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Noun and Adverb Incorporation in Blackfoot

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ABSTRACT

This squib investigates noun and adverb incorporation in Blackfoot, an Algonquian language spoken in Southern Alberta and Montana, within the broader context of the language's polysynthetic morphosyntax. It first outlines relevant morphophonological and morphosyntactic properties of Blackfoot, including nominal inflection, agreement, animacy and transitivity marking, and the organization of the verbal complex. The analysis identifies two principal restrictions on noun incorporation: the incorporation of nominal heads denoting body parts into the verbal stem, and noun-noun incorporation in abstract nominalization, in which a deverbal nominal obligatorily incorporates a nominal head rather than a full noun phrase. The study then examines adverb-verb incorporation within a minimalist framework. Simple, complex, and split configurations are discussed, with particular attention to adverbs of manner, degree, and rate, the role of symmetric c-command, and movement to specifier positions. Complex cases show that degree and manner/rate adverbs may be separated by a durative aspect marker, requiring successive merger and movement operations. Overall, the squib demonstrates how incorporation interacts with Blackfoot verbal structure, nominalization, aspect, and the syntax of adverbial modification.

Keywords: Blackfoot; polysynthesis; noun incorporation; adverb incorporation; morphosyntax; minimalist approach; nominalization

1. Introduction

The current squib aims to investigate incorporation in Blackfoot, an Algonquian language spoken in Southern Alberta (Canada) and Montana (USA). Two types are found: noun incorporation and adverb incorporation. The first type involves noun-verb and noun-noun

incorporation. The latter, analyzed within the theoretical framework of the minimalist approach, involves simple, complex, and split cases.

This squib is structured as follows. Section 2 presents a brief background on the polysynthesis of Blackfoot both at the interface between phonology and morphology (morphophonology) and between morphology and syntax (morphosyntax). Section 3 describes the morphosyntax of the verbal complex and discusses two restrictions or constraints under which the first type of incorporation (noun-verb and noun-noun incorporation) occurs (§ 3.1). This section also discusses and analyzes the simple and complex cases of adverb-verb incorporation. Section 4 summarizes the constraints on incorporation.

2. Polysynthesis of Blackfoot

Algonquian languages, a subfamily of American indigenous languages, are well-known for their complex polysynthesis. This reflects the highly complicated composition of multimorphemic words which stand for predicates and arguments. Such highly inflected words are found in Blackfoot. At the interface between morphology and phonology (morphophonology), the stem in Blackfoot carries the core meaning; however, this stem, unlike English, cannot occur on its own. Rather, the stem requires a singular or plural morpheme to be a word (Frantz, 2009). The data in (1-3) are drawn from Frantz and Russell's (2017) worldwide dictionary of Blackfoot. In (1), the suffixal morphemes *-yi* and *-istsi* respectively form singular and plural nouns and indicate a noun belonging to the inanimate gender class. In (2), the stem is suffixed with the morpheme *-wa* to form the singular, whereas it is suffixed with the morpheme *-iksi* to form the plural. However, both

indicate animate gender noun stem. In (3), both approximants in the singularizing morphemes (i.e., *-yi* and *-wa*) are dropped when followed by a stem-final consonant.¹

(1) Table of inanimate singularizers

Stem	Singular	Plural	English
aapistsisskitsi	aapistsisskitsi-yi	aapistsisskitsi-istsi	flower/blossom
maká'pssáísski	maká'pssáísski-yi	maká'pssáísski-istsi	weed

(2) Table of animate pluralizers

Stem	Singular	Plural	English
aapssipisttoo	aapssipisttoo-wa	aapssipisttoo-iksi	snowy owl
ninaa	ninaa-wa	ninaa-iski	man

(3) Table of dropped approximants

Stem	Singular	English
mo'tsís	mo'tsís-i	hand
póós	póós-a	cat

Morphologically, the two suffixes *-yi* and *-wa* can attach to not only an argument nominal or demonstrative expression but also a verb. In either case, the suffix *-yi* marks obviative morphological elements, but the suffix *-wa* marks proximate ones. These are respectively exemplified in (4a-b).² (see Bliss, 2013:18-21).

¹ While the singular suffixes *-yi* and *-wa* are respectively inflected as obviative and proximate, the plural suffixes *-istsi* and *-iksi* are neutralized in terms of obviative/proximate distinction (Bliss, 2013).

