

The Properties and Classification of Psych-Predicates in Blackfoot

Kyumin Kim

University of Calgary

kyumin.kim2012@gmail.com

In this paper, I present the properties of psych-predicates in Blackfoot, a topic which has not been studied in detail. I discuss how the psych-predicates show different syntactic and semantic properties depending on their morphological markings (i.e., finals). In particular, I focus on the comparison between non-psych- and psych-verb stems with AI finals with respect to their transitivity. Moreover, this paper addresses how the psych-forms can be classified, with respect to the well-known three types of psych-predicates described in the literature.

Keywords: *psych-forms; finals; pseudo-transitives; unergatives; instrument markers*

1 Introduction

The goal of this paper is to describe the properties of psych-predicates in Blackfoot, a topic which has been understudied in the literature. I also aim to determine whether the psych-predicates in Blackfoot can be classified according to the well-known three classes of psych-predicates (I-III) outlined by Belletti and Rizzi (1988).

Blackfoot is an Algonquian language spoken in Southern Alberta, Canada and Northwestern Montana, U.S.A. In this language, the person, number and gender of maximally two core arguments are cross-referenced via verbal affixes, and the respective roles of the arguments are marked by direct/inverse morphology (see section 4.2 for details). In the literature on Algonquian languages, it is generally assumed, following Bloomfield (1946), that verb stems can be subcategorized into one of four classes, depending on their transitivity and the animacy of their arguments. These four classes are given in (1):

(1)	<i>Verb class</i>	<i>Indication</i>
a.	Animate Intransitive (AI)	Subject is animate
b.	Inanimate Intransitive (II)	Subject is inanimate
c.	Transitive Animate (TA)	Object is animate
d.	Transitive Inanimate (TI)	Object is inanimate

The verb classes are distinguished by the morphemes that appear at the right edge of the stems; these are called 'finals'. The first two verb classes (1a-b) are intransitive verb stems; they are marked by different finals, namely AI and II.

These finals indicate that the subject is animate or inanimate, respectively.¹ The other two verb classes (1c-d) are transitive verb stems marked by TA or TI finals. These two finals indicate that the object is animate or inanimate, respectively. In other words, these finals indicate the transitivity of the verb and the animacy of the subject or object. For instance, the verb stem 'eat' in Blackfoot can be realized with TA, TI, or AI finals, as illustrated in (2):

- | | | | | | |
|-----|----|------------|--------------|----------|-------------------------|
| (2) | a. | <i>oow</i> | <i>-at</i> | 'eat-TA' | The object is animate |
| | b. | <i>oow</i> | <i>-atoo</i> | 'eat-TI' | The object is inanimate |
| | c. | <i>ooy</i> | <i>-i</i> | 'eat-AI' | The subject is animate |
- (Ritter and Rosen 2010)

Since it has been shown that there are no psych-forms with II finals (Johansson 2007), the discussion throughout this paper will be centred on psych-verb stems with TA, TI, or AI finals.

This paper is organized as follows. Section 2 presents how psych-forms can be morphologically marked. Section 3 discusses psych-verb stems with AI finals and shows that they are unergative, unlike non-psych-verb stems with AI finals, which are argued to be pseudo-transitive (Ritter and Rosen 2010). Section 4 addresses whether psych-forms in Blackfoot can be classified into the well-known three classes of psych-predicates, and in particular, it discusses the issues regarding Class I predicates. Section 5 discusses whether Class II predicates exist in Blackfoot. Section 6 concludes the paper.

2 Morphological marking on psych-forms

In Blackfoot, psych-verb stems can take either regular or irregular forms. Regular forms are marked with different finals: TA, TI, or AI, depending on the animacy of the subject or object, as noted earlier (see also the examples in section 3). Examples are given in (3):²

¹ I use 'subject' and 'object' for ease of exposition. It has been shown that 'subject' and 'object' are not important distinctions in the grammar of Algonquian languages (e.g., Ritter and Wiltschko 2004).

² Unless otherwise noted, all data presented in this paper are from my own fieldwork. The data presented come from the Kainaa (Blood) dialect. The following abbreviations are used in the paper: 1/2/3 – 1st/2nd/3rd person; AN – animate; ACC – accusative; CAUSE – causative marker; CONJ – conjunctive paradigm; DAT – dative; DEC – declarative; DIR – direct object theme; DEM – demonstrative; DUR – durative; IA – intransitive animate; II – intransitive inanimate; IN – inanimate; INST – instrument; INV – inverse theme; NOM – nominative; NONFACT – nonfactive; OBV – obviative; PL – plural; PRO – pronoun; PROX – proximate; PST – past; SG – singular; TA – transitive animate; TI – transitive inanimate. The Blackfoot data in this paper are illustrated morpheme-by-morpheme gloss, and do not reflect sound changes.

