

Blackfoot

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1.0 Introduction

Blackfoot is an Algonquian language spoken by about 5000 people of the Blood, Peigan, and Siksika tribes in southern Alberta and Northern Montana. It's closest sister within the Algonquian family is Cree. Geographically, Blackfoot has the most contact with English. The data was collected from Deanna Starlight, a female in her early forties who was raised on the Siksika reserve.

The accent system in Blackfoot is unclear. Mostly it seems to be stress, however at times, it seems that there are tonal qualities.

The language is currently in a period of rapid change between what it's speakers classify as "Old Blackfoot" and "New Blackfoot"; dialects spoken by older and younger generations respectively. It is to this latter categorization that our informant belongs. Comparisons have drawn between the two dialects, using **The Blackfoot Dictionary of Stems, Roots and Affixes** by D.G. Frantz and N.J. Russell as a conservative form of Blackfoot.

Because of typesetting constraints, creaky voice has been marked with an underline.

2.0 Consonants

Stops	p	t		k	ʔ
Fricatives		s		ç	(h)
Affricates		ts	(tç)		
Nasals	m	n			
Glides	w		j		

There are no voiced non-sonorant consonants in Blackfoot nor are there any liquids. Stops are not aspirated but they are released (except those marked). Length is contrastive.

2.1 Stops

	Initial	Medial
p	1. bird [pikʔsɪɪ]	3. person [ma'tapi]
	2. child [pu'kaw]	4. sit [ʌ'pit]
	Final	Long
	5. I see it [te:nip]	7. coffee [ni'tapʔsɪksɪkimɪ]
	6. I know it [nɪts'ksɪnip]	

	Initial		Medial	
t	8. who	[tʊ'ka:]	10. few	[matakawʊw]
	9. wife	[tʊx'ki:ma:n]	11. river	['i:tʌxtan]
	Final		Long	
	12. come	[e'stut]	14. black	[sɪksi'næt:sɪ]
	13. cut	[ɪstsi'nɪt]	15. one	[ni'tʊkska:]

	Initial		Medial	
k	16. night	[kuʔkun]	18. child	[pu'kaw]
	17. door	[ki'tsɪn]	19. thick	[ɪs:pi'kiw]
	Final		Long	
	20. they're gonna hit you	['kʰəkawajɛk'ʊk]	22. sleep	[u'kɪa:t]
	21. a large stone	['umʌxkʊxkutuk]	23. small	[pu'ki:t]

	Initial		Medial	
ʔ	24. say	[ʔa'n:it]	26. night	[kuʔkun]
	25. sit	[ʔʌ'pit]		
	Final			
	27. know	['nɪts:ksɪniʔ]		

2.2 Fricatives

	Initial		Medial	
s	28. no	[sa:]	30. five	[nisitʊj]
	29. black	[sɪksi'næt:sɪ]	31. he is spitting	[e:sʊkʊt:aw]
	Final		Long	
	32. ear	[ʊx'tu:kɪs]	34. it's foggy	[ɪ's:i:næt:si]
	33. give	['kʊtsɪs]	35. heavy	[is'u'kʊj]

	Medial (only in consonant clusters)	
ç	36. dull	[Ikɪç'kininatsi]
	37. name	[ʊ'tsɪniçka:sɪn]

	Medial (only in consonant clusters)	
x	38. hear	[çɔxtsimɪt]
	39. it's swollen	[nekçɔxpi]
	40. leg	[nɔx'katsi]
	41. play	[awɔx'kaɪt]

2.3 Affricates

	Initial		Medial	
ts	42. when	['tsanɪtsɪ:]	44. give	['kʊtsɪs]
	43. where	[tsɪ'ma:]	45. leg	[nɔx'katsi]
	Final (in cluster only)		Long	
	46. south	[ʊmskaɪpɔxts]	48. black	[sɪksi'næt:sɪ]
	47. outside	[sɔçxts]	49. it's foggy	[ɪ'sɪ:næt:sɪ]
			50. flower	['pɪsætsɪs:kɪ]

2.4 Sonorants

	Initial		Medial	
m	51. fish	[mʌ'mi:]	53. hear	[çɔxtsimɪt]
	52. person	[ma'tapi]	54. here	[aɪmɔ]
	Final			
	55. fly	[ɪs:'ksɪ:nam]		
	56. husband	['num]		