² The Blackfoot examples are presented in a four-line format – the first line is the orthographic representation based on “Blackfoot dictionary of stems, roots, and affixes” (Frantz & Russel, 2017). Abbreviations are used as follows: 1, 2, 3 = first, second, and third person; 2/1 = inclusive *we*; ABL = ability model; ABS = absolutive; ADV = adverb; AdvP = adverb phrase; AI = animate intransitive; ASSOC = associative; DEG = degree; DegP = degree phrase; DEM = demonstrative;

(4) (a) Áyissksimmaawa oma imitááwa. (Bliss, 2013:20)
a-yissksimaa-**wa** om-**wa** imitaa-**wa**
IMPF-carry.load.AI-**PROX** DEM-**PROX** dog-**PROX**
‘‘That dog (PROX) is a pack dog.’’ (lit: it carries loads)

(b) Áyissksimmaayini omi imitááyi. (Bliss, 2013:20)
a-yissksimaa-**yini** om-**yi** imitaa-**yi**
IMPF-carry.load.AI-**OBV** DEM-**OBV** dog-**OBV**
‘‘That dog (OBV) is a pack dog.’’ (lit: it carries loads)

Morpho-syntactically, Blackfoot shows polysynthesis in several respects. Of these, the language has extensive agreement requirements. In (5a-b), the person suffixes *-wa* and *-yi* must agree in number with the subject. In (5c-e), the future tense (*yaak-*) and durative aspect (*á-*) markers prefix the verb stem, and the resultant stem is complex. Additionally, the verb stems in Blackfoot, similar to Algonquian languages like Ojibwa, take suffixes that must agree with subjects or objects, i.e., the animate intransitive (AI) indicates that the subject is animate (4a-b; 5g), the inanimate intransitive (II) indicates that the subject is inanimate (5h-i), the transitive animate (TA) agrees with an animate object (5j), and the transitive inanimate (TI) agrees with an inanimate object (5k).

(5) (a) Ííksspitaawa nohkówa. (Frantz, 2009:21)
iik-sspitaaw-**wa** n-ohkó-**wa**
very-tall-**SG** my-son-**SG**
‘‘My son is tall.’’

DET = determiner; DIR = direct; DU = dual; DUR = durative; ERG = ergative; EVID = evidential;
FUT = future; IC = initial change; II= inanimate intransitive; IMPE = imperfect; INAN
= inanimate; INTERR = interrogative; INTNS = intensifier; INV = inverse; INVS = invisible;
NOM = nominative; NONAFF = non-affirmative; NONPART = non-particular; NPST = non-past;
NumP = number phrase; OBV = obviative; PL = plural; POSS = possessive; PREF = prefix; PRES
= present; PROX = proximate; SG = singular; TA = transitive animate; TI = transitive inanimate;
VP = verb phrase.

- (b) Ííksspitaayi nohkóiksi. (Frantz, 2009:21)
iik-sspitaai-**yi** n-ohkó-**iksi**
very-tall-**PL** my-son-**PL**
“My sons are tall.”
- (c) Oma saahkómaapiwa **áaka**’po’takiwa.³ (Frantz, 2009:32)
om-wa saahkómaapi-wa **yáak**-a’po’taki-wa
that-3SG boy-3SG **FUT**-work-3SG
“The boy will work.”
- (d) Omá síipistowa **áipotta**awa. (Frantz, 2009:34)
om-wa síipisto-wa **á**-Ipottaa-wa
that-3SG owl-3SG **DUR**-fly-3SG
“The owl is flying.”
- (e) Nit~~á~~ókska’si. (Frantz, 2009:34)
nit-~~á~~-okska’si
1-**DUR**-run
“I run. / I’m running”
- (f) Apinákosi **áaka**okska’so’pa. (Frantz, 2009:34)
Apinákosi **yáak**-a-okska’si-o’pa
tomorrow **FUT-DUR**-run-2/1
“Tomorrow we2/1 will be running.”
- (g) Naihkiitaawa (Bliss, 2018:445)
na-ihkiit-**aa**-wa
EVID-bake-**AI**-PROX
“S/he baked (something).”
- (h) Kátai’sootááwaatsiksi? (Frantz, 2009:131)
káta’-sootaa-waatsiksi
INTERR-rain-**II**-SG:NONAFF
“Is it raining?”
- (i) *Aapoyíinaattsiwa*. (Frantz & Russell, 1995:11)
aapoyiinaattsi-wa
be.brown.**II**-PROX
“It is/was brown.”

³ For a comprehensive view of phonological and morphophonological rules of Blackfoot, see Frantz (2009:154-157, 26-30).