(3)	<i>TA</i>	<i>TI</i>	<i>AI</i>	<i>Meaning</i>
a.	a'ka-imm	a'ka-i'tsi	a'ka-i'taki	hate
b.	a'poina'-imm	a'poina'-i'tsi	a'poina'-i'taki	be bothered
c.	ika-imm	ika-i'tsi	ika-i'taki	dislike
d.	oksists-imm	oksists-i'tsi	oksists-i'taki	be interested in
e.	awaakomi-imm	awaakomi-i'tsi	awaakomi-i'taki	love

As illustrated in (3), TA forms are marked with the final *-imm*, TI forms are marked with the final *-i'tsi*, and AI forms are marked with the final *-i'taki*.

However, some psych-forms do not follow this pattern:

(4)	<i>TA</i>	<i>TI</i>	<i>AI</i>	<i>Meaning</i>
a.	sstonno	sstonno	_____	fear/be afraid of
b.	sski'si	_____	sski'tstaa	frighten
c.	a'pitsiihtaa	a'pitsiihtaa	a'pitsiihtaa	worry
e.	i'taam-imm	i'taam-i'tsi	i'taam-issi	happy
f.	sstoyisi	sstoyisi	sstoyisi	be shy

These forms do not take the regular finals, unlike in (3). Moreover, some forms are absent. For example, there is no AI form for 'fear/be afraid of'. In some cases, the same form is employed for TA, TI, and AI. For example, the form *a'pitsiihtaa* 'worry' is listed as an AI form in the dictionary of Frantz and Russell (1995). However, it seems that the same form can be used for both TAs and TIs interchangeably, as illustrated in (5a) and (5b). As a TA form (5a), its object is animate, as in 'your son', while as a TI form (5b), its object is inanimate, as in 'the house'. The same form can also be used as an AI form, as in (5c), with the animate subject 'I'. Despite being the same form, the verb forms in (5) cannot be treated in the same way. That is, they should be understood as different forms—TA (5a), TI (5b), and AI (5c) forms respectively. In Blackfoot, TA and TI forms have different direct markers (see section 4.2 for details). The direct marker *-a* appears with TA forms when the subject is 1st or 2nd person singular and the object is a 3rd person animate noun, while the direct marker *-p* appears with TI forms when the subject is 1st or 2nd person singular and the object is a 3rd person inanimate noun. These two direct markers appear on the forms in (5a) and (5b), respectively, which suggests that the form in (5a) is TA and the form in (5b) is TI. As for AI forms, there is no dedicated direct marker, and this is true with the verb form in (5c).

- (5) a. nit- a'potsiihtaa -a -wa kohko
 1SG worry DIR -3SG your son. AN
 'I worry about your son.'
- b. nit- a'potsiihtaa -'p -wa amo napioyisi
 1SG worry DIR -3SG DEM house. IN
 'I worry about this house.'
- c. nit- a'potsiihtaa
 1SG worry
 'I am worried.'

The same is true of *sstoyisi* 'be shy', which is listed as an AI form by Frantz and Russell (1995). One note should be made about the form 'happy' here. It seems to be marked with the regular TA and TI finals, *-imm* and *-i'tsi*, respectively. However, the AI final is *-issi*, not the regular AI final *-i'taki*. For this reason, the form 'happy' is considered to have an irregular pattern.³

3 No pseudo-transitive psychological AI forms

Ritter and Rosen (2010) argue that in Blackfoot TA and TI forms must take a DP object, and not an NP object. The relevant examples are given in (6).

- (6) a. na- oow -at -yii -wa
 PST eat TA -DIR -3SG
 amo mamii/ *mamii
 DEM fish.AN fish.AN
 'S/he ate this fish'
- b. na- oow -atoo -m -wa
 PST eat -TI -DIR -3SG
 ani akoopis/ *akoojis
 DEM soup.IN soup.IN
 'S/he ate this soup'

³ It appears that the TA and TI irregular forms in (4) are not different from the regular forms in (3) in that the types of DP objects they take depends on the objects' animacy. Moreover, unlike regular psych-AI forms (see section 5), the AI forms in (4) do not need to be prefixed with the instrument marker in order to take an additional object. Instead, TA or TI forms are used. In this paper, the discussion will mostly be centred on the regular morphological psych-forms.

