoes.’

To summarize, I have shown that Blackfoot has at least five distinct predicate types, including two states. Inchoative states are gradable predicates which include an initial transition into the state, while homogenous states are nominal predicates which do not include this initial transition. The diagnostics laid out here should be applied to other types of predicates in the future. For instance, I have not considered cognitive states, such as *waakomimm* ‘love (TA)’ or *issksino* ‘know (TA)’, or locative states, such as *-opii* ‘sit(AI)’ and *-ihtsi* ‘be positioned (II)’. In the next section, I discuss the distribution and interpretations of the imperfective *a-* on these five predicate types.

#### 4 Distribution of Blackfoot imperfective

In this section I consider the interaction of the three imperfective interpretations from Section 2 with the predicate types from Section 3. I show that imperfective activities, accomplishments, and inchoative states can have either a progressive or a habitual interpretation. Imperfective achievements are only felicitous in habitual contexts, while homogenous states cannot occur with *a-* at all. I used two methods to elicit these judgements. First, a context appropriate to a progressive or habitual interpretation was given to the speaker before asking the target sentence (Matthewson 2004). Second, the target sentence was modified with the adverbials *ánohk* ‘now’ and *kanáiksistsikosi* ‘every day’. When given as a binary choice, the speaker consistently accepted sentences with *ánohk* ‘now’ only in progressive contexts and sentences with *kanáiksistsikosi* ‘every day’ only in habitual contexts.

##### 4.1 Activities and accomplishments

Example (30) from Dunham (2008) shows that both the progressive and habitual interpretations exist for activities. The utterance expresses an explicit reference time via a *when*-clause, in brackets. This *when*-clause contains the prefix *a’-*, which references an instantaneous point in time (‘when I met Piitaakii’). Example (30) asserts that *smoke(p)* is true at that time, and is judged acceptable in two contexts: either Piitaakii was in the middle of smoking when I met her (a progressive interpretation), or Piitaakii was in the habit of smoking when I met her, even if she was not actually smoking at the time of meeting (a habitual interpretation).

<sup>5</sup>I have not tested whether nominal predicates which do not hold indefinitely also pattern with homogenous states. These might include life stages (‘be a puppy’, ‘be a girl’), positions like ‘be a chief’, or possession (‘have a dog’). I thank Martina Wiltschko for pointing this out to me.



- (30) [nitáó'taatsímaahsi           ] anááhk           Piitaaki           áó'tsisi  
 nit-a'-o'taatsiim-aa-hsi   ann-wa-hka   Piitaakii-wa   a-o'tsisi-wa  
 1-when-meet.TA-DIR-CNJ   DEM-PRX-INV   Piitaakii-PRX   IPFV-smoke.AI-3  
 'when I met Piitaakii she was smoking' (progressive)  
 'when I met Piitaakii she smoked (was a smoker)' (habitual)  
 (Re-elicited from Dunham 2008: 3)

Imperfective accomplishments also have both a progressive and a habitual interpretation, which was shown in (2). The internal morphology of accomplishments does not constrain the imperfective. Transitive verb stems in Blackfoot occur in three types, depending on the animacy and internal syntax of the object (Bloomfield 1946; Frantz 2009; Ritter and Rosen 2010; Weber and Matthewson In press). Ritter and Rosen (2010) show that the in-progress interpretation exists for all three stem types, which they tested with accomplishments like 'eat a/that fish', 'fix a/that wagon', and 'sew a/that shirt'. For each accomplishment, they used two picture prompts: one of a half-completed event, and one of a wholly-completed event. The imperfective could only be used to describe the half-completed event (i.e. for an progressive interpretation). The judgements were the same for all stem types, shown here with an AI verb stem in (31) and a TA verb stem in (32).

(31) ANIMATE INTRANSITIVE STEM

- |  |   |
|--|---|
| <p>a. aooyiwa           mamáí<br/> a-ooyi-wa       mámii<br/> IPFV-eat.AI-3   fish.AN<br/> 'S/he was eating a fish.'<br/> Bad after entire fish has been consumed<br/> Good during consumption of fish</p> | <p>b. ooyiwa           mamáí<br/> ooyi-wa       mámii<br/> eat.AI-3   fish.AN<br/> 'S/he ate a fish.'<br/> Good after entire fish has been consumed<br/> Bad during consumption of fish<br/> (Ritter and Rosen 2010: 132)</p> |
|--|---|

(32) TRANSITIVE ANIMATE STEM

- |   |  |
|---|--|
| <p>a. aowatsiw           amo       mamáí<br/> a-oowat-yii-wa   amo       mámii<br/> IPFV-eat.TA-DIR-3   DEM-PRX   fish-PRX<br/> 'S/he was eating a fish.'<br/> Bad after entire fish has been consumed<br/> Good during consumption of fish</p> | <p>b. oowatsiw           amo       mamáí<br/> oowat-yii-wa   amo       mámii-wa<br/> eat.TA-DIR-3   DEM   fish<br/> 'S/he ate a fish.'<br/> Good after entire fish has been consumed<br/> Bad during consumption of fish<br/> (Ritter and Rosen 2010: 132)</p> |
|---|--|

## 4.2 Achievements

Imperfective achievements only have a habitual interpretation. Example (33) is felicitous in a habitual context, where Tomas is a child who cannot walk well yet and often falls down. It is infelicitous in a progressive context, where Tomas is in the middle of a fall when the sentence is uttered, even when the fall lasts a long time, like a tumble down the stairs.

- (33) anná Tomás áísttohkohpi  
 ann-wa Tomás-wa a-ísttohkohpi-wa  
 DEM-PRX Tomás-PRX IPFV-fall.AI-3  
 ‘Tomas falls down.’  
 # ‘Tomas is falling down now.’ (Re-elicited from Chin 2007)

### 4.3 Inchoative states

As I discussed in Section 3, inchoative states can occur with or without the prefix *ik-* ‘DEG’. Example (3), repeated below as (34), show that imperfective inchoative states with *ik-* only have a habitual interpretation (Dunham 2007; Reis Silva and Matthewson 2007). Previous research assumed this was the only type of imperfective inchoative state. However, I have found that the imperfective can also occur on inchoative states without *ik-*, shown in (35).

