Yale

Phonological domains within Blackfoot

Towards a family-wide comparison

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Outline

1. Background
2. Two phonological domains in Blackfoot verbs
3. Preverbs are not a separate phonological domain
4. Parametric variation

Background

Consonant inventory

	Labial	Coronal	Dorsal	Glottal
Stops	p pː	t tː	k kː	ʔ <’>
Assibilants		ts tːs	ks	
Pre-assibilants		ˢt ˢtː		
Fricatives		s sː	x <h>	
Nasals	m mː	n nː		
Glides	w	j <y>	(w)	

Long consonants written with doubled letters.

(Derrick and Weber n.d.; Weber 2020)

Vowel inventory

	front	central	back
high	i iː		o oː
mid	ɛː <ai>		ɔː <ao>
low		a aː	

(Derrick and Weber n.d.; Weber 2020)

Vowel inventory

	front	central	back
high	i iː		o oː
mid	ɛː <ai>		ɔː <ao>
low		a aː	

Predictable mid vowels? (Frantz 2017)

Many [ɛː] and [ɔː] arise from coalescence across boundaries

- /a+i/ → [ɛː]
- /a+o/ → [ɔː]

(Derrick and Weber n.d.; Weber 2020)

Contrastive mid vowels

Some [ɛː] and [ɔː] are morpheme-internal, in overlapping environments with other long vowels

⟦ɔːníːt⟧	⟦aːníːt⟧
aoníít	aaníít
[ao–n/i–i]–t–Ø	[aan–ii]–t–Ø
[hole–by.needle/TI–TI1]–2SG.IMP–IMP	[say–AI]–2SG.IMP–IMP
‘pierce it!’	‘say (s.t.)!’

(Weber 2020)

Syntax within the stem

Intransitive (bi-morphemic) vs. syntactically transitive (trimorphemic).
Transitive V is object agreement (Quinn 2006; Rhodes 1994)

[√ROOT	–v^0	–V^0]	Stem type	Gloss
ikinn		–ssi	AI	'he is warm'
ikinn		–ii	II	'it is warm'
itap	–ip/i	–THM	TA	'take him there'
itap	–ip/ht	–oo	TI	'take it there'
itap	–ip/ht	–aki	AI(+O)	'take (s.t.) there'

(Déchaine and Weber 2015, 2018; Weber 2020)

Syntax within the verbal complex

Template

$$_{\text{CP}}[\,\text{person–(preverb)*–}_{v\text{P}}[\,\sqrt{\textsc{root}}\text{–(med)–}v\text{–V}\,]_{v\text{P}}\text{–I}^0\text{–C}^0\,]_{\text{CP}}$$

- Minimal verbal complex: stem plus suffixes (I^0, C^0).
- Optional preverbs; person prefixes only some clause types

(Weber 2020)

Two phonological domains in Blackfoot verbs

Two phonological domains in Blackfoot verbs

1. CP verbal complex = Phonological Phrase (PPh)
2. VP/*v*P stem = Prosodic Word (PWd)

Roadmap

- Stem-internal epenthesis
- Diagnosing the right edge of the stem
- Diagnosing the left edge of the stem

Data

- Primarily from Frantz and Russell (2017)
- Phonetic transcriptions are based on orthography; given in ⟦ ⟧

Stem-internal epenthesis

Vowel-initial suffixes

[a]-initial suffix *-ap-* 'CORD'

After C

⟦ijíːˢtapapɪnːiːwa̧⟧

iyíístapapinniiwa

[iyiistap–ap–inn–ii]–Ø–wa

[away–CORD–by.hand.TA–3SUB]–IND–3

'he adjusted the strand out and away from it'

After V

⟦nítsːaːpɪnːawa̧⟧

nítssaapinnawa

nit–[sa–ap–inn–a]–Ø–wa

1–[out–CORD–by.hand.TA–3OBJ]–IMP–3

'I adjusted the strand out from the inside of it'

Vowel-initial suffixes

[o]-initial suffix *-op* ‘sit’

After C

⟦nitâːksːapopiː⟧

nitáakssapopii

nit–aak–[sap–op/ii]–(hp)

1–FUT–[inside–sit/AI]–(IND)

‘I’ll ride in (a vehicle)’

After V

⟦ípʌkːsːɔːpiːwa̧⟧

ípakkssaopiiwa

[ipakkssa–op/ii]–Ø–wa

[bare–sit/AI]–IND–3

‘he’s sitting with nothing on (in the nude)’

Vowel-initial suffixes

* i > [i_1]-initial suffix *-istot* ‘CAUS’

After C

⟦sapíˢtotóːsa̧⟧

sapístotóósa

[sap–istot/o–ːs]–Ø

[correct–CAUS/TA–2SG:3.IMP]–CMD

‘reach an agreement with him!’