On the other hand, AI forms cannot take a DP object; they can only take an NP object, as in (7):

- (7) na- ooy -i -wa mamii/akooapis
 PST eat AI -3SG fish/soup
 *amo mamii/ *ani akooapis
 DEM fish.AN DEM soup.IN
 'S/he ate (fish/soup)'

Considering this difference in the types of objects that TA/TI and AI forms can take, Ritter and Rosen conclude that AI forms as in (7) are pseudo-transitives. They argue further that AI forms may be unergative, pseudo-transitive, or unaccusative. Unergative/pseudo-transitive and unaccusative AI forms never take the same finals. For example, based on a study of the dictionary of Blackfoot (Frantz and Russell 1995), Ritter and Rosen discovered that the AI finals for agentive and experiencer subjects are *-aki* and *-i'taki*, respectively. On the other hand, unaccusative AI verbs such as stative and change of state verbs take the finals *-ssi* or *-a'pssi*. Of importance is that the finals *-aki* and *-i'taki* never appear on unaccusative AI verbs.

As illustrated in section 2, morphologically regular psych-AI forms take the final *-i'taki*, as also noted by Ritter and Rosen (2010). Given Ritter and Rosen's finding that *-i'taki* can be unergative/pseudo-transitive, but never unaccusative, the question arises as to what psych-AI forms are: unergative or pseudo-transitive? Verbs such as *love*, *(dis-)like*, or *fear* seem to be pseudo-transitive, as they can appear with two participants. Thus, we would predict that they take an NP rather than a DP object, just like the non-psychological AI forms in (7). However, predicates such as *happy*, *angry*, or *sad* may be unergative, since they usually appear with only an experiencer subject, and not with an object NP or DP.

Surprisingly, all the psych-AI forms I encountered in my fieldwork turn out to be unergatives, and not pseudo-transitives, regardless of whether they appear with one or two participants.⁴ First, evidence comes from the fact that the AI forms are ungrammatical with DPs and with NPs, as illustrated below:

- (8) a. *nit- a'ka -i'taki amo mamii /mamii
 1SG- hate AI DEM fish. AN fish. AN
 'I hate the fish/fish.'
- b. *nit- a'ka -i'taki ani akooapis /akooapis
 1SG- hate -AI DEM soup. IN soup. IN
 'I hate the soup/soup.'

⁴ The form *awaakomi-i'taki* 'love-AI' may be an exception to this generalization. One of my consultants allows bare NPs and DPs only with this form, but not with any other psych-AI forms, as illustrated in this section. 'Love' does not pattern with the non-psychological AI forms discussed by Ritter and Rosen (2010) either. I leave this issue for further research.

Furthermore, whether the object is mass or count has no influence on the grammaticality of the sentence. Both the count noun *saahkomaapi* 'boy' (9a/10a) and the mass noun *koonssko* 'snow' (9b/10b) without a demonstrative are not allowed with psych-AI forms. The bare plural form of the count noun, *saahkomaapi-ksi* 'boys' is not allowed either, as indicated in (9a/10a).

- (9) a. *nit- a'ka -i'taki saahkomaapi /saahkomaapi-ksi
 1SG- hate AI boy. AN boy. AN-PL
 'I hate the boy/boys.'
- b. *nit- a'ka -i'taki koonssko
 1SG- hate -AI snow. IN
 'I hate snow.'
- (10) a. *nit- ookii -i'taki saahkomaapi/ saahkomaapi-ksi
 1SG- angry AI boy. AN boy. AN-PL
 'I am angry with the boy/boys.'
- b. *nit- ookii -i'taki koonssko
 1SG- angry -AI snow. IN
 'I am angry with the snow.'

The fact that the psych-AI forms cannot take any type of object clearly indicates that they cannot be (pseudo)-transitives, as shown in (11):

- (11) a. nit- a'ka -i'taki
 1SG- hate AI
 'I have hatred.'/* I hate (someone/something).'
- b. nit- ookii -i'taki
 1SG- angry -AI
 'I am angry.' /*I am angry (with someone/something).'

Further support for the conclusion that psych-AI forms are intransitive comes from the fact that the sentences in (11) cannot have an interpretation with an implicit theme. For instance, the sentence (11a) cannot mean 'I hate (something) or (someone)'. To express such a meaning, either a TA or TI form must be used, as illustrated in (12).