- |   |   |
|---|---|
| <p>(34) nitsikáísttso’kini<br/>         nit-ik-a-ísttso’kini<br/>         1-DEG-IPFV-hungry.AI<br/>         # ‘I am hungry.’<br/>         ‘I get hungry’ (RSM:2007)</p> | <p>(35) nitáísttso’kini<br/>         nit-a-ísttso’kini<br/>         1-IPFV-hungry.AI<br/>         ‘I am hungry.’<br/>         ‘I get hungry.’</p> |
|---|---|

Examples (36) and (37) demonstrate that imperfective inchoative states without *ik-* are felicitous in continuous and habitual contexts, respectively.<sup>6</sup>

- (36) nitáo’taatsímaahsi anááhk Píítaaki nitáísttso’kini  
 nit-a’-o’taatsiim-aa-hsi ann-wa-hka Piitaakii-wa nit-a-ísttso’kini  
 1-when-meet.TA-DIR-CNJ DEM-PRX-INVS Piitaakii-PRX 1-IPFV-hungry.AI  
 ‘When I met Piitaaki, I was hungry.’
- (37) nitáísttso’kini ai’kó’ko’si  
 nit-a-ísttso’kini a’-iko’ko-’si  
 1-IPFV-hungry night.II-SBJ  
 ‘I get hungry at night.’

Imperfective inchoative states either with or without *ik-* can occur in habitual contexts. The difference is that imperfective states with *ik-* mean that the state habitually holds, while imperfective states without *ik-* mean there is a habitual ingression into the state. Example (38) shows that an individual-level predicate like *okaki* ‘smart(AI)’ is licit in certain continuous contexts, where it must co-occur with the prefix *ik-*. This example means that while I am driving, I am in a particular state of being smart. Namely, I am particularly mindful about safety and the rules of the road.

<sup>6</sup>Either a bare predicate with *ik-* or an imperfective without *ik-* can be used in continuous contexts. More elicitation is needed to determine the differences between these two constructions. Given that inchoative states are complex predicates which include a transition and a result state, we might also expect the imperfective to allow a progressive reading which means the inchoation into the state is on-going at the reference time (Lisa Matthewson, p.c.). Further research is necessary to determine the availability of this interpretation.

- (38) nitsikáókaki ayáóhkomatakiiniki  
 nit-ik-a-okaki aya-ohkomataki-iniki  
 I-DEG-IPFV-smart.AI while-drive.AI-SBJ  
 ‘I get smart when I’m driving.’ (BB: ‘I’m smart to what I’m supposed to do.’)

This predicate is also felicitous without *ik-* in certain habitual contexts, where it means there is a habitual ingress into the state. Example (39) was elicited in the context of a magic field of grass, which imparts wisdom to the animals that eat it. (See also the ‘Alice in Wonderland’ context in Dunham 2007 where *sspitaa* ‘tall (AI)’ is coerced into a habitual reading.)

- (39) [áóoyiisi matoyí] óma ponokáómita itáókaki  
 a-ooyi-si matoyi om-wa ponokaomita-wa iit-a-okaki-wa  
 IPFV-eat.AI-SBJ grass DEM-PRX horse-PRX LOC-IPFV-smart.AI-3  
 ‘When/while he eats that grass, that’s when (that horse) gets smart.’

In summary, there are two versions of imperfective inchoative states, which allow different interpretations of the imperfective. Imperfectives with *ik-* are only felicitous in contexts where the state habitually holds. Imperfectives without *ik-* are felicitous either in continuous contexts or in contexts where there is a habitual ingress into the state. The data here shows that the presence or absence of *ik-* greatly affects the meaning of the predicate, although further research is necessary to determine what the semantic contribution of *ik-* is.

#### 4.4 Homogenous states

Homogenous states cannot occur with the imperfective with a progressive interpretation, and instead the bare predicate is used to express this meaning, as was shown in (9).

- |   |   |
|---|---|
| <p>(40) *áítsikinya<br/>         a-itsikin-yi=aawa<br/>         IPFV-shoe.II-PL=PRX.PL<br/>         Intended: ‘They are shoes.’</p> | <p>(41) *áómitaaya<br/>         a-omita-yi=aawa<br/>         IPFV-dog-PL=PRX.PL<br/>         Intended: ‘They are dogs.’</p> |
|---|---|

Homogenous states also cannot occur in habitual contexts. Example (42) was elicited in the context of a magical story, where people change shape during the night. The sentence is infelicitous with *a-* ‘IPFV’, and instead a bare predicate must be used.

- |   |  |
|---|--|
| <p>(42) a. *kanáíko’kosí áómitaaya<br/>         kana-iko’ko-si a-omita-yi=aawa<br/>         all-night.II-SBJ IPFV-dog-PL=PRX.PL<br/>         Intended: ‘Every night they are dogs.’</p> | <p>b. kanáíko’kosí iimitáaya<br/>         kana-iko’ko-si imita-yi=aawa<br/>         all-night.II-SBJ dog-PL=PRX.PL<br/>         ‘Every night they are dogs.’</p> |
|---|--|

**Table 1:** Interpretations of *a-* on different predicate types

Predicate type	Habitual	Progressive/Continuous
Activities	✓	✓
Accomplishments	✓	✓
Achievements	✓	✗
Inchoative states w/o <i>ik-</i>	✓	✓
Inchoative states w/ <i>ik-</i>	✓	✗
Homogenous states	✗	✗

#### 4.5 Summary and discussion of interpretations of *a-*

The available interpretations of the imperfective *a-* are summarized in Table 1.