After V

⟦satɛ́ːˢtotoːs⟧

satáístotoosa

[sata–istot/o–ːs]–Ø

[offended–CAUS/TA–2SG:3.IMP]–CMD

‘purposely make her angry!’

Summary: Vowel-initial suffixes

Underlying short vowels within the stem

V =	a	o	i_1	i_2
After C	a	o	i	i
a+V	a:	ɔː	ɛː	ɛː
i+V	ja/a	jo/o	i:	i:
o+V	a:/a	o:	oi	oi

* i > [i_1]; * e > [i_2]; [i_1] causes a preceding /k/ to assibilate

(Berman 2006; Elfner 2006; Weber 2020)

Consonant-initial suffixes

After C

⟦nitâːksox^{w}ksi**p**i^{s}ta⟧

nitáaksoohksi**p**istaa

nit–aak–[yoohk–**p**/ist–aa]–(hp)

1–FUT–[lid–**tie**/TA–AI]–(IND)

‘I will close the tipi flap’

After V

⟦aːwá**p**i^{s}taːt⟧

aawá**p**istaat

[aawa–**p**/ist–aa]–t–Ø

[wander–**tie**/TA–AI]–2SG.IMP–CMD

‘make a cradle swing!’

Consonant-initial suffixes

After C

⟦iːkómx̣ksi**k**awa̰⟧

iikómahksi**k**awa

ii\ik–[omahk–**k**a–Ø]–wa

IC\DEG–[big–**leg**–AI]–IND–3

‘he has big feet’

After V

⟦amo**k**ápiˢtaːt⟧

amo**k**ápistaat

[amo–**k**a–p/ist–aa]–t–Ø

[gather–**leg**–tie/TA–AI]–2SG.IMP–CMD

‘hobble!’

Summary: consonant-initial suffixes

Underlying consonants within the stem

After C	After V	UR	Gloss
[-ip]	[-p]	/-p/	‘tie’
[-ika]	[-ka]	/-ka/	‘leg’

Summary: consonant-initial suffixes

Underlying consonants within the stem

After C	After V	UR	Gloss
[-ip]	[-p]	/-p/	'tie'
[-ika]	[-ka]	/-ka/	'leg'

Three correlates

1. Concatenate directly after vowels (no mutation to vowel)
2. Epenthetic [i_1] between consonants.
3. Epenthesis always causes *k*-assibilation.

Diagnosing the right edge of the stem

Diagnosing the right edge of the stem

Selected suffixes within the independent clause type.

- Central agreement suffixes (AGR) occur between I^0 and C^0
- Segments in parentheses occur in some phonological environments.

…V^0	–I^0	–AGR	–C^0
-aa ‘3OBJ’	-Ø	-(i)nnaan ‘1PL’	-(w)a ‘3’
-ok ‘INV’	-hp	-oaa ‘PL’	-(y)ini ‘3SG.OBV’
			-(y)i ‘3PL’

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			-(y)i ‘3PL’

Diagnosing the right edge of the stem

After C

⟦nitsikákomɪmːokɪ**nː**aːniˌ	kitániksiˌ⟧
Nitsikákomimmoki**nn**aani	kitániksi.
nit–ik–[akom–imm–ok]–Ø–**nn**aan–i	k–itan–iksi
1–DEG–[favor–by.mind.TA–INV]–IND–1PL–3PL	2–daughter–AN.PL

‘Your daughters love us.’ (Frantz 2009: 56, (i))

After V

⟦nitsikákomɪmːʌ**nː**aːniˌ	kitániksiˌ⟧
Nitsikákomimma**nn**aani	kitániksi.
nit–ik–[akom–imm–aa]–Ø–**nn**aan–i	k–itan–iksi
1–DEG–[favor–by.mind.TA–3OBJ]–IND–1PL–3PL	2–daughter–AN.PL

‘We (excl.) love your daughters.’ (Frantz 2009: 53, (g))

Diagnosing the right edge of the stem

After C		After V	UR	Gloss
[-ɪnːaːn]	∼	[-nːaːn]	/-nːaːn/	‘1PL’

Right edge correlates

- Agreement suffix begins with a consonant.
- But stem-final /k/ does *not* assibilate to [ks] before epenthetic [i].