- (12) a. nit- a'ka -imm -wa
 1SG- hate TA -3SG
 'I hate (someone).'

- b. nit- a'ka -i'tsi -wa
 1SG- hate -TI -3SG
 'I hate (something).'

The findings in (8)-(12) indicate that psych-AI forms are intransitives.

We must now investigate whether the psych-AI forms show characteristics of unergatives. In other words, the question is whether the sole argument of psych-AI forms is an experiencer or a theme. This can be determined by the use of a preference task. The results of a preference task with pictures indicate that the arguments are experiencers. Several images were presented with paired sentences, and Blackfoot language consultants were asked to pick out the sentence that correctly described each image. An example from the task is given in (13).

(13) a.



b.



- (14) a. ana Mickey a'ka -i'taki
 DEM Mickey hate -AI
 'Mickey has hatred.'

- b. ana Minnie a'ka -i'taki
 DEM Minnie hate -AI
 'Minnie has hatred.'

In the picture, Mickey is smiling, but Minnie is frowning. The context given to the consultant was that Mickey likes Minnie, but Minnie hates Mickey. The consultants were then presented with a pair of sentences with the verb 'hate', as in (14). Only the Blackfoot sentences were presented: the morphemic glosses and the interpretation of the sentences were not provided to the consultant. If the argument of the AI form were an experiencer, sentence (14b) would be picked. In the images in (13), only Minnie is closer to the emotional state described by the form 'hate'. If the argument of the AI form were a theme, the sentence in (14a) would be picked out. As mentioned, Mickey was hated by Minnie, although he liked her. In the task, sentences such as (14b), where the argument would be interpreted as an experiencer, were consistently selected by the consultants. This suggests that the sole argument of psych-AI forms is an experiencer.

Unergatives are typically agentive across languages (e.g., Perlmutter 1978).

Moreover, there are psychological predicates that can be agentive in some languages (Arad 1998). If psych-AI forms in Blackfoot are unergative, we would expect them to show properties related to agentivity. This turns out to be the case. First, an agent-oriented adverb can modify the experiencer of AI forms, as exemplified in (15).

- (15) a. nit- awaat awaakomi -i'taki
 1SG- willingly love AI
 ?'I am in love on purpose.'
- b. nit- awaat a'ka -i'taki
 1SG- willingly hate -AI
 ?'I am hating on purpose.'

The psych-AI forms are also compatible with 'try X' or 'want to X' phrases, as illustrated in (16), just like agentive non-psych-AI forms (17):

- (16) a. ana John essaako- awaakomi -i'taki
 DEM John try love -AI
 'John tries to be in love.'
- b. ana John eksstaa- aahk- awaakomi -i'taki
 DEM John want NON.FAC love -AI
 -hsi
 CONJ
 'John wants to be in love.'
- (17) a. ana John essaako- ooy -i akooapis
 DEM John try eat -AI soup. IN
 'John tries to eat soup.'
- b. ana John eksstaa- aahk- ooy -i
 DEM John want NON.FACT eat -AI
 -hsi akooapis
 CONJ soup. IN
 'John wants to eat soup.'

Another indication that psych-AI forms are agentive comes from the fact that they can be used in the expression 'Let's X', i.e., a propositive form. Non-agentive verbs are usually not compatible with this form, as in **Let's arrive* or **Let's know*. Interestingly, the propositive forms of psych-AI forms are grammatical in Blackfoot, as illustrated in (18).

- (18) a. a'ka -i'taki y'op
 hate -AI *let's*
 'Let's hate.'
- b. a'poina' -i'taki y'op
 bother -AI *let's*
 'Let's bother.'

In addition, like agentive AI forms (19), psych-AI forms can be imperatives (20). The imperative ending *-t* appears on the non-psychological agentive AI form 'eat' in (19) (Frantz 2009). This ending appears when the addressee is singular. The same ending can also appear with psych-AI forms to indicate that the sentences are imperatives (20).

- (19) Ooyi -t
eat.AI -2*S.IMP*
'Eat!' (Frantz 2009)

- | | | | | |
|------|----|---------------|------------|---------------|
| (20) | a. | a'ka | -i'taki | -t |
| | | <i>hate</i> | <i>-AI</i> | <i>2S.IMP</i> |
| | | 'Hate!' | | |
| | b. | a'poina' | -i'taki | -t |
| | | <i>Bother</i> | <i>-AI</i> | <i>2S.IMP</i> |
| | | 'Bother!' | | |

In sum, the data presented in this section strongly support the idea that psych-AI forms are unergative, and not pseudo-transitive.