	Initial	Medial
n	57. husband [ˈnum]	59. hold [iˈjɪnɪt]
	58. father [ˈnɪn]	60. man [ˈnɪnaw]
	Final	Long
	61. neck [ɔ̞xkʊˈkɪn]	63. die [iˈn:ɪ]
	62. night [kuʔkun]	64. long [ɪnːuˈji]

	Medial	Final (in diphthong)
w	65. stomach [ˈukʊwan]	67. child [puˈkaw]
	66. making tea [ˈawakʊksiman]	68. dog [imiˈtaːw]

	Medial	Final (in diphthong)
j	69. hold [iˈjɪnɪt]	71. big [uməxkʊj]
	70. warm [ˈksistʊjɪ]	72. road [mɔ̞xsʊkʊj]

3.0 Vowels

i		u
ɪ		ʊ
e	ʌ	o
ɛ		ɔ
æ	a	

Phonemically, in Blackfoot, there are only three vowels /i/, /o/, and /a/. However, an inventory of eleven tense and lax allophones of those three phonemes is evident. Vowel length is contrastive, although, with one exception illustrated below, only tense vowels have length. Vowels may also be voiceless in certain environments that will be discussed in section 5.3. Voicelessness is marked on the vowel regardless of whether it is only partial or complete voicelessness.

3.1 /i/

	Initial	Medial
i	73. fear [i'kupuxsIn] 74. fly [is:'ks:i:nam]	75. dog [imi'ta:w] 76. hear [ɔxtsimIt]
	Final	Long
	77. stick [mis'ts:i] 78. person [ma'tapi]	79. hunt [i:ksiman] 80. fly [is:'ks:i:nam] 81. fish [mʌ'mi:]

	Initial	Medial
ɪ	82. cold [ɪ's:tʊjɪ] 83. it's foggy [ɪ's:i:næt:si]	84. give [kʊtsɪs] 85. where [tsɪ'ma:]
	Final	Long
	86. splitting wood [pik'sa:ksɪ] 87. stab [es:ɪnmɪ]	88. buffalo [i'n:ɪ:]

3.2 /a/

	Initial	Medial
a	89. say [a'n:it] 90. many [aka'wʊj]	91. tongue [matsɪ'ni:] 92. few [matakawʊw]
	Final	Long
	93. three [n'ukska] 94. is that right [ʌnja]	95. woman [a'ki:] 96. east [pi'na:pʊxts] 97. who [tʊ'ka:]

	Initial	Medial
e	98. bite [ˈesɪkstæksɪ]	100. they burnt themselves [ˈneɪsɔːksɪsːʊdʒi]
	99. come [eˈstʊt]	101. it's swollen [nekɔːpi]
	Long	
	102. he is spitting [eɪsʊkʊtːɔːw]	
	103. I see it [teɪnɪp]	

	Medial
ɛ	104. flower [ˈpɪsætsːɛsɪkɪ]
	105. they're gonna hit you [ˈkɛkəwajɛkʰʊk]

	Medial	Final
æ	106. bite [ˈesɪkstæksɪ]	108. cow [ˈapʊtskɪnæ]
	107. count [ɔkˈstæksɪn]	

	Initial	Medial
ʌ	109. sit [ʌˈpɪt]	111. dig [awʌˈtʌnɪkɪ]
	110. there [ˈʌnɪm]	112. fish [mʌˈmɪʃ]

3.3 /o/

	Initial	Medial
o	113. count [ɔkˈstæksɪn]	115. what one eats with [ɪçˈtoʊp]
	114. bartender [ˈɔtːəkətsɪmən]	

	Initial	Medial
u	116. stomach [ʉkʉwan] 117. hand [u't:sɪs]	118. heavy [is'u'kʉj] 119. husband [num]
	Long (medial only)	
	120. ear [ʉx'tu:kɪs] 121. four ['nis'u:wʉj]	

	Initial	Medial
ʉ	122. eye [ʉ'waps:pɪn] 123. insides [ʉp'st:u:kɪn]	124. give [kʉtsɪs] 125. one [ni't:ʉkska:]
	Final	
	126. I [ni'stʉ]	

	Initial (voiceless only)	Medial
ɔ	127. hear [ɔxtsimɪt] 128. neck [ɔxkʉ'kɪn]	130. tail [ɔxsɔ'jɪs]
	Final	Long
	131. here [a:mɔ]	132. outside [sɔ:xts]

4.0 Interesting Characteristics of Blackfoot

4.1 Consonant Clusters

To partially compensate for its small consonant inventory, Blackfoot allows a wide variety of consonant clusters, making particular use of [s].