(j) Naihkiitatsiiwa	omi	pi'kssii	(Bliss, 2018:445)
na-ihkiit- at -yii-wa	om-yi	pi'kssii-yi	
EVID-bake- TA -DIR-PROX	DEM-SG.OBV	chicken-SG.OBV	
“S/he baked that chicken.”			

(k) Naihkiitatooma	omi	napayini	(Bliss, 2018:445)
na-ihkiit- atoo -m-wa	om-yi	napayin-yi	
EVID-bake- TI -DIR-PROX	DEM-SG.INAN	bread-SG.INAN	
“S/he baked that bread.”			

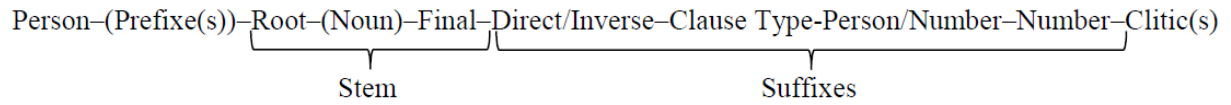
3. Incorporation

Based on the nature of exhibited polysynthesis, Blackfoot permits two types of incorporation: noun incorporation and adverb incorporation. The following section is organized as follows. In (§3.1), I provide a brief background on the morphosyntax of the verbal complex and review two restrictions of noun incorporation. In (§3.2), I consider adverb incorporation and demonstrate how adverbial elements may be intervened by an aspect marker.

3.1. Verbal Complex and Noun Incorporation

The template of the verbal complex in (6) manifests how highly inflected Blackfoot is (Bliss, 2013:34). The template shows that a verbal complex begins with a person prefix (e.g., *kit-* “you”, *nit-* “I”, and *n-* “my”) (7a-b), and a verbal prefix may follow and function as: tense, aspect, or modality; a quantifier; adpositions/linkers (see Frantz, 2009:82-96). First, a verbal prefix indicates tense, aspect, or modality (e.g., *yaak-*, *á-*, and *aahk-* signal future tense, durative aspect, and epistemic modality, respectively) (underlined (7b)). Second, this verbal prefix may be a quantifier associating with the subject and/or object (e.g., the prefix *ohkana-* “all” with a plural argument, but it is ambiguous when both arguments are plural) (7c). Third, adpositions or linkers (e.g., locational nominals *it-* or *iit-* “there” and instrumental nominals *omoht-*, *iiht-*, or *oht-* as “fork”) introduce the oblique relation of arguments in the clause though they are positioned in the verb rather than adjacent to the argument (7d).

(6) Verbal Complex Template



- (7) (a) **Nitsáámaahkiaaki.** (Bliss, 2013:38)
nit-yaamaahki-aaki
1-sweep-1
 “I swept.”
- (b) **Nitá’pao’taki.** (Frantz, 2009:34)
nit-a’p-a-o’taki
1-PREF-DUR-work.
 “I work.”
- (c) **Nitohkanáóhpommatoó’pinnaaniaawa.** (Frantz, 2009:85)
 nit-**ohkana**-ohpommatoó-’p-innaan-yi-aawa
 1-**all**-buy.TI-1:INAN-1PL-3PL-3PL.PRN
 “We bought all of them.” OR “We all bought them.”
- (d) Napayíni **nomohpiówatoo’pa** ómihka i’ksisakoyihka.
 napayin-i **n-omohp-iowatoo-’p-wa** om-yi-hka i’ksisako-yi-hka
 bread-NONPART 1-**ASSOC**-eat.TI-1:INAN-PROX DEM-INAN-INV meat-INAN-INV
 “I ate the meat with bread.” (Frantz, 2009:92)

What follows the person prefix(s) is the verb stem which is composed of a root (obligatory), incorporated noun (optional), and a final (obligatory). Minimally, the verb stem consists of a root encoding the lexical content of the verb complex and a suffixal final encoding both transitivity and animacy (i.e., IA, II, TA, and TI) and including positions for suffixes as person/number suffixes (8a-c). (For details on the finals of complex verb stems, see Frantz, 2009:97-107).

- (8) (a) Nitá’psstaki. (Bliss, 2013:43)
nit-a’psst-aki
1-wave-AI
“I waved.”
- (b) Náíhkiitaawa. (Bliss, 2013:44)
na-ihkiit-aa-wa
EVID-bake-AI-PROX
“S/he baked (something).”