Diagnosing the left edge of the stem

Verbal complex syntax

ROOT ALTERNATIONS

1. Left edge of the verbal complex (IMP)
2. Medially, after a prefix (IMP or IND)

IMPERATIVE

⟦**iɪ.p**í.ˢto.tsi.t⟧

iipístotsit

[√**yiip**–istot/Ø–i]–t–Ø

[√**decrease**–CAUS/TI–TI1]–2SG.IMP–CMD

‘decrease the volume of it (e.g. of your load of ironing)!’

INDEPENDENT

⟦ni.tá.**jiɪ.p**i.ˢto.tsi:ʔ.pa̰⟧

nitá**yiip**istotsii’pa

nit–a–[√**yiip**–istot/Ø–i]–hp–a

1–IPFV–[√**decrease**–CAUS/TI–TI1]–IND–3

‘I am decreasing the amount’

Roots which begin with a non-continuant

Some roots begin with an obstruent or nasal as well.

C-initial roots

pommáát

[pomm–aa]–t–Ø

[buy–AI]–2SG.IMP–CMD

‘buy!’

pommóós

[pomm–o–ːs]–Ø

[transfer–TA–2SG:3.IMP]–CMD

‘transfer (e.g. the medicine bundle) to him!’

Roots which begin with a non-continuant

Some roots begin with an obstruent or nasal as well.

C-initial roots

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‘buy!’

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[pomm–o–ːs]–Ø

[transfer–TA–2SG:3.IMP]–CMD

‘transfer (e.g. the medicine bundle) to him!’

V-initial roots

ohpóísskinisa

[ohpo–isski–n–:s]–Ø

[grease–face–by.hand.TA–2SG:3.IMP]–CMD

‘paint his face!’

ipótsimatsísa

[ipotsim–at–:s]–Ø

[poison–TA–2SG:3.IMP]–CMD

‘poison him!’

Roots which begin with a non-continuant

Two major patterns for plosive-initial roots

1. <oh> accretion at the left edge of root
2. <i> epenthesis at the left edge of root

After C

⟦âːkx̱ʷpʊmːaːwa̱⟧

áakohpommaawa

aak–[ohpomm–aa]–Ø–wa

FUT–[buy–AI]–IND–3

‘she will buy’

After V

[óxʷpʊmːa]

áóhpommaawa

a–[ohpomm–aa]–Ø–wa

IPFV–[buy–AI]–IND–3

‘s/he is shopping’ (BB)

Roots which begin with a non-continuant

Two major patterns for plosive-initial roots

1. <oh> accretion at the left edge of root
2. <i> epenthesis at the left edge of root

After C

[[âːksipúmːojiːwáji̥]]

áaksipómmoyiiwáyi

aak–[ipomm–o–yii]–Ø–w=ayi

FUT–[transfer–TA–3SUB]–IND–3=OBV.SG

'he will transfer it to her'

After V

[[éːpʊmːakiwḁ]]

áípommakiwa

a–[ipomm–Ø–aki]–Ø–wa

IPFV–[transfer–TA–AI]–IND–PRX

'the one transferring (previous owner)'

Roots which begin with a non-continuant

	Left edge		After prefix	UR	Gloss
a.	* ⟦p...⟧	~	* ⟦p...⟧		
b.	⟦pʊmː⟧	~	⟦oxʷpʊmː⟧		‘buy’
	⟦pʊmː⟧	~	⟦ipʊmː⟧		‘transfer’
c.	⟦ohpo⟧	~	⟦ohpo⟧	/ohpo/	‘grease’
	⟦ipotsim⟧	~	⟦ipotsim⟧	/ipotsim/	‘poison’

Roots which begin with a non-continuant

	Left edge		After prefix	UR	Gloss
a.	* ⟦p...⟧	~	* ⟦p...⟧		
b.	⟦pʊmː⟧	~	⟦oxʷpʊmː⟧	/oxʷpʊmː, pʊmː/	‘buy’
	⟦pʊmː⟧	~	⟦ipʊmː⟧	/pʊmː/	‘transfer’
c.	⟦ohpo⟧	~	⟦ohpo⟧	/ohpo/	‘grease’
	⟦ipotsim⟧	~	⟦ipotsim⟧	/ipotsim/	‘poison’

Diagnosing the left edge of the stem

- Epenthesis at the left edge of the stem causes *k*-assibilation.
- But differs from stem-internal epenthesis.
  - Not driven by phonotactic constraints.
  - Epenthesis occurs after consonants or vowels.