Initial	Medial	Final
133. warm [ksistʊjɪ]	134. bite [esɪkstæksɪɪ]	144. south [ʊmska:pʊxts]
	135. far [ɪ'ki:sɪtapstsi]	145. east [pi'na:pʊxts]
	136. fly [is:'ks:iɪnam]	
	137. insides [ʊp'st:u:kɪn]	
	138. hear [ɔxtsimɪt]	
	139. know [nɪts:ksɪniʔ]	
	140. salt [ɪ'st:sɪksʊpʊkʊj]	
	141. wash [ɪ'sɪststɪn]	
	142. young [i'n:ʌkststɪɪ]	
	143. early [ma'tʊms:tsɪ]	

4.2 Palatalization

In the rare cases where [j] follows a consonant, that consonant is palatalized.

146. they're gonna hit you [k'ɛkawajɛk'ʊk]
 147. three [n'ukska]

One example exhibited the palatalization of the affricate [ts] in word final position. Since only one example of this was encountered and there are word final [ts] examples elsewhere (albeit not alone in the coda) it is difficult to draw any conclusions about this sound.

148. south [ʊmska:pʊxts]
 vs. 149. foot [mʊx'kʌtʃ]

4.3 A Glottal-Nasal Coarticulation?

One word exhibited a very strange segment that sounds as if it could be a simultaneous closure of the glottis and the lips with a nasal release. The dictionary form of this word does not have a glottal stop and there are other similar clusters in which this does not occur.

150. west [mʊx'kɪms:tsɪs]
 vs. 151. think [ksɪʔm's:aɪt]

4.4 Double Vowel Combinations

There are a few examples where two homorganic vowels (each a separate syllable) are beside each other. These vowels are also accompanied by a tonal contour probably used to emphasize the distinction between the two.

152. blood [aaɹ'pʌn]
 153. mouth [nɔɔj]

5.0 Old Blackfoot vs. New Blackfoot

As mentioned earlier, there are quite a few distinctions between Old Blackfoot and New Blackfoot. Since our informant was a speaker of New Blackfoot, **The Blackfoot Dictionary of Stems, Roots and Affixes** by D.G. Frantz and N.J. Russell acted as our source for Old Blackfoot where possible. Some discrepancies between the dictionary forms and examples presented is due to inflectional differences, however, care has been taken to ensure that those inflectional differences are not responsible for the phonetic changes.

5.1 Loss of [ʔ]

The glottal stop of Old Blackfoot is in the process of completely disappearing in New Blackfoot. However, the surrounding segments are changing quality to compensate. At first we thought that a fortis / lenis contrast was developing, however, upon further investigation, we discovered that those consonant that were seemingly fortis were not always in the area of a glottal stop. Instead it seems that the slightly tenser articulation of stops is simply due to accent. The quality changes that are evident include lengthening of both vowels and consonants, and creaky voice on vowels. The deletion of [ʔ] is always accompanied by creaky voice and one, more, or none of the other qualities. Creaky voice on vowels has been marked by an underline (due to typesetting constraints).

Example	Dictionary Form	Effect
Glottal Stop still evident		
154. night [kuʔkun]	/koʔko/	none
155. arm [uʔtsɪs]	/moʔtsɪs/	creaky vowel
156. smoke [ʊʔtsɪsɪw]	/oʔtsɪsɪ:/	creaky vowel

Glottal Stop not evident			
157. bad	[mu'ka:p:sɪn]	/okaʔp/	creaky, long vowel, long consonant
158. star	[kakatɯ:sɪ]	/kakatoʔsi/	creaky, long vowel
159. take it	[mɑ:tsɪt]	/maʔtsi/	creaky, long vowel
160. they burnt themselves	[ne:sək:s:ɔʃi]	/saʔks:/	creaky vowel, long consonant
161. two	[natɯ:kʰa]	/na:toʔka/	creaky vowel, long consonant
162. chair	[su:pat:sɪs]	/so:paʔtsis/	creaky vowel, long consonant

5.2 [#h] & [#w]

Frantz includes [h] in his consonant inventory for Blackfoot and is phonemically the same as /x/. However, the only position it occurs in is alone in the onset of a word-initial syllable. There are three examples of this environment in the dictionary, all of which serve mainly discourse functions. Our speaker had intuitions about only one of those three and she deleted the [h].