- (c) Nitómitaama áóhkiwa. (Frantz, 2009:73)
 nit-omitaa-m-wa á-**ohki**-wa
 1-dog-POSS-3SG DUR-**bark(Al)**-3SG
 “My dog is barking.”

Maximally, a noun in Blackfoot is incorporated in the stem, linearizing before or after the verb root and encoding body parts (e.g., *aapin* “eye” (9a) and *ika* “foot” (9b)).⁴ (See Frantz, 2009:82-99; Dunham, 2009; Bliss, 2013:42-43); Bliss, 2018:444-454).

- (9) (a) Nitsíssapa**aapino**’toka. (Dunham, 2009:4)
 nit-sap-**aapin**-o’t-o-ok-wa
 1-in-**eye**-grasp-TA-INV-PROX
 “He poked me in the eye.”

- (b) Nitsíipaks**ikí**niiooka. (Frantz & Russell, 2017:80)
 nit-ii-ipak-**ika**-ini-ok-wa
 1-IC-hit-**foot**-TA-INV-PROX
 “She struck me on the legs.”

Another restriction under which noun incorporation occurs is nominalization. To explicate, Frantz (2009) introduces five patterns of deverbal nominalization, i.e., noun stems are formed from verb stems. Each pattern marks its verbal input with a nominal suffix, and thus the referent to the newly nominal argument is denoted by the predicate (see English and Blackfoot examples in (10) and (11a-c), respectively).

(10) Verb	Nominalization	Referent	(Bliss et al., 2012:5)
[v employ]	the [N [v employ]- er]	AGENT	
[v call]	the [N [v call]- ing]	EVENT	
[v employ]	the [N [v employ]- ee]	THEME	
(11) Verb	Nominalization	Referent	
(a) okstaki	okstak- hsin	ACTION	(Frantz, 2009:115)
“read”	“reading”		
(b) sinaaki	sinaaki- hsin	PROCESS	(Frantz, 2009:115)
“make an image/write/draw”	“drawing/writing”		

⁴ The inverse morpheme appears as the infix *-ok*, marking noun-verb incorporation.

(c) sitók-ihkitaa middle-cook	sitok-ihkitaa- n middle-cook.NOM “pie”	THEME (Bliss et al., 2012:7)
----------------------------------	---	------------------------------

The nominalization patterns in (11a-c) are referred to as “abstract nominalization”.⁵ Bliss et al. (2012) contend that this pattern incorporates a nominal head (not an NP), and the resultant nominal stem is complex. In (12a), the abstract nominal *íksskímaa-n-yi* incorporates the fully lexical noun *Ponoká* “elk”. Violation of nominal incorporation, as a result, yields the ungrammaticality in (12b).

- (12) (a) **Ponoká**íksskímaani áákohkotsiksstónata’pi. (Bliss et al., 2012:8)
ponoka-íksskímaa-**n**-yi yaak-ohkot-ik-sstonnat-a’pii
elk-hunt.AI-NOM-INAN FUT-ABL-INTNS-dangerous-be.AI
“Elk-hunting can be really dangerous.”

- (b) *Ikskímaani **ponoká** áákohkotsiksstónata’pi. (Bliss et al., 2012:8)
íksskímaa-n-yi **ponoka** yaak-ohkot-ik-sstonnat-a’pii
hunt.AI-NOM-INAN **elk** FUT-ABL-INTNS-dangerous-be.AI

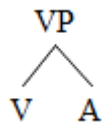
3.2. Adverb Incorporation

As noted above, a nominal head in Blackfoot undergoes incorporation based on two restrictions. First, nominal heads encoding body parts are incorporated before or after the verbal root such as (9). Second, nominal heads encoding other entities are incorporated into abstract nominals such as (12).

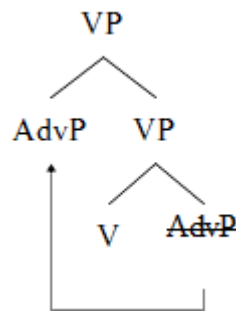
Another kind of incorporation found in Blackfoot is adverb incorporation, which originates as the complement of the verb and then raises to occupy the Spec-V. This could be syntactically illustrated as (13) below.

⁵ Frantz (2009) mentions that abstract nominals are formed by suffixing the allomorph *-n* to a verbal stem ending in *-aa* (see (11c)) and by suffixing the allomorph *-hsin* to other verbal stems (see (11a-b)).