4 The classification of psych-forms in Blackfoot

4.1 Psych-predicates across languages

Cross-linguistically, psychological predicates are typically classified into the three types established by Belletti and Rizzi (1988) for Italian psychological predicates. Class I is often called the Subject-Experiencer (Subj-Exp) construction. The subject of a Subj-Exp construction is an experiencer, and it typically takes nominative case, as the following English example shows. The theme argument is in the accusative.⁵

- (21) He fears the news/her.

⁵ This discussion is restricted to nominative-accusative languages.

Class II predicates also take both an experiencer and a theme argument. Contrary to Class I, however, the experiencer appears in object position (22):

(22) The news/she frightened him.

For this reason, Class II is often called the Object-Experiencer (Obj-Exp) construction. The subject argument is widely viewed as a causer. That is, 'the news' in (22) is the cause of the emotional state in the experiencer. In languages like Korean, Japanese, or Finnish, the verbs of Obj-Exp constructions are affixed with a causative morpheme, which confirms the thematic status of the subjects of Obj-Exp constructions. Consider the following example from Korean (23):

(23) ku muncy-ka Swuni-lul kwoylop -hi -ess
DEM problem-NOM Suni-ACC distress -CAUSE -PST
 -ta
 -DEC
 'That problem distressed Suni.'

As in English (22), the object is an experiencer in the accusative. The verb is suffixed with the causative morpheme *-hi*, and the causer 'the news' appears in the nominative.

Class III predicates are called Dative-Subject constructions. They are similar to Class I Subj-Exp constructions in that the subject is an experiencer. However, the case on the experiencer is dative, and not nominative. As a consequence, the theme is marked with the nominative and not the accusative. An example of a Class III predicate in Korean is shown in (24).

(24) Swuni-eykey Inho-ka silh -ess -ta
Suni-DAT Inho-NOM hate PST -DEC
 'Suni hated Inho.'

The question that I will explore in the following section is how to can classify the psych-forms in Blackfoot. This is interesting, as the classification is centred on thematic role-based languages, and often the distinction among the classes is expressed by case marking. As mentioned earlier, Blackfoot is an animacy-based language (Ritter and Rosen 2010, Ritter and Wiltschko 2004), and there is no case marking in the language. As a result, Class III, i.e., the dative-marked subject construction, seems to be absent in Blackfoot. More support for the absence of Class III in Blackfoot comes from the cross-linguistic observation that Class III is always non-agentive (Arad 1998, Landau 2010). As shown by the examples in (15)-(18) and (20), psych-predicates in Blackfoot are agentive, unlike canonical Class III predicates cross-linguistically. The discussion to follow will focus on whether Classes I and II exist in Blackfoot. Class I appears to be present, but whether Class II exists in Blackfoot is unclear. It should be noted here that the discussion will mainly be focused on the roles of

the arguments in the relevant classes and not on the particular properties of each class, e.g., the existence of psych-effects with Class II, but their absence with Class I.⁶

4.2 Does Blackfoot have Class I psych-predicates?

Class I Subj-Exp constructions are possible in Blackfoot; they are expressed with TA and TI finals.⁷ Consider the examples in (25). In Blackfoot, word order is relatively free, and it does not bear any crucial relevance to the current issue.

- (25) a. nit- awaakomi -imm -a -wa kohko
 1SG love TA DIR 3SG your son. AN
 'I love your son.'
- b. nit- a'ka -imm -a -wa kohko
 1SG hate TA DIR 3SG your son. AN
 'I hate your son.'
- (26) a. amo napioyisi nit- awaakomi -i'tsi -'p
 DEM house. IN 1SG love TI -DIR
 'I love this house.'
- b. amo napioyisi nit- a'ka -i'tsi -'p
 DEM house. IN 1SG hate TI DIR
 'I hate this house.'

When the object is animate, as in (25), the TA final *-imm* appears on the stem. In contrast, the TI final *-i'tsi* appears on the stem when the object is inanimate, as in (26). The subject is marked with a person prefix, such as *nit-* '1SG' (25-26), and is interpreted as an experiencer. Thus, these sentences correspond to Subj-Exp constructions of Class I.