An analysis of the Blackfoot imperfective must account for all possible interpretations (progressive, continuous, and habitual), but also for why some Aktionsarten do not have certain interpretations. In the next section, I summarize a universal quantificational analysis of the imperfective which is similar to the only previous analysis of *a-* in Dunham (2008). Although this analysis derives all three from a single denotation, I will show that it cannot account for the lack of a continuous interpretation on inchoative states with *ik-* and homogenous states.

### 5 Previous analysis: universal quantification

In this section, I first explain the motivation behind the previous analysis of Blackfoot *a-* in Dunham (2008). Next, I use the logical forms from Deo (2009)<sup>7</sup> to show how a universal quantificational analysis accounts for the progressive and habitual interpretations in (30). Finally, I show that her analysis incorrectly predicts that imperfective states like (3) do allow a continuous interpretation.

Dunham (2008) adopts Bonomi’s (1997) analysis of the Italian imperfetto. In this and similar analyses, the imperfective contains a universal quantifier, whose domain is either contextually salient intervals or events (e.g. Bonomi 1997; Deo 2009). Essentially, her imperfective asserts that each interval or event overlaps with an event instantiating the predicate P (a P-event). Bonomi observed that different readings of the Italian imperfetto in (43) are favored by different lengths of the ‘frame interval’ (the contextually-salient interval containing the reference time denoted by the *when*-construction). A shorter frame interval like ‘five minutes’ is likely to be shorter than the runtime of a single *playing-in-a-trio(e)* event, and favors a progressive interpretation. A longer frame interval like ‘one year’ is long enough to potentially contain multiple events, and favors a habitual interpretation. This suggests that the imperfetto is not lexically ambiguous, but has one semantic denotation.

<sup>7</sup>I use Deo (2009) because it implements inertia futures (Dowty 1979). It is therefore a modal analysis and can account for the Imperfective Paradox in (10) while Bonomi (1997) and Dunham (2008) cannot. The two analyses posit different domains of quantification for the imperfective (events in Bonomi 1997; regular partitions of the contextually salient interval in Deo 2009), but this makes no difference to my argument here.

- (43) Quando fu notato da Miles Davis, Ahmad Jamal suona–va in un trio.  
 when was noticed by Miles Davis Ahmad Jamal play–PAST.IMPF in a trio  
 ‘When Ahmad Jamal was noticed by Miles Davis, he was playing in a trio’ (progressive)  
 ‘When Ahmad Jamal was noticed by Miles Davis, he was a member of a trio’ (habitual)  
 (Bonomi 1997: 491)

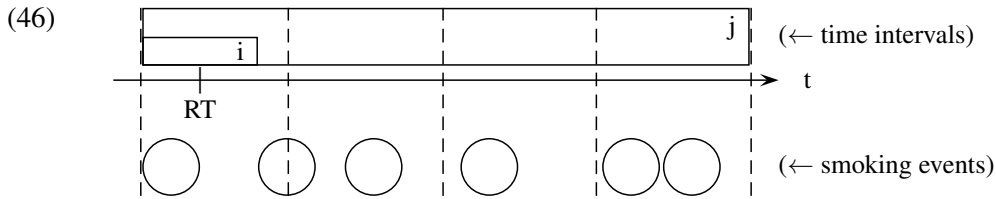
Deo’s imperfective (IMPF), in (44), applies to a predicate of events (or intervals)  $P$  to yield a predicate of intervals  $i$ , where  $i$  is a contextually salient interval. The imperfective asserts that a P-event occurs in a regular fashion from the interval  $i$  into every inertial future (Dowty 1979). The ‘regularity’ of P-events arises because the imperfective asserts that a P-event occurs at least once per some interval, where the length of the interval is determined by context.

$$(44) \quad \llbracket \text{[IMPF]} \rrbracket: \lambda P \lambda i \forall h [h \in H_{i_{irr}} \rightarrow \exists j [i \subseteq_{ini} j \subset h \wedge \forall k [k \in \mathfrak{R}_j^c \rightarrow \text{COIN}(P, k, h)]]]$$

Equation (44) says that for every inertial future,  $h$ , there is an interval  $j$  which includes the contextually salient interval  $i$  and also stretches into the future. Deo formalizes this by requiring  $i$  to be an initial subset of  $j$  ( $i \subseteq_{ini} j$ ). There is a regular partition of the superinterval  $j$ ,  $\mathfrak{R}_j^c$ , which is a set of collectively exhaustive, non-overlapping, equi-measured cells,  $k$ , whose length is determined by context. Every cell  $k$  of the regular partition of  $j$  COINCIDES with a P-event. COIN is true if P is instantiated within  $k$  or at a superinterval of  $k$  and if the time of instantiation is a subset of  $h$ .

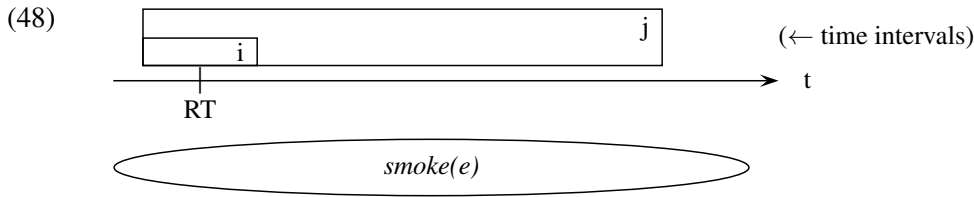
The formula in (44) accounts for both the progressive and habitual interpretations for predicates like the activity ‘smoke’ from (30). The habitual interpretation is given in (45) and schematized in (46). The equation asserts that for every inertia future  $h$ , there is an interval  $i$  which contains the reference time (RT) ‘when I met Piitaaki’. For some superinterval  $j$ , which includes  $i$  and also stretches into the future, and which is split into a regular partition (denoted by the dotted lines), every cell  $k$  of the partition overlaps with at least one smoking event. The length of each cell is appropriate to a normal spacing between smoking events. The picture below represents one inertia future  $h$  of a predicate.