(13) **Input**



Output



This adverb-verb compounding undergoes the input-output process in (13) and, according to Frantz (2009), comprises an adverbial prefix of manner, degree, and rate, respectively as in *Ikkina*- “gently/easy” (14a), *sstónnat*- “extremely” (14b), *iitsiksist*- “slowly” (14c).⁶

(14) (a) Nitsikkínaiksiinoka. (Frantz, 2009:89)

nit-**Ikkina**-lksiin-o:k-wa
1-**gently**-touch(TA)-INV-3SG
“She touched me gently.”

(b) sstónnatsstoyiiwa. (Frantz, 2009:91)

sstónnat-sstoyii-wa
extreme-be.cold(II)-SG
“It’s extremely cold.”

(c) Iitsiksistokska’siwa. (Frantz, 2009:91)

iitsiksist-okska’si-wa
slow-run-3SG
“He runs slowly.”

In addition, a complex case of adverb incorporation emerges in the case of Degree Phrase (DegP), in which one or more adverbs of degree precede another adverb (manner/rate) as in (15a) – the two adverbial morphemes of degree *iik*- and *-stonat*- modify the adverb *-ikin*- “slow”, and the three incorporate into the verb meaning “wash”. In (15b), I provide my example of only one

⁶ Frantz (2009:89-91) identifies the adverbial prefixal morphemes used in Blackfoot to express the three types.

(15) (a) anná John ikstonatsikinissaaki (Barrie, 2011:151)
 ann-wa John iik-stonat-ikin-issaaki
 DET-PROX John DEG-DEG-slow-wash.dish
 “John washed the dishes really slowly.”

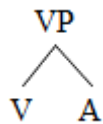
(b) iikpóináóhkomatakiwa.
 iik-póína-ohkomataki-wa
 DEG-reckless-drive-3SG
 “He drives very recklessly.”

(16) tsa niitaikkamiyooyi apastaminam (Barrie, 2011:151)
 tsa niit-á-Ikkam-iy-ooyi apastaminam
 INTERR DEG-DUR-fast-?-eat.INTR apple
 ‘How fast does he eat an apple?’

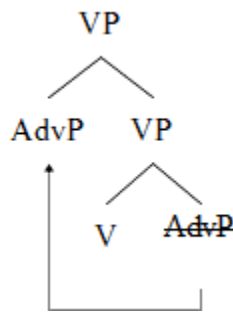
(17) Kurdu-jarra-rlu ka-pala maliki wajili-pi-nyi wita-jarra-rlu. (Simpson, 1983:310)
 child-DU-ERG PRES-2DU dog-ABS chase.NPST small-DU-ERG
 “(The) two small children are chasing the dog.”

25

(18) **Input**

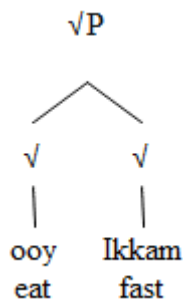


Output

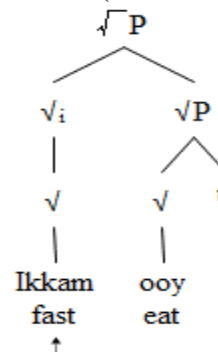


To derive (16), incorporation arises by the verb *ooy* “eat” selecting the bare adverb (head) *Ikkam* “fast” as a complement (19a), and thus both are in symmetric c-command relation when both (the verb and its adverbial complement) merge. To resolve this relation, the verb triggers raising the adverbial root $\sqrt{}$ to Spec-VP, and thus the symmetry is eliminated (19b).

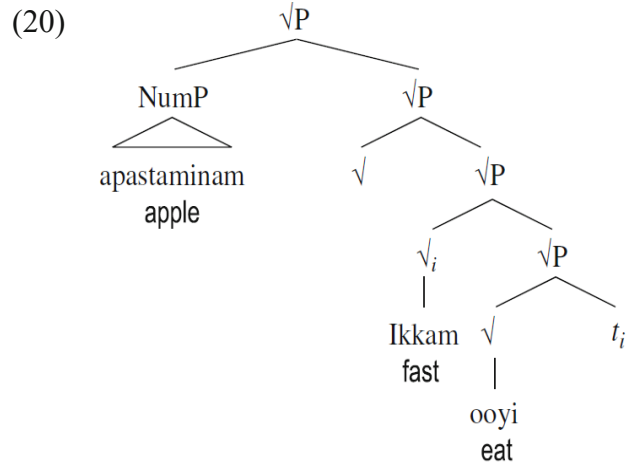
(19) (a)



(b) Barrie (2011:153)