Diagnosing the left edge of the stem

Table 1: Segments allowed at left edge of roots in two positions: the left edge of the verbal complex vs. after a prefix

	p	k	m	n	j	w	iː	oː	ɛː	ɔː	aː	i	o	a
Left edge	✓	✓	✓	✓	✘	✘	✓	✓	✓	✓	✓	✓	✓	✓
After prefix	✘	✘	✘	✘	✓	✓	✓	✓	✘	✘	✘	✓	✓	✓
				[-cont]		[-cons]								

Proposal: Root alternations and epenthesis occur in order to satisfy edge constraints of two distinct prosodic constituents.

Analysis: two distinct phonological phrases

- Verbal complex = CP — Phonological Phrase (PPh)
- Stem = VP/*v*P — Prosodic Word (PWd)

Syntax $_{CP}[\,\text{prefix}-\ _{vP}[\,\sqrt{\text{ROOT}}-v-\text{V}\ ]_{vP}-\text{I}^0-\text{C}^0\,]_{CP}$

Prosody $_{PPh}(\text{prefix}-\ _{PWd}(\sqrt{\text{ROOT}}-v-\text{V}\,)_{PWd}\ -\text{I}^0-\text{C}^0\,)_{PPh}$

*[-cons] *[-cont] /k/ ↛ [ks] / ___ i

Analysis

Analysis

- **Onset** Assign a violation mark for every syllable whose left edge aligns with the left edge of a moraic segment.
- ***#[-cont]** Assign a violation mark for every [-cont] segment which is exhaustively dominated by a syllable and occurs leftmost within the PWd.
- **Al(*v*P,PWd)** The left edge of every *v*P phase aligns with the left edge of a PWd.
- **Dep(μ)** Assign a violation mark for every mora in the output which does not have a correspondent in the input.
- **Al(PWd,σ)** The left edge of every PWd aligns with the left edge of a syllable.
- ***Vː** Assign a violation mark for every long vowel in the output.

Analysis

[pʊmːóːs] *pommóós* ‘transfer to him’

[[pomː-o]$_{vP}$ -ːs]$_{CP}$	Ons	*#[-cont]	Al(*v*P,PWd)	Dep(μ)	Al(PWd,σ)	*Vː
☞ a. ((pʊm.móː)$_{PWd}$.s)$_{PPh}$		*				*
b. ((i.pʊ́m.moː)$_{PWd}$.s)$_{PPh}$	*!		μ	*		*
c. (i. (pʊ́m.moː)$_{PWd}$.s)$_{PPh}$	*!	*!		*	*	*

Crucial rankings: Onset ≫ *#[-cont]

[ɛ́ːpʊmːakiwa̧] *áipommakiwa* ‘the one transferring’

[a- [pomː-aki]$_{vP}$ -wa]$_{CP}$	Ons	*#[-cont]	Al(*v*P,PWd)	Dep(μ)	Al(PWd,σ)	*Vː
a. (á. (pʊm.ma.ki)$_{PWd}$.wa̧)$_{PPh}$	*	*!				
☞ b. (ɛ́ (ɛ́.pʊm.ma.ki)$_{PWd}$.wa̧)$_{PPh}$	*		μ	*	*	*
c. (ɛ́ː. (pʊm.ma.ki)$_{PWd}$.wa̧)$_{PPh}$	*	*!		*		*
d. ((ɛ́ː.pʊm.ma.ki)$_{PWd}$.wa̧)$_{PPh}$	*		μμ!	*		*

Crucial rankings: *#[-cont] ≫ {Al(*v*P,PWd), Dep-IO(μ), Al(PWd,σ), *Vː}

Left edge of PWd in optimal candidate does not align with the left edge of a syllable

Preverbs are not a separate phonological domain

Preverbs are not a separate phonological domain

Preverb

Any constituent which freely precedes a verb stem (*excluding* person prefixes and certain tense prefixes which occur in a fixed order).