$$(45) \quad \llbracket (30)_{\text{HAB}} \rrbracket = \exists i [h \in H_{i_{irr}} \rightarrow \exists j [i \subseteq_{ini} j \subset h \wedge \forall k [k \in \mathfrak{R}_j^c \rightarrow \text{COIN}(\lambda e. \text{smoke}(e), k, h)]]]$$



Deo (2009) explains that the progressive interpretation arises when the regular partition of  $j$  is divided into cells of infinitesimally small length,  $\mathfrak{R}_j^{inf}$ . The progressive interpretation of (30) is given in (47) and represented in (48). Because the regular partition of  $j$  contains cells of infinitesimal length, this denotation requires every point within the interval  $j$  to COINCIDE with a smoking event. This is only true in the special case that the superinterval  $j$  is too short to include multiple (non-overlapping) smoking events and is instead a subset of the runtime of a single smoking event.

$$(47) \quad \llbracket (30)_{\text{PROG}} \rrbracket = \exists i [h \in H_{i_{irr}} \rightarrow \exists j [i \subset_{nf} j \subset h \wedge \forall k [k \in \mathfrak{R}_j^{inf} \rightarrow \text{COIN}(\lambda e. \text{smoke}(e), k, h)]]]$$



However, a quantificational analysis makes no restrictions on the type of predicate that the imperfective combines with. The logical formula which uses  $\mathfrak{A}_j^{inf}$  in (47) should also be felicitous with a state. In other words, a quantificational analysis predicts that a homogenous state like ‘be a dog’ should be able to combine with the imperfective with a continuous interpretation for the same reasons that the progressive interpretation of an activity like *smoke(e)* is felicitous.

$$(49) \quad [[(3)] = \exists i [h \in H_{irr} \rightarrow \exists j [i \subset_{nf} j \subset h \wedge \forall k [k \in \mathfrak{A}_j^{inf} \rightarrow COIN(\lambda e.dog(e), k, h)]]]]$$

Indeed, nominal predicates in Italian can occur with the imperfetto. Nominal predicates use a copular construction and the copula in (50) uses the imperfetto.

- (50) Al tempo lui era un dottore  
 at.the time he was.IPFV a doctor  
 ‘At that time, he was a doctor.’ (Speaker: NO)

However, Blackfoot imperfective homogenous states lack a continuous interpretation. I conclude that a universal quantificational analysis cannot account for the Blackfoot imperfective. Instead, Blackfoot is a language which prohibits certain interpretations of the imperfective on some predicate types. In the next section, I argue that the Blackfoot imperfective can only occur on ‘extended’ predicates (Rothstein 2004). I propose to modify Deo’s imperfective with a presupposition that the predicate *a*- combines with is extendable in time.

## 6 The imperfective and [+extended] predicates

The predicate feature [ $\pm$ extended] separates activities and accomplishments from achievements and states (Rothstein 2004, 2008). This feature refers to the duration of a *minimal* event instantiating the predicate. Minimal predicates which hold of intervals, such as activities and accomplishments (Dowty 1979), are [+extended]. In contrast, minimal states hold of instants, because states are totally homogenous down to instants. Achievements are events of change from  $\alpha$  to  $\neg\alpha$  and consist of two instants, the last instant *i* at which  $\alpha$  holds and the first instant *i'* at which  $\neg\alpha$  holds. Although minimal achievements are not strictly instantaneous since they hold of two instants, *i* and *i'*, they are not extended in time because they cannot hold over an interval of time.

Predicate type	Extended
Activities	+
Accomplishments	+
Achievements	-
States	-

Rothstein (2004) notes that +extended predicates are the only ones which can occur with the English progressive, (51). In cases where the progressive can be used on [+extended] predicates to denote ‘recent habits’ (Jóhannsdóttir 2011), Rothstein (2004) assumes the predicate has been shifted to a [-extended]-type predicate.

- (51) a. #John is believing in the devil.  
 b. #John is noticing the picture .  
 c. Mary is running.  
 d. Mary is building a house.

Rothstein:2008

Although Rothstein notes that this is only a correlation, I propose that imperfectives may encode presuppositions about features of the predicate they combine with. Both the Blackfoot imperfective and the English progressive presuppose that the predicate is [+extended]. The denotation for Blackfoot *a-* in (52) is identical to Deo’s (2009) imperfective in (44), except that it also contains a presupposition about the predicate. The denotation for the English progressive in (53) contains an identical presupposition, but requires each cell of the regular partition to have infinitesimal length.<sup>8</sup>

(52)  $[[a-]]: \lambda P \lambda i \forall h [h \in H_{i_{irr}} \rightarrow \exists j [i \subseteq_{ini} j \subset h \wedge \forall k [k \in \mathfrak{R}_j^c \rightarrow \text{COIN}(P, k, h)]]]$   
 Defined only for [+extended] predicates.

(53)  $[[BE -ing]]: \lambda P \lambda i \forall h [h \in H_{i_{irr}} \rightarrow \exists j [i \subseteq_{ini} j \subset h \wedge \forall k [k \in \mathfrak{R}_j^{inf} \rightarrow \text{COIN}(P, k, h)]]]$   
 Defined only for [+extended] predicates.

Although I leave the details of this analysis for future research, such an analysis would explain why the Blackfoot imperfective cannot occur on achievements with a progressive interpretation, nor on homogenous states with a continuous interpretation. One potential problem is that a continuous interpretation exists for imperfective inchoative states without *ik-* ‘DEG’ but not for those with *ik-*. Until more is known about the semantic contribution of *ik-* to these states, it is difficult to know how to extend the analysis to account for these states. However, this analysis does extend straightforwardly to the habitual interpretation: a minimal habit must always hold over an interval which contains multiple events in the actual or possible worlds, and therefore habits are also [+extended].