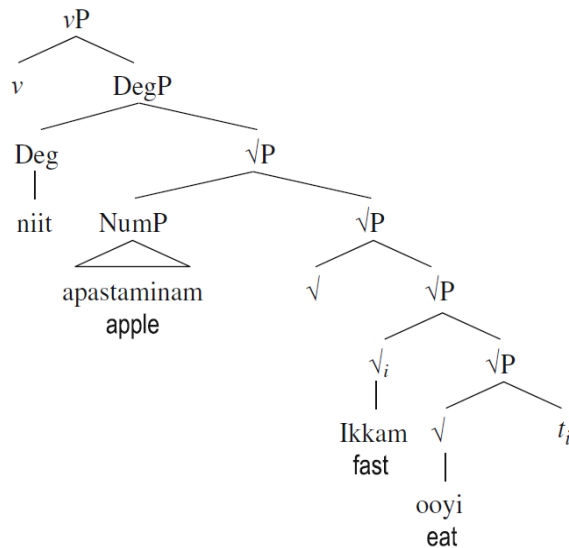


Following this, Barrie assumes that the argument expression *apastaminam* “apple” appears in the left edge, as in (20). A piece of evidence adduced in support of this assumption comes from the fact that Blackfoot is described as a partially non-configurational language, showing relatively flexible structure and limited hierarchical relations among the components comprising the sentence. Thus, arguments, unlike in English, may be moved around, split, or omitted (see Barrie, 2011; Bliss, 2013).

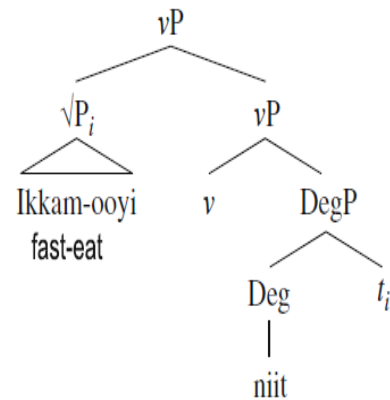


Surprisingly, however, symmetric c-command between the verb and the adverb is not eliminated though incorporated as it appears in (19b). This is ascribed to the fact that the adverbial prefix (Deg) *niit* accompanies the adverbial root *Ikkam* “fast”. Therefore, the head *niit* merges with the verbal root (21a), the verbal root raises to Spec-*vP* (i.e., a lexical root combines with a verbal categorizer, yielding V-to-*v* raising) (21b), and finally the durative aspect head *á* merges with *vP* and simultaneously the DegP raises and occupies the specifier of Aspect Phrase (Spec-AspP) (21c).⁷ (Barrie, 2011).

(21) (a) Barrie (2011:153)

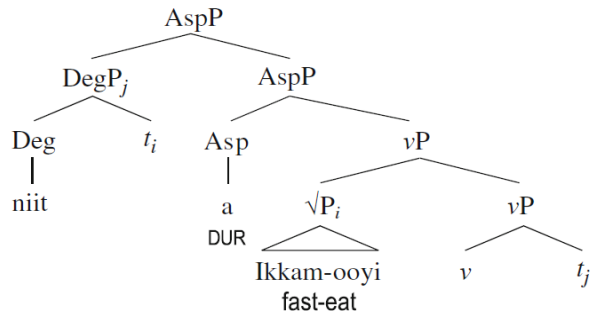


(b) Barrie (2011:154)



⁷ For purposes of derivational simplicity, the nominal argument meaning “apple” is ignored.

(c) Barrie (2011:154)



4. Conclusion

Besides demonstrating that Blackfoot is a highly inflected language, the current squib analyzes two types of incorporation. Noun incorporation, the first type to consider, is found to occur under two restrictions. First, the nominal head, when encoding a body part (i.e., “foot”), linearizes optionally before or after the verb. Unlike noun-verb compounding, the other restriction is a Noun₂–Noun₁ incorporation. This is referred to as “abstract nominalization”, in which Noun₁, the deverbal nominalization, obligatorily incorporates the head noun Noun₂ (not an NP) into it (Noun₁).

Additionally, Blackfoot exhibits adverb-verb incorporation. This type arises from symmetric c-command between the adverbial root and verb in simple cases, which is resolved by raising the adverb to Spec-V. Nevertheless, in complex cases the adverb (of manner/rate) is accompanied by a prefixal adverb of degree, both of which may be separated by a durative aspect marker. As a result, the symmetric c-command in adverb-verb compounding of complex cases still holds until movement and merging operations take place.

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