The direct/inverse system in Algonquian languages was viewed as a case system by Fabri (1996). However, Ritter and Rosen (2010) and Ritter and Wiltschko (2004) have shown that direct/inverse markings in Blackfoot cannot

⁶ The literature on psych-predicates has focused on the presence or absence of psych-effects among the classes (e.g., Belletti and Rizzi 1988, Arad 1998, Landau 2010, among others). However, it is difficult to test for these effects in Blackfoot without first establishing which classes exist in the language. Moreover, the discussion of the psych-effects is often based on language-specific properties or diagnostics for a particular phenomenon, not all of which apply to Blackfoot.

⁷ Class I is assumed to be stative verb (Belletti and Rizzi 1988, Grimshaw 1990, Arad 1998); however, this does not seem to be the case for Blackfoot. For example, my fieldwork shows that psych-predicates in Blackfoot can take the imperfective aspect marker *a-*, and have the interpretation 'Exp is psych-V-ing right now.' This type of example seems to suggest that psych-predicates in Blackfoot are not stative verbs.

be equated with a case system. Rather, the direct-inverse system makes reference to a person-animacy scale, as in (27) (Aissen 1997; Dryer 1992; Junker 2004).⁸

(27) 1st > 2nd > 3rd PROX > 3rd OBV > 3rd inanimate

When the subject is in the first or second person and the object is in the third person, the verb is marked with a direct marker. If there is a third person subject and a first or second person object, then the verb is marked with an inverse marker. For example, in (25a), the direct marker *-a* on the verb indicates that the first person outranks the third person. That is, the first person is the subject, i.e., the experiencer, and the third person is the object theme. Inverse markers on the verb change the subject-object relation. Consider the example in (25a) with an inverse marker on the verb, as shown in (28).

(28) kohko nit- awaakomi -imm -ok
 your son. AN 1SG love TA -INV
 -wa
 -3SG
 'Your son loves me.'

As the gloss in (28) indicates, the direction of the action has changed. The inverse marking indicates that the third person outranks the first person. In other words, in contrast to the examples with direct marking in (25), in (28), the third person is the subject and the first person is the object. Importantly, the subject is still an experiencer and the object is the theme. Irrespective of whether the verb has direct or inverse marking, the psych-TA finals correspond to the Subj-Exp Class I.

As mentioned earlier, TI finals indicate that the object is inanimate. Thus, verbs marked with TI finals have the meaning where an animate subject acts on an inanimate object. In Blackfoot, the subject cannot be an inanimate third person; consequently, there is no inverse suffix for the interaction between inanimate subjects and animate themes. As mentioned earlier, there is no direct or inverse marker for AI forms. I conclude that in Blackfoot psych-verb stems marked with TA and TI finals belong to Class I.

5 Does Blackfoot have Class II psych-predicates?

Recall that in Class II, an experiencer appears as an object, and the causer is the subject. In Blackfoot, it appears that there are two ways to express more or less the same meaning as Class II psych-clauses. One is by employing the instrument prefix *iiht~oht-* and the other is by means of the causative suffix *-attsĩ*.⁹

⁸ As the distinction between the proximate and obviative are not relevant to the current topic of this section, I do not discuss them here.

⁹ According to Frantz (2009), there is another variant of this marker, *omoht-*. I did not find this form with my consultants. Frantz also mentioned that the distribution of the

As discussed in section 2, psych-AI forms do not allow DPs or NPs, as illustrated by the contrast between (29a) and (29c) here. However, a DP can appear when the verb is prefixed with an instrument marker, as illustrated in (29b), where the instrument prefix *oht-* allows the DP object of the instrument 'John'. The DP is interpreted as the causer of the clause. As psych-AI forms are unergative, they cannot take an object without this instrument marker, as shown in (29c).

- (29) a. nit- a'ka -i'taki
 1SG- hate AI
 'I have hatred.'
- b. nit- oht- a'ka -i'taki ana John
 1SG- INST hate -AI DEM John
 'John makes me angry.'
- c. *nit- a'ka -i'taki ana John
 1SG- hate -AI DEM John
 'John makes me angry.'

Another way of expressing the same meaning as Class II predicates is to add a causative suffix, as in other languages (see (22)).

- (30) ana John nit- awaakomi -i'taki -attsi
 DEM John I love AI CAUSE
 -ok -wa
 INV 3SG
 'John makes me feel love.'

The causer is 'John', and the causee is 'me', which is an experiencer. Here the third person animate acts on the first person animate, and thus inverse marking occurs on the verb.