## 6.1 Predictions for a typology of imperfectives

Deo (2009) develops a typology of imperfectives based on whether the regular partition which the imperfective quantifies over is restricted to an infinitesimally small length or not. In this typology, a progressive marker like the English progressive is a special subtype of a more general imperfective.

(54) DEO’S (2009) IMPERFECTIVE TYPOLOGY

Regular partition	Aspect type
$\mathfrak{R}_j^c$	Ipfv
$\mathfrak{R}_j^{inf}$	Prog

<sup>8</sup>The denotation for the English progressive in Deo (2009) actually contains a few more changes in order to account for the ‘recent habit’ interpretation, but I abstract away from these complications.

This typology must be extended to account cannot account for the Blackfoot imperfective and the English progressive, which contain a presupposition about the type of predicate it combines with. I propose an extension: languages may restrict the imperfective to only be used on [+extended] predicates, or they may allow the imperfective to be used on all types of predicates. The extended typology is shown in Table 2, along with the expected interpretations of the imperfective.

**Table 2:** Interpretations of the imperfective under the extended typology

Regular partition	Only [+extended]	Any predicate
$\mathfrak{R}_j^c$	progressive, habitual	progressive, continuous, habitual
$\mathfrak{R}_j^{inf}$	progressive	progressive, continuous

I suggest that languages are sensitive to various predicate features, and that the imperfective may be restricted based on those features. I expect there to be a finite number of cross-linguistically attested restrictions on imperfectives. As we saw above with Blackfoot, the imperfective may only apply to extended predicates. We might also expect imperfectives in other languages to be restricted to predicates based on their telicity, agentivity of the subject, etc. While I expect the typology to be fairly constrained (because it is based on a finite number of features), future typological work is necessary to determine the full extent of restrictions.

## 7 Conclusion

One prominent analysis of the imperfective holds that it universally quantifies over contextually determined intervals (Deo 2009). I showed that this type of analysis cannot account for languages like Blackfoot, and I proposed that the Blackfoot imperfective contains a presupposition about the type of predicate it combines with. Specifically, the predicate must have the feature [+extended] (Rothstein 2004). Given that progressive aspect is a special case of the semantically broader imperfective, this analysis also accounts for the English progressive, which has the same restrictions on predicates that the Blackfoot imperfective does.

A major contribution of the paper was to outline language-internal diagnostics for distinguishing predicate types. I found five different Aktionsarten in Blackfoot, including two types of states. Inchoative states include an initial transition into a resulting state while homogenous states do not. However, much work remains to be done in describing predicate types in Blackfoot, as well as the relation between morphological composition and form and predicate type. It is not immediately clear why the homogenous states studied thus far are uniformly nominal predicates. Likewise, inchoative states can occur with or without a degree marker prefix *ik-*. The presence or absence of *ik-* affects the interpretation of the imperfective, and is an area for further research.

## References

- Arregui, Ana, María Luisa Rivero, and Andrés Salanova. 2014. Cross-linguistic variation in imperfectivity. *Natural Language & Linguistic Theory* 32(2): 307–362.
- Bar-El, Leora. 2005. *Aspectual distinctions in Skwxwú7mesh*. Vancouver: University of British Columbia, PhD dissertation.



- Bliss, Heather. 2014. Marking the boundaries: Blackfoot preverbs in narratives and elicitation. In, Littell, Pat et al. (eds.), 1–14. (UBCWPL 36).
- Bloomfield, Leonard. 1946. Algonquian. In *Linguistic structures of native America*, Bloomfield, L., H. Hoijer, and C. Osgood (eds.), 85–129. (Publications in Anthropology 6). Viking Fund.
- Bonomi, Andrea. 1997. Aspect, quantification and when-clauses in Italian. *Linguistics and Philosophy* 20(5): 469–514.
- Chin, Seok Koon. 2007. *Aspectual classification of Blackfoot predicates*. Draft of Qualifying Paper, dated 11 May 2007.
- Comrie, Bernard. 1976. *Aspect*. New York: Cambridge University Press.
- Deo, Ashwini. 2009. Unifying the imperfective and the progressive: partitions as quantificational domains. *Linguistics and Philosophy* 32(5): 475–521.
- Dhillon, Paul, Karl Shin Ki Lee, and Diane Massam. 2009. Resulting States in Niuean. *Toronto Working Papers in Linguistics* 31.
- Dowty, David. 1979. *Word meaning in Montague grammar*. Dordrecht: Reidel.
- Dunham, Joel. 2007. The “durative” in Blackfoot: Understanding imperfectivity. In *Proceedings of SULA 4: Semantics of Under-Represented Languages in the Americas*, Deal, Amy Rose Deal (ed.), 49–64. (University of Massachusetts Occasional Papers in Linguistics vol. 35). GLSA Amherst.
- Dunham, Joel. 2008. *A unified analysis of the habitual and in-progress readings of á- in Blackfoot*. Qualifying paper, University of British Columbia.
- Frantz, Donald G. 2009. *Blackfoot grammar*. 2nd edn. University of Toronto Press.
- Jóhannsdóttir, Kristín M. 2011. *Aspects of the progressive in English and Icelandic*. University of British Columbia, PhD dissertation.
- Kratzer, Angelika. 1995. Stage-level and individual-level predicates. In *The generic book*, 125–175. Chicago: The University of Chicago Press.
- Landman, Fred. 1992. The progressive. *Natural Language Semantics* 1: 1–32.
- Matthewson, Lisa. 2004. On the Methodology of Semantic Fieldwork. *International Journal of American Linguistics* 70(4): 369–415.
- Reis Silva, Amélia and Lisa Matthewson. 2007. An instantaneous present tense in Blackfoot. In *Proceedings of the 4th Conference on the Semantics of Under-Represented Languages in the Americas (SULA)*.
- Ritter, Elizabeth and Sara Thomas Rosen. 2010. Animacy in Blackfoot: Implications for event structure and clause structure. In *Syntax, Lexical Semantics and Event Structure*, Hovav, Malka Rapoport, Edit Doron, and Ivy Sichel (eds.), 124–152. Oxford: Oxford University Press.
- Rothstein, Susan. 2004. *Structuring events: A study in the semantics of lexical aspect*. Oxford: Blackwell.
- Rothstein, Susan. 2008. Two puzzles for a theory of lexical aspect: The case of semelfactives and degree adverbials. In *Event Structures in Linguistic Form and Interpretation*, 175–198. Berlin: Mouton De Gruyter.
- Taylor, Allan R. 1969. *A grammar of Blackfoot*. University of California, Berkeley, PhD dissertation.
- Uhlenbeck, C. Cornelius. 1938. *A concise Blackfoot grammar based on material from the southern Peigans*. Nieuwe reeks, deel 41, of Verhandelingen der Koninklijke Akademie van Wetenschappen te Amsterdam, Afdeeling Letterkunde. Amsterdam: Noord-Hollandsche Uitgevers-Maatschappij.