	$_{CP}[$ preverb	$_{vP}[\ \sqrt{}\text{ROOT}\text{–}v\text{–V}\ ]_{vP}\text{–I}^0\text{–C}^0\ ]_{CP}$
1.	$_{PPh}($ preverb–	$_{PWd}(\ \sqrt{}\text{ROOT}\text{–}v\text{–V}\ )_{PWd}\text{–I}^0\text{–C}^0\ )_{PPh}$
2.	$_{PPh}(\ _{PWd}(\ \text{preverb–}\ )_{PWd}\ )_{PPh}$	$_{PPh}(\ _{PWd}(\ \sqrt{}\text{ROOT}\text{–}v\text{–V}\ )_{PWd}\text{–I}^0\text{–C}^0\ )_{PPh}$
3.	$_{PPh}(\ _{PWd}(\ \text{preverb–}\ )_{PWd}$	$_{PWd}(\ \sqrt{}\text{ROOT}\text{–}v\text{–V}\ )_{PWd}\text{–I}^0\text{–C}^0\ )_{PPh}$
4.	$_{PPh}(\ _{PWd}(\ \text{preverb–}$	$_{PWd}(\ \sqrt{}\text{ROOT}\text{–}v\text{–V}\ )_{PWd}\ )_{PWd}\text{–I}^0\text{–C}^0\ )_{PPh}$

Left edge restrictions: preverbs vs. verbal complex

Left edge

((iː.ˢts (i.pʊ́m.ma.toː)$_{PWd}$)$_{PWd}$.t)$_{PPh}$

[[yiist–[ipomm–at–oo]$_{vP}$]$_{vP}$–t–Ø]$_{CP}$

[[on.back–[transfer–TI–TI2]$_{vP}$]$_{vP}$–2SG:3.IMP–CMD]$_{CP}$

‘unload it from your back!’

After V

(niː.tá?.pa. (jiː.ˢts (i.pʊm.ma.toː)$_{PWd}$)$_{PWd}$.mą̊)$_{PPh}$

[niita’p–a–[yiist–[ipomm–at–oo]$_{vP}$]$_{vP}$–m–a]$_{CP}$

[really–IPFV–[on.back–[√transfer–TI–TI2]$_{vP}$]$_{vP}$–IND–3]$_{CP}$

‘he started to take it off his back/body’

Left edge restrictions: preverbs vs. verbal complex

The left edge of the preverb is not at the left edge of a PPh.

	$_{CP}[$ preverb	$_{v\mathrm{P}}[\ \sqrt{}_{\mathrm{ROOT}}\text{–}v\text{–}\mathrm{V}\ ]_{v\mathrm{P}}\text{–}\mathrm{I}^0\text{–}\mathrm{C}^0\ ]_{CP}$
~~1.~~	~~$_{\mathrm{PPh}}($ preverb–~~	~~$_{\mathrm{PWd}}(\ \sqrt{}_{\mathrm{ROOT}}\text{–}v\text{–}\mathrm{V}\ )_{\mathrm{PWd}}\text{–}\mathrm{I}^0\text{–}\mathrm{C}^0\ )_{\mathrm{PPh}}$~~
2.	$_{\mathrm{PPh}}(\ _{\mathrm{PWd}}(\ \text{preverb–}\ )_{\mathrm{PWd}}\ )_{\mathrm{PPh}}$	$_{\mathrm{PPh}}(\ _{\mathrm{PWd}}(\ \sqrt{}_{\mathrm{ROOT}}\text{–}v\text{–}\mathrm{V}\ )_{\mathrm{PWd}}\text{–}\mathrm{I}^0\text{–}\mathrm{C}^0\ )_{\mathrm{PPh}}$
3.	$_{\mathrm{PPh}}(\ _{\mathrm{PWd}}(\ \text{preverb–}\ )_{\mathrm{PWd}}$	$_{\mathrm{PWd}}(\ \sqrt{}_{\mathrm{ROOT}}\text{–}v\text{–}\mathrm{V}\ )_{\mathrm{PWd}}\text{–}\mathrm{I}^0\text{–}\mathrm{C}^0\ )_{\mathrm{PPh}}$
4.	$_{\mathrm{PPh}}(\ _{\mathrm{PWd}}(\ \text{preverb–}$	$_{\mathrm{PWd}}(\ \sqrt{}_{\mathrm{ROOT}}\text{–}v\text{–}\mathrm{V}\ )_{\mathrm{PWd}}\ )_{\mathrm{PWd}}\text{–}\mathrm{I}^0\text{–}\mathrm{C}^0\ )_{\mathrm{PPh}}$

Minimal size constraints: preverbs vs. verbal complex

Different minimal size constraints

Minimal preverbs

CV	sa-	‘out’
VC	on-	‘hurry’