- is that right /han:ia/
 163. is that right [ʌnja]

As well, there were some examples in which the dictionary form of the word had a word-initial [w] that was deleted.

- sew /wa:xkania:ki/
 164. sew [ax'kana:t]

5.2 [m:]

All examples with long bilabial nasals in the dictionary forms were changed to [nm] by our speaker.

- laugh /jim:i/
 vs. 165. laugh [ɪʃɪnmɪt]
- stab /sim:/
 vs. 166. stab [es:ɪnmɪ]

5.3 Vowel Voicelessness

In Old Blackfoot, vowels are devoiced in word final position and when preceding /x/. However, New Blackfoot does not exhibit the same behaviour. Vowels preceding /x/ are devoiced but not always completely. In particular, /i/ seems resistant to devoicing. /o/ tends to be the most devoiced.

167. big	[uməxkʊj]
168. dull	[ɪkɪç'kininatsi]
169. fear	[i'kupɯxsɪn]
170. it's swollen	[nekʊxpi]
171. wife	[tʊx'ki:ma:n]

Devoicing is even less prominent when at the beginning of a word (/#Vx/). Again /i/ is the most resistant.

172. ear	[ʊx'tu:kɪs]
173. it's floating that way	[iç'tʊxpi]
174. hear	[ʊxtsimɪt]
175. sew	[əx'kana:t]

Word-final devoicing is not evident in New Blackfoot except perhaps in the reduction of /GV#/ syllables. The final vowels following glides have been deleted although our speaker insisted that they were being articulated.

176. thick	[ɪs:pi'kiw]
178. wind	[sʊ'pʊj]

/i/, seemingly the strongest vowel, is retained in many examples.

179. warm	[ksistʊjɪ]
180. the wind is calming down	[sɪksupʊwɪ]

5.4 Diphthongs

Old Blackfoot has no diphthongs however there are several evident in New Blackfoot in very restricted environments. These innovations are related to the reduction of word final /GV#/ syllables discussed in 5.3. The final vowel is deleted and a diphthong is created with the preceding vowel and the remaining glide.

181. big	[uməxkʊj]
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182. dog	[imi'ta:w]
183. few	[ˈmatakawʊw]
184. thick	[ɪs:pi'kiw]

5.5 Vowel Nasalization

New Blackfoot has begun to nasalize vowels in a nasal environment although this is not in any way regular.

185. lie	[i's:ãntsɪn]
186. old	[i's:ãmsɪɪ]
187. new	[mãɪ'ni:]

In one case it even seems that the velum was closed before the nasal stop was produced in anticipation on the next non-nasal segment.

188. new year	[mãɪ'tɪstʊjɪ]
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6.0 Conclusion

Blackfoot is a very difficult language to study because of the changes that are occurring. There is very little documentation of the language all of which is concerned with Old Blackfoot. As well there are other dialectal differences between the Blackfoot tribes that causes some confusion.

Blackfoot has no widely accepted orthography - Frantz had to develop one in order to write his dictionary. This has the unfortunate side effect that Blackfoot speakers do not analyse their words at all in terms of segments and so often when asked even to provide a word that begins with a certain sound, they are at a loss. Blackfoot is also highly inflectional and so in many cases roots listed in the dictionary were meaningless to the speaker. Together, these factors made it extremely difficult to find minimal pairs, or even predict what sounds and environments will result from asking a given word.

We believe that in future phonetic studies of Blackfoot, it would be very useful to have both New and Old Blackfoot speakers in order to more accurately draw comparisons and illustrate the changes occurring. Especially because with regards to vowels since the dictionary is written phonemically and there is so much allophony.

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