Weber, Natalie and Lisa Matthewson. In press. The semantics of Blackfoot arguments. In *Papers of the Forty-fifth Algonquian Conference*. (University of Ottawa, Ottawa, Ontario, Oct. 18–20, 2013), Macaulay, Monica (ed.). MSU Press. In press.

## 8 Appendix: Predicate types in Blackfoot

I have included here more data which I used in diagnosing predicate types in Blackfoot. I have also included data from Chin (2007), which is a Qualifying Paper and therefore difficult to access. Following Chin (2007), I consider the interpretations of bare predicates, predicates with the perfect *akaa-*, predicates with *saaki-* ‘still’ plus the imperfective *a-*, and predicates with *iksist-* ‘finish’. The final subsection includes further data on inchoative states.

### 8.1 Bare predicates

The interpretation of bare predicates across various predicate types is summarized in Table 3. Here and below I will treat inchoative states with and without the prefix *ik-* ‘DEG’ separately, because it is sometimes unclear what the semantic contribution of *ik-* is.

**Table 3:** Interpretation of bare predicates

Predicate type	Interpretation
Activity	P(e) is complete
Accomplishment	P(e) is complete
Achievement	P(e) is complete
Inchoative state w/o <i>ik-</i>	(ungrammatical)
Inchoative states w/ <i>ik-</i>	P(e) is in progress
Homogenous states	P(e) is in progress

Bare activities, accomplishments, and achievements have a perfective reading (Dunham 2007; Reis Silva and Matthewson 2007). The bare predicate can be uttered if the event is already completed at the time of the utterance or if it was already completed at some time in the past.

(55) ACTIVITY

Anna Rafa ihpiyi  
 ann-wa Rafa-wa ihpiyi-wa  
 DEM-PRX Rafa-PRX dance-3  
 ‘Rafa danced.’

(Re-elicited from Chin 2007)

(56) ACCOMPLISHMENT

iikóoysskaa  
 iikooysskaa-wa  
 house.acquire.AI-3  
 ‘He built a house.’

(Re-elicited from Chin 2007)

(57) ACHIEVEMENT

anná Tomás isttohkohpí  
 ann-wa Tomas-wa isttohkohpi-wa  
 DEM-PRX Tomas-PRX fall.AI-3  
 ‘Tomas fell down.’

(Re-elicited from Chin 2007)

- (58) natsikíists      nítohkoonii'pya      matónni  
 n-atsikin-istsi nit-ohkooni-'p-yi=aawa matonni  
 1-shoe-IN.PL 1-find.TI-DIR-PL=PRX.PL yesterday  
 'I found my shoes yesterday.'

Bare inchoative states are ungrammatical without further prefixes. Examples (59) and (60) show that bare inchoative states without an *ik-* 'DEG' prefix cannot be used to mean that the state holds at the reference time. Example (61) shows that bare inchoative states cannot be used to mean there has been an inchoation into the state.

- (59) INCHOATIVE STATE WITHOUT *ik-*  
 \*anná      Joel      sspitáá  
 ann-wa      Joel-wa      sspitaa-wa  
 DEM-PRX tall.AI-3  
 Intended: 'Joel is tall.'

- (60) \*matónni/ánohk      nitsístso'kinj  
 matonni/annohk nit-isttso'kini  
 yesterday/now      1-hungry.AI  
 Intended: 'Yesterday / right now, I was/am hungry.'

- (61) \*nitsístso'kinj      nitáí'ni'síi      ómi      napayín  
 nit-isttso'kini nit-a'-ini-'si      om-yi      napayin-yi  
 1-hungry.AI      1-when-see.TI-CNJ DEM-IN bread-IN  
 Intended: 'I got hungry when I saw that bread.'

Although a bare predicate is ungrammatical, inchoative states without *ik-* are grammatical when they are linked via prefixal morphology to another clause. It is felicitous in a context where you were not hungry before you saw the bread, but you were hungry after you saw the bread. It cannot be used when you were already hungry at the time you saw the bread.

- (62) [nitáí'ni'síi      ómi      napayín ] nitsístso'kinj  
 nit-a'-ini-hsi      om-yi      napayin-yi      nit-it-isttso'kini  
 1-when-see.TI-CNJ DEM-IN bread-IN      1-LOC-hungry.AI  
 'When I saw that bread, that's when I got hungry.'  
 #'When I saw that bread, I was (already) hungry.'

Bare inchoative states with *ik-* have an imperfective interpretation, such that the predicate holds at the reference time. The reference time may be either in the present or in the past.

- (63) INCHOATIVE STATE WITH *ik-*  
 anna      Joel      iksspita  
 ann-wa      Joel-wa      ik-sspita-wa  
 DEM-PRX Joel-PRX DEG-tall.AI  
 'Joel is tall.'