Minimal verbs and nouns

CVVC	píí-t	‘enter!’
	sóó-t	‘go to war!’
	kóón	‘ice’
CVCC	pónn	‘bracelet’
	kó’s	‘dish, bowl’

Edge constraints: preverbs vs. verbal complexes

No verbal complex ends in an underlying glottal stop

⟦sːkéj?papʊmːaˌ⟧	cf. ⟦ipapʊmːaˌ⟧
sskáí’papomma	ipapómma
sska’–[ipap–o]–mm–a	[ipap–o]–mm–a
shock–[emit.burst–II]–IND–3	[emit.burst–II]–IND–3
‘the lightning really flashed’	‘there was lightning’

(Frantz and Russell 2017; Peterson 2004)

Edge constraints: preverbs vs. verbal complexes

Final [j] before [i]; final [w] elsewhere

⟦iːksíjiçpijiwa̰⟧
iiksíyihpiyiwa
ii\iksiw–[ihpi–yi]–Ø–a
IC\ground.level–[dance–AI]–IND–3
'he danced low'

⟦iˢtsiksiwɛ́ːnaka?sit⟧
istsiksiwáínaka'sit
ist–iksiw–a–[inak–a'si]–t–Ø
there–ground.level–[roll–AI]–2SG.IMP–CMD
'roll there!'

Edge constraints: preverbs vs. verbal complexes

Verbal complex can end in a non-alternating [j]

itɔ́ːxʷtoji
iitáóhtoyii
ii\it–[yooht–o–ii]–Ø–wa
IC\then–IPFV–[hear–TA–3SUB]–IND–3

amí	iːmaxkçinaj	ɔ́xʷkomiːnɛː
amí	iimahkihkinay	áóhkomiinai.
am–i	iimahkihkinaa–yi	a–[ohkom–i]–Ø–yini=ayi
DEM–OBV	sheep–OBV	IPFV–[bellow–AI]–IND–3OBV=OBV.SG

‘[He was still picking and] he heard this goat.’

Pear Story, told by Totsinámm

Summary: preverbs vs. verbal complex

Preverbs are not prosodified as a PPh.

	$_{CP}[$ preverb	$_{v}P[\sqrt{}_{ROOT}\text{–}v\text{–}V]_{vP}\text{–}I^0\text{–}C^0]_{CP}$
~~1.~~	~~$_{PPh}($ preverb–~~	~~$_{PWd}(\sqrt{}_{ROOT}\text{–}v\text{–}V)_{PWd}\text{–}I^0\text{–}C^0)_{PPh}$~~
~~2.~~	~~$_{PPh}(_{PWd}($ preverb– $)_{PWd})_{PPh}$~~	~~$_{PPh}(_{PWd}(\sqrt{}_{ROOT}\text{–}v\text{–}V)_{PWd}\text{–}I^0\text{–}C^0)_{PPh}$~~
3.	$_{PPh}(_{PWd}($ preverb– $)_{PWd}$	$_{PWd}(\sqrt{}_{ROOT}\text{–}v\text{–}V)_{PWd}\text{–}I^0\text{–}C^0)_{PPh}$
4.	$_{PPh}(_{PWd}($ preverb–	$_{PWd}(\sqrt{}_{ROOT}\text{–}v\text{–}V)_{PWd})_{PWd}\text{–}I^0\text{–}C^0)_{PPh}$

Edge constraints: preverbs vs. stem

Stem-final /k/ does not assibilate before epenthetic [i]

rˢtːχ̩ʷksísoka?simi	cf. soká?simi
isttohksísoka'simi	soká'simi
isttohk–soka'sim–i	soka'sim–i
thin–shirt–IN.SG	shirt–IN.SG
'shirt'	'shirt, dress, outer garment'

Summary: preverbs vs. stem

Preverbs are not prosodified as a PWd.

$_{\text{CP}}[\,\text{preverb}$ $\quad$ $_{v\text{P}}[\,\sqrt{\text{ROOT}}\text{–}v\text{–V}\,]_{v\text{P}}\text{–I}^0\text{–C}^0\,]_{\text{CP}}$