In terms of thematic roles, it seems that Blackfoot has two ways of expressing the meaning of Class II predicates, as exemplified in (29b) and (30). However, this does not necessarily mean that the predicates must be Class II. The relevant sentences are expressed with the prefix *iiht-* ~ *oht-* and the suffix *-attsi*. The functions and meanings of the affixes seem to be different. In the section to follow, I will examine these two types of affixes in more detail and show that Blackfoot may not have Class II psych-forms.

variants is not the same. *iiht-* appears in word-initial position, *omoht-* appears immediately following a person prefix, and *oht-* appears elsewhere. The data presented in this paper seem to support this generalization. As this is not the focus of the paper, I will not discuss this issue any further.

5.1 A comparison of psych-AI forms with *iiht-* ~ *oht-* and *-atts*

The instrument marker is a prefix and the causative marker is a suffix. This difference seems to affect the status of the DP that each affix introduces. In particular, the causative marker has been treated as a TA final (Frantz 1991). This means that the suffix *-atts* adds an external argument, assuming Ritter and Rosen's (2010) analysis of finals in Blackfoot as the realization of an external argument-introducing head.

In contrast, the element added by the instrument marker is an adjunct (Frantz 2009). The range of argument meanings added by *iiht-* ~ *oht-* can vary: instrument, means, source, content, or path. Examples involving an instrument and path are shown in (31a) and (31b), respectively. We can also add a causer role, as shown in (29b).

- (31) a. oma isttoana iiht- sikahksinii'pi annistsi ikkstsiksiistsi
 DEM knife. AN INST cut.TI-PL those branches
 'The knife cut off those branches.'
- b. iiht- a- waawahkaa yi aawa
 INST DUR walk -PL PRO
 om -yi -ma niitahtaa -yi
 that IN.SG STAT river-IN.SG
 'They are walking along the river.' (Frantz 2009)

Although the instrument marker can add a causer role to its argument, this argument cannot be treated the same as causers added by the causative suffix.

The first reason is based on the difference in animacy of the DPs that each affix introduces. In Blackfoot, it is well known that participants that are licensed by a final must be sentient animates (Ritter and Rosen 2010). On the other hand, there is no such requirement on participants that are introduced by non-final affixes, e.g., instrumental prefixes. In other words, a participant introduced by a final is treated as an argument, whereas a participant introduced by a non-final is treated as an adjunct. The sentient animacy requirement is observed with the causative final *-atts* on psych-AI forms:

- (32) a. ana John nit- awaakomi -i'taki -atts
 DEM John 1SG love AI CAUSE
 -ok -wa
 INV 3SG
 'John makes me feel love.'

- b. *ani istoana nit- awaakomi -i'taki -attsi
 DEM knife. AN 1SG love AI CAUSE
 -ok -wa
 INV -3SG
 'The knife makes me feel love.' (i.e., 'I love that knife.')

As illustrated in (32a), the sentient animate 'John' is licensed by the causative final *-attsi*. In contrast, the non-sentient 'the knife', which is animate in Blackfoot, cannot be licensed by the same causative final, as the ungrammaticality of (32b) shows.

In contrast, participants introduced by the instrument marker can be (non)-sentient animate or inanimate. In (33a), the psych-AI form is prefixed with *oht-*, and the prefix introduces a non-sentient animate causer, 'the knife'. It can also license a sentient animate causer, such as 'John' in (33b). An inanimate causer such as 'the house' is also possible, as in (33c).

- (33) a. ani istoana nit oht- awaakomi -i'taki
 DEM knife. AN I INST love AI
 'The knife makes me feel love.'
- b. ana John nit oht- awaakomi -i'taki
 DEM John I INST love AI
 'John makes me feel love.'
- c. ani napioyisi nit- awaakomi -i'taki
 DEM house. IN I love AI
 'The house makes me feel love.' (i.e., 'I love the house.')

Agreement marking is also different for the arguments introduced by the instrument prefix and the causative suffix. In Blackfoot, a person prefix is viewed as an agreement marker (Frantz 2009). For instance, in (34), the first person verbal prefix 'I' is licensed by the TA final *-imm*, and it is the subject of the sentence.

- (34) nit- awaakomi -imm -wa ana John
 1SG- love -TA -3SG DEM John
 'I love John.'

When a causer is licensed by a causative TA final and is in the first or second person, it appears as a person marker, as shown in (35):

- (35) a. ana kohko nit- awaakomi -i'taki -attsi
 DEM your son 1SG love -AI CAUSE
 -a -wa
 DIR 3SG
 'I make your son feel love.'
- b. ana kohko kit- awaakomi -i'taki -attsi
 DEM your son 2SG love -AI CAUSE
 -a -wa
 DIRECT 3SG
 'You make your son feel love.'