(Re-elicited from Chin 2007)

(64) (ánohk) aná apí'saaki iksisttso'kini  
 (annohk) ann-wa apí'saakii-wa iik-isttso'kini-wa  
 (now) DEM-3 Coyote.Woman-PRX DEG-hungry.AI-3  
 '(Right now) Coyote Woman is hungry.'

(65) íkstsikssi  
 iik-sstsikssi-wa  
 DEG-sleepy.AI-3  
 'He's sleepy.'

(66) iikókaki  
 iik-okaki-wa  
 DEG-smart.AI-3  
 'He is smart.'

Finally, there are minimal pairs between inchoative states prefixed with *it-* and *ik-*. The first example in each case links the initial transition to a certain time expressed by an adverbial or clause. The second example links the result state to a certain time period expressed by an adverbial or clause. See also (22) and (26) in the text.

(67) a. ko'kóyi nitsitsisttso'kini  
 ko'koyi nit-it-isttso'kini  
 last.night 1-LOC-hungry.AI  
 'Last night I got hungry.'

b. ko'kóyi nitsikísttso'kini  
 ko'koyi nit-ik-isttso'kini  
 last.night 1-DEG-hungry.AI  
 'Last night I was hungry.'

(68) a. #nitáo'taatsímaahsi anááhk Píítaaki iitsspítaa  
 nit-a'-o'taatsiim-aa-hsi ann-wa-hka Piitaakii-wa iit-sspítáa-wa  
 1-when-meet.TA-DIR-CNJ DEM-PRX-INVS Piitaakii-PRX LOC-tall.AI-3  
 #'When I met Piitaaki, she got tall.'

b. nitáo'taatsímaahsi anááhk Píítaaki íiksspítáa  
 nit-a'-o'taatsiim-aa-hsi ann-wa-hka Piitaakii-wa iik-sspítáa-wa  
 1-when-meet.TA-DIR-CNJ DEM-PRX-INVS Piitaakii-PRX DEG-tall.AI-3  
 'When I met Piitaaki, she was tall.'

Bare homogenous states have a continuous interpretation: the state holds at the reference time.

(69) HOMOGENOUS STATE  
 atsikíniaawa  
 atsikin-yi=aawa  
 shoe.AI-PL=PRX.PL  
 'They are shoes.'

(Re-elicited from Frantz 2009: 24)

- (70) ómiksi imitáíks iisóóhkatsiia  
om-iksi imitaa-iksi iiso-ohkatsi-yi=aawa  
DEM-AN.PL dog-AN.PL four-leg.AI-PL=PRX.PL  
‘Those dogs have four legs.’

## 8.2 Predicates with *akaa-* ‘PRF’

The interpretations of predicates prefixed with the perfect *akaa-* are summarized in Table 4.

**Table 4:** Interpretation of *akaa-* predicates

Predicate type	Interpretation
Activity	P(e) is complete
Accomplishment	P(e) is complete
Achievement	P(e) is complete
Inchoative state w/o <i>ik-</i>	state holds
Inchoative states w/ <i>ik-</i>	state holds
Homogenous states	(ungrammatical)

Perfect activities, accomplishments, and achievements can all be uttered in a context where the event instantiating the predicate is already complete. An activity with the prefix *akaa-* ‘PRF’ was given in (24). Example (71) shows an accomplishment; examples (72) and (73) show perfect achievements.

- (71) ACCOMPLISHMENT  
ákaokooysskaa  
akaa-okooysskaa-wa  
PRF-house.acquire.AI-3  
‘He has built a house.’ (Re-elicited from Chin 2007)
- (72) ACHIEVEMENT  
anná Tomás ákaisttohkohpi  
ann-wa Tomas-wa akaa-isttohkohpi-wa  
DEM-PRX Tomas-PRX PRF-fall.AI  
‘Tomas has fallen down.’ (Re-elicited from Chin 2007)
- (73) ámostso’kya níkáóhkoonii’pya  
amo-istsi-o’k-yi=aawa n-ikaa-ohkooni-’p-yi=aawa  
DEM-IN.PL-??-PL=PRX.PL 1-PRF-find.TI-DIR-PL=PRX.PL  
‘Here they are! I found them.’

An inchoative state plus *akaa-* ‘PRF’ targets the result state, and can be uttered when the reference time is located sometime after the initial inception of the state. This appears to be true of inchoative states with *ik-*, shown above in (25), as well as without *ik-*, shown below.

- (74) INCHOATIVE STATES WITH *ik-*  
 anna Joel akaaiksspita  
 ann-wa Joel-wa akaa-ik-sspita-wa  
 DEM-PRX Joel-PRX PRF-DEG-tall.AI  
 ‘Joel is tall now.’ / ‘Joel got tall.’

(Chin 2007)

Homogenous states cannot normally occur with the prefix *akaa-* ‘PRF’.

- (75) HOMOGENOUS STATE  
 \*ákaitsikínya  
 akaa-itsikin-yi=aawa  
 PRF-shoe-PL=PRX.PL  
 Intended: ‘They are shoes.’ (??)

- (76) \*ákaomitaaya  
 akaa-omitaa-yi=aawa  
 PRF-dog-PL=PRX.PL  
 Intended: ‘They are dogs now.’ / ‘They’ve become dogs.’

However, in a context where there has been an inchoation into a state, *akaa-* is licit. I assume that these cases involve homogenous states which have been coerced into an inchoative state predicate.

- (77) Context: a dog was in an accident and lost a leg.  
 óma imita ákayookskaohkatsi  
 om-wa imitaa-wa akaa-yookska-ohkatsi-wa  
 DEM-PRX dog-PRX PRF-three-leg.AI-3  
 ‘That dog has three legs.’

### 8.3 Predicates with *saaki-a-* ‘still’

Table 5 summarizes the interpretations of predicates prefixed with *saaki-* ‘still’ plus *a-* ‘IPFV’.