1. ~~$_{\text{PPh}}(\,\text{preverb}\text{–}$ $\quad$ $_{\text{PWd}}(\,\sqrt{\text{ROOT}}\text{–}v\text{–V}\,)_{\text{PWd}}\text{–I}^0\text{–C}^0\,)_{\text{PPh}}$~~
2. ~~$_{\text{PPh}}(\,_{\text{PWd}}(\,\text{preverb}\text{–}\,)_{\text{PWd}}\,)_{\text{PPh}}$ $_{\text{PPh}}(\,_{\text{PWd}}(\,\sqrt{\text{ROOT}}\text{–}v\text{–V}\,)_{\text{PWd}}\text{–I}^0\text{–C}^0\,)_{\text{PPh}}$~~
3. ~~$_{\text{PPh}}(\,_{\text{PWd}}(\,\text{preverb}\text{–}\,)_{\text{PWd}}$ $\quad$ $_{\text{PWd}}(\,\sqrt{\text{ROOT}}\text{–}v\text{–V}\,)_{\text{PWd}}\text{–I}^0\text{–C}^0\,)_{\text{PPh}}$~~
4. $_{\text{PPh}}(\,_{\text{PWd}}(\,\text{preverb}\text{–}$ $\quad$ $_{\text{PWd}}(\,\sqrt{\text{ROOT}}\text{–}v\text{–V}\,)_{\text{PWd}}\,)_{\text{PWd}}\text{–I}^0\text{–C}^0\,)_{\text{PPh}}$

(contra Windsor 2017a,b)

Summary: preverbs vs. stems vs. verbal complexes

	Preverbs	Stem	Verbal complex
Left edge allows glides	✓	✓	✘
Minimal size	CV, VC	CVV	CVVC, CVCC
Right edge allows [ʔ]	✓	✘	✘
Right edge allows [w] ∼ [j]	✓	✘	✘
Right-edge /k/ → [ks] before [i]	✓	✘	✘

Implications for preverbs

Many definitions define preverbs phonologically.

- For Bloomfield, preverbs form "compounds" with the stem via word *composition*; 'the members are treated phonetically like words in a phrase' (Bloomfield 1946: 103).
- A preverb is a phonologically independent word that is syntactically part of a compound verb stem. (Goddard 1990: 478)

Blackfoot shows this is not always true, and is a point of variation within the family.

Parametric variation

Parametric variation

1. Which prosodic boundary (if any) has edge constraints? This determines the locus of alternation.
2. Can prosodic boundaries mismatch from syllable edges?
3. How are preverbs prosodified? As independent PWds, as a recursive PWd, or something else?

Which prosodic boundary (if any) has edge constraints?

Blackfoot

- left edge of stem (initial)
- ⟦pomm⟧ ∼ ⟦ipomm⟧ ‘transfer’

Plains Cree

- right edge of preverb;
- [mât] ∼ [mâci] ‘start’

a. mâ**t**atoskêw ‘s/he begins work’

b. mâc**i**-atoskêw ‘s/he starts working’

(Wolvengrey 2011)

Can prosodic boundaries mismatch from syllable edges?

Blackfoot

Always (unless stem begins with a glide)

Plains Cree

- Before C: never
- Before V: optionally

a.	mâ.ci.-pî.kis.kwêw	‘s/he starts speaking’	match
b.	mâ.ci.-a.tos.kêw	‘s/he starts working’	match
c.	mâ.**c-â**.tos.kêw	‘s/he starts working’	mismatch

(Russell 2008; Wolvengrey 2011)

How are preverbs prosodified?

Blackfoot

PWd adjunct
(daughter and sister to a PWd)

Plains Cree

- Before C: separate PWd
- Before V: internal to PWd or separate PWd (variable?)

a.	(mâ.ci)-(pî.kis.kwêw)	‘s/he starts speaking’
b.	(mâ.ta.tos.kêw)	‘s/he begins work’
c.	(mâ.ci.)-(a.tos.kêw)	‘s/he starts working’
	mâ.ca)-(a.tos.kêw)	‘s/he starts working’

“Dispersed” workshops on Algonquian prosody

- Remote, partly a-synchronous, small groups
- Workshops oriented around concrete questions about prosody
- Goal: develop a set of Algonquian “diagnostic tests” for determining prosody
- So far: Cheyenne, Blackfoot, a bit of Plains Cree, a bit of Saulteaux Ojibwe

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References

References I

Derrick, Donald and Natalie Weber. *Blackfoot*. Ms, to be submitted to the Illustrations of the IPA series of the *Journal of the International Phonetic Association*, ca. end of September 2020. In preparation.

Berman, Howard. 2006. Studies in Blackfoot prehistory. *International Journal of American Linguistics* 72(2): 264–284.

Bliss, Heather. 2013. *The Blackfoot configurationality conspiracy: Parallels and differences in clausal and nominal structures*. University of British Columbia, PhD thesis.