However, the argument introduced by the instrument marker cannot be marked on the verb, regardless of its person. For instance, when the first person is licensed by an instrument marker and appears as a prefix on the verb, the sentence is ungrammatical, as in (36b). The grammatical way of expressing the sentence is to employ an independent pronoun, such as *niisto* 'I', as in (36a). The contrast between (36a) and (36b) indicates that the argument introduced by the instrument prefix cannot be marked as agreement on the verb.

- (36) a. niisto oht- awaakomi -i'taki ana John
 I INST love -AI DEM John
 'Lit. By means of me, John is in love.'
- b. *nit- oht- awaakomi -i'taki ana John
 1SG INST love -AI DEM John
 'Lit. By means of me, John is in love.'

The following table provides a summary of the comparison of the instrument and causative markers:

(37)	<i>Properties</i>	<i>Instrument</i>	<i>Causative</i>
a.	argument type	adjunct	(external) argument
b.	agreement	no	yes
c.	animacy	no restrictions	only sentient animates
d.	type of affix	prefix	final (suffix)
e.	role	can vary	causer

As presented in the table in (37), the two markers are very different in nature. The absence of agreement (37b) and animacy restrictions (37c) on DPs introduced by the instrument marker follows from the fact that the instrument marked DPs are adjuncts (37a). This also explains why the roles marked by the instrument can vary (37e).

The question raised in this section was whether Blackfoot has Class II psych-forms. Given the results of the comparison of the instrument and causative

markers, I tentatively conclude that there are no Class II psych-forms with instrument markers. Recall that with Class II the subject is a causer and the object is an experiencer (see (22-23)). Moreover, these two roles correspond to grammatical relations, namely, the subject and the object. However, with psych-AI forms marked with an instrument marker, there is a single argument, a subject. The other argument is an adjunct licensed by the instrument marker. Additional evidence that psych-AI forms marked with the instrument prefix cannot be Class II is found in Louie (2009). She shows that the instrument-marked argument in Blackfoot merges lower than the subject. With canonical Class II psych-verbs, however, it is the causer that merges higher than the theme (i.e., experiencer) role. As for psych-AI forms with the instrument marker, I suggest that they are just like the bare psych-AI forms discussed in section 3. In other words, the instrument-marked psych-AI forms are unergative with an adjunct phrase.

Psych-forms with the causative suffix, as in (35), on the other hand, might be classified as Class II, as the subject is a causer and the experiencer appears to be an object. However, the experiencer cannot be an object in Blackfoot, unlike canonical Class II clauses. Psych-forms marked with the causative suffix *-attsi* (35) seem to be bi-clausal, unlike canonical Class II clauses. For instance, the clauses in (35) allow an agent-oriented adverb, e.g., 'willingly', and the sentences are ambiguous as to whether the causer or the experiencer is interpreted with the adverb (Kim 2012). More research is required in this area in order to make a firm conclusion on this issue.

6 Conclusion

This paper has shown that psych-forms in Blackfoot can have morphologically regular or irregular forms. A surprising finding is that psych-AI forms are unergative, unlike non-psychological AI forms. Another issue addressed was how psych-forms in Blackfoot can be classified with respect to the three well-known classes of psych-predicates discussed in the literature. It was shown that Class I could be expressed via psych-TA and -TI finals. Regardless of the presence or absence of an instrument marker, psych-AI forms are unergative, and thus may belong to Class I without a theme. The psych-AI forms marked with the causative suffix may not be Class II, as it could be the case that an experiencer does not correspond to the grammatical role of object. More research is required to reach a more solid conclusion. Unsurprisingly, Class III psych-predicates, which are non-agentive cross-linguistically, do not exist in Blackfoot, as psych-predicates in Blackfoot are agentive.

An interesting finding is that an instrument marker can introduce a causer with psych-AI forms, which has not been reported in the Blackfoot literature. As noted earlier, the instrument marker seems to mark a range of adjunctival meanings. However, the roles are not as random as one would expect. In fact, the instrument marker is called a 'linker' and is known to mark an oblique role (Frantz 2009). This marker does not show the same properties as the applicative

marker, which is a suffix and a final in Blackfoot. It will be interesting to find out how the instrument linker (as well as other linkers) can be formally differentiated from the applicative final.

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