**Table 5:** Interpretation of *saaki-* predicates

Predicate type	Interpretation
Activity	P(e) or habit is in progress
Accomplishment	P(e) or habit is in progress
Achievement	habit is in progress
Inchoative state w/o <i>ik-</i>	state holds
Inchoative states w/ <i>ik-</i>	state holds
Homogenous states	state holds

Activities and accomplishments plus *saaki-* ‘still’ and *a-* ‘IPFV’ in (78) indicates that an event or a habit is still on-going at the time of reference. An activity is shown in (78), and an example of an accomplishment was given in (14) above.

(78) ACTIVITY

Anna Rafa saakiaihpiyi  
ann-wa Rafa-wa saaki-a-ihpiyi-wa  
DEM-PRX Rafa-PRX still-IPFV-dance-3

'Rafa is still dancing.'

(Re-elicited from Chin 2007)

Achievements with *saaki-* 'still' and *a-* 'IPFV', are only good in a habitual context. Chin (2007) found that the example above in (12) can be uttered with the adverbial *ánohk* 'now', and assumed that this targeted the progressive interpretation, instead of the habitual interpretation. The contexts I used make it clear that only the habitual reading is allowed. A second example is given below showing that these sentences are not accepted in contexts where an event is in-progress.

(79) ACHIEVEMENT

\*nítssaakyaohkooni'pya  
nit-saaki-a-ohkooni-'p-yi=aawa  
1-still-IPFV-find.TI-DIR-PL=PRX.PL

Intended: 'I'm still finding your shoes.' (I haven't found them yet.)

Inchoative states with *saaki-* 'still' plus *a-* 'IPFV' target the result state. Example (27) above can only mean that Joel is still in the state of being tall, and cannot mean that Joel is still becoming tall. A second example is given in (80). I do not know if these are licit in a habitual context, i.e. whether (80) could mean 'I am still getting hungry (habitually)'.

(80) INCHOATIVE STATE WITHOUT *ik-*

nítssaakyaisttso'kini  
nit-saaki-a-isttso'kini  
1-still-IPFV-hungry.AI

'I'm still hungry.'

# 'I'm still getting hungry.' (Context: someone asks you if you would like to eat but you are not quite hungry enough so you say you are still getting hungry.)

Homogenous states with *saaki-* 'still' plus *a-* 'IPFV' also mean that the state holds, (81)– (83).

(81) HOMOGENOUS STATE

sákyaitsikinyaa  
saaki-a-itsikin-yi=aawa  
still-IPFV-shoe-PL=PRX.PL

'They're still shoes.'

(82) *sákaimitaikoanya*

saaki-a-imitaikoan-yi=aawa  
still-IPFV-puppy-PL=PRX.PL

'They're still puppies.'



- (83) ómiksi imitáíks sákyaisoohkatsiia  
om-iksi imitaa-iksi saaki-a-iso-ohkatsi-yi=aawa  
DEM-AN.PL dog-AN.PL still-IPFV-four-leg.AI-PL=PRX.PL  
‘Those dogs still have four legs.’

#### 8.4 Predicates with *iksist-* ‘finish’

The interpretations of predicates prefixed with *iksist-* ‘finish’ are summarized in Table 6.

**Table 6:** Interpretation of *iksist-* predicates

Predicate type	Interpretation
Activity	P(e) is complete
Accomplishment	P(e) is complete
Achievement	P(e) is complete
Inchoative state w/o <i>ik-</i>	transition into result state is complete
Inchoative states w/ <i>ik-</i>	(no examples)
Homogenous states	(ungrammatical)

Activities and accomplishments plus *iksist-* ‘finish’ are used when the event instantiating the predicate has come to a natural end. An activity is shown below. The accomplishment plus *iksist-* ‘finish’ in (15) can only be used when the entire accomplishment is finished; i.e. the house must be completed.

- (84) ACTIVITY  
matónni anná Apí’saaki iitsiksístsspiyi  
matonni ann-wa api’saakii-wa iit-iksist-sspiyi-wa  
yesterday DEM-PRX Coyote.Woman-PRX LOC-finish-dance.AI-3  
‘Coyote Woman stopped dancing yesterday.’  
Context given by the speaker: maybe the dancers are dancing in groups for the judges, and Coyote Woman’s group was done yesterday.

Achievements plus *iksist-* are only felicitous in habitual contexts. An example is given in (13) above and in (85) below.

- (85) ACHIEVEMENT  
\*nitsiksístohkooni’pya  
nit-iksist-ohkooni-’p-yi=aawa  
1-finish-find.TI-DIR-PL=PRX.PL  
Intended: ‘I have found my pants.’ (I am finished finding my pants.)

Inchoative states plus *iksist-* ‘finish’ are only felicitous in contexts where the transition into the state is finished, as shown in (23). A second example is given below showing that inchoative states prefixed by *iksist-* ‘finish’ are not felicitous in contexts where the result state ceases to hold.

(86) INCHOATIVE STATE WITHOUT *ik-*

\*nitsííksistsistso'kini  
nit-iksist-isttso'kini  
1-finish-hungry.AI

Intended: 'I stopped being hungry.' (Context: I was hungry, but then I ate, so I am no longer hungry.)

Homogenous states cannot occur with *iksist-* 'finish'.

(87) HOMOGENOUS STATE

\*iksísitsikinyaa  
iksist-itsikin-yi=aawa  
finish-shoe-PL=PRX.PL

Intended: 'They aren't shoes anymore.' / 'They stopped being shoes.'

Context: the shoes are so old that they are falling apart and are just cloth rags.

(88) \*iksístomitaamyaa

iksist-omitaa-m-yi=aawa  
finish-dog-POSS-PL=PRX.PL

Intended: 'They aren't dogs anymore.' / 'They stopped being dogs.'

(89) \*iksistsisoohkatsi

iksist-iso-ohkatsi-wa  
finish-four-leg.AI-3

Intended: 'That dog stopped having four legs.'

Context: the dog was in an accident and lost a leg.