Bloomfield, Leonard. 1946. Algonquian. In *Linguistic structures of Native America*, Hoijer, Harry (ed.), 85–129. (Publications in Anthropology 6). New York: Viking Fund.

Déchaine, Rose-Marie and Natalie Weber. 2015. Head-Merge, Adjunct-Merge, and the Syntax of Root Categorisation. In *Proceedings of the Poster Session of the 33rd West Coast Conference on Formal Linguistics*, Umbal, Pocholo and Kyeong-min Kim (eds.), 38–47. (SFUWPL 5).

References II

Déchaine, Rose-Marie and Natalie Weber. 2018. Root syntax: Evidence from Algonquian. In *Papers of the Forty-seventh Algonquian Conference*, Macaulay, Monica (ed.). Michigan State University Press.

Elfner, Emily. 2006. Contrastive syllabification in Blackfoot. In *Proceedings of the 25th West Coast Conference on Formal Linguistics*, Baumer, Donald, David Montero and Michael Scanlon (eds.), 141–149. Cascadilla Proceedings Project. Somerville, MA.

Frantz, Donald G. 2009. *Blackfoot grammar*. 2nd edn. University of Toronto Press.

Frantz, Donald G. 2017. *Blackfoot grammar*. 3rd edn. University of Toronto Press.

Frantz, Donald G. and Norma Jean Russell. 2017. *Blackfoot dictionary of stems, roots, and affixes*. 3rd edn. University of Toronto Press.

Goddard, Ives. 1990. Primary and secondary stem derivation in Algonquian. *International Journal of American Linguistics* 56(4): 449–483.

Newell, Heather and Glyne Piggott. 2014. Interactions at the syntax–phonology interface: Evidence from Ojibwe. *Lingua* 150: 332–362. URL `http://linkinghub.elsevier.com/retrieve/pii/S0024384114001740`.

References III

Peterson, T. 2004. Theoretical issues in the representation of the glottal stop in Blackfoot. In *Proceedings from the 7th Workshop on American Indigenous Languages* [*WAIL 7*], Harper, Lea and Carmen Jany (eds.), 106–121. (Santa Barbara Papers in Linguistics vol. 15). Santa Barbara.

Quinn, Conor. 2006. *Referential Access Dependency in Penobscot*. Harvard University, PhD Dissertation.

Rhodes, Rhichard A. 1994. Agency, inversion, and thematic alignment in Ojibwe. In *Proceedings of the 20th Annual Meeting of the Berkeley Linguistics Society*, Gahl, Susanne, Andy Dolbey and Christopher Johnson (eds.), 431–446.

Russell, Kevin. 1992. Palatalization and epenthesis in Plains Cree. In *Proceedings of the Canadian Linguistics Association*.

Russell, Kevin. 1999. The ”word” in two polysynthetic languages. In *Studies on the phonological word*, Hall, T Alan and Ursula Kleinhenz (eds.), 203–222. Amsterdam: John Benjamins Publishing.

Russell, Kevin. 2008. Sandhi in Plains Cree. *Journal of Phonetics* 36(3): 450–464.

Vogel, Irene. 2008. The morphology-phonology interface: Isolating to polysynthetic languages. *Acta Linguistica Hungarica* 55(1/2): 205–226.

References IV

Weber, Natalie. 2016. Accent and prosody in Blackfoot verbs. In *Papers of the Forty-fourth Algonquian Conference: Actes du Congrès des Algonquinistes*, Macaulay, Monica, Margaret Noodin and J. Randolph Valentine (eds.), 348–369. SUNY Press.

Weber, Natalie. 2017. *Structure at the right edge of prosodic words in Blackfoot*. Paper, Workshop on the Structure and Constituency in Languages of the Americas [WSCLA] 22. University of British Columbia, Vancouver, BC, Apr. 21–23, 2017.

Weber, Natalie. 2020. *Syntax, prosody, and metrical structure in Blackfoot*. University of British Columbia, PhD thesis.

Windsor, Joseph W. 2017a. *From phonology to syntax — and back again: Hierarchical structure in Irish and Blackfoot*. University of Calgary, Doctoral dissertation.

Windsor, Joseph W. 2017b. Predicting prosodic structure by morphosyntactic category: A case study of Blackfoot. *Glossa* 2 (1).

Wolvengrey, Arok (comp.). 2011. *nêhiýawêwin: itwêwina* [*Cree: Words*]. Regina, SK: University of Regina Press.