

Speaker variation and the phonetic realization of Blackfoot obviation morphology*

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This paper addresses discrepancies observed in obviation marking between Donald Frantz' (1991) *Blackfoot Grammar* and the authors' data from two fluent adult speakers of Blackfoot. We demonstrate that, for one speaker, obviation suffixes are articulatorily but not acoustically realized in certain morphophonological contexts, and for another speaker, obviation suffixes are most often phonetically null but nevertheless phonologically active. Based on these findings, we argue that the observed discrepancies are surface-level, reflecting differences in the phonetic realization of obviation suffixes, rather than a phonological or morphological discrepancy.

1. Introduction

This paper describes a pattern of speaker variation in the realization of a class of suffixes referred to as OBVIATION SUFFIXES in Blackfoot, a Plains Algonquian language spoken in Southern Alberta and Northwestern Montana. Notable discrepancies have been observed between the description of obviation marking in Donald Frantz' (1991) *Blackfoot Grammar* and our fieldwork-based observations. Specifically, our data from two fluent adult speakers of Blackfoot from two different dialects exhibits an apparent paucity of obviation marking.

Our central claim in this paper is that the observed discrepancies are surface-level, reflecting differences in the phonetic realization of obviation suffixes, rather than a phonological or morphological discrepancy. Looking in detail at the morphophonological and phonetic properties of the contexts in which obviation morphology is typically realized, we observe that both speakers make use of obviation suffixes, in the morphosyntactic environments described by Frantz (1991). However, in word-final position on nouns and verbs, the phonetic realization of obviation suffixes is subject to variation. It is this type of variation that we focus on in this paper.

In §2 we introduce obviation in Blackfoot, and in §3 we reflect on possible explanations for the apparent paucity of obviation marking in the grammars of our two consultants. §4 focuses on the patterns observed in the grammar of Rachel for whom obviation suffixes are articulatorily but not

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acoustically realized in certain morphophonological contexts. §5 focuses on Beatrice, for whom the obviation suffixes are most often phonetically null but nevertheless phonologically active. In §6 we look at contexts in which the obviation suffixes are phonetically realized. §7 concludes.

2. Background on Blackfoot obviation

Obviation is a reference-tracking device common amongst Algonquian languages. In Blackfoot, within a clause containing multiple third persons, the most prominent is proximate and all others are obviative. An example is in (1).¹

- (1) An:á imitáuwą áʔps:kɔji:wą an:í pú:sǫ
 ann-wa imitaa-wa a'p-ssko-yii-wa ann-yi poos-yi
 DEM-PROX dog-PROX around-chase-DIR-PROX DEM-OBV cat-OBV
 'The dog chased the cat'

(1) demonstrates that the underlying form of the suffix is invariantly *-wa* for proximate and *-yi* for obviative, regardless of the category of the item to which the suffix attaches. These suffixes are subject to the regular phonological constraints active in the grammar. For instance, when the suffixes attach to a consonant-final noun or verb stem, the glide is elided, and when the suffixes are word-final, the vowel of the suffix is devoiced.² The glide, however, is not devoiced, often resulting in a change in vowel quality (i.e. diphthongization) of the final vowel of the stem.

3. Speaker variation

In his 1991 *Blackfoot Grammar*, Frantz's only mention of variability is in a footnote (pg 8, fn 5), which states that "certain speakers omit the suffix *-wa* under as yet undetermined conditions. And many younger speakers never seem to use it." In our own fieldwork, we have observed two speakers whose use of the suffixes does not parallel Frantz's description. In particular, neither of our consultant's use of the obviation suffixes appears to be as robust as Frantz' description suggests. There are a number of reasons why this may be so.

The first hypothesis is that the discrepancies can be accounted for in terms of orthography. Frantz' orthography does not reflect word-final devoicing, and speakers unfamiliar with the orthographic conventions have been known to react negatively to the *-wa* and *-yi* suffixes they see in the written forms. In light of this, it is worth considering whether our consultants' negative reactions

¹ Data are given with a phonetic transcription on the first line, and a morpheme-by-morpheme breakdown in the standard orthography on the second line. Abbreviations are as follows: 1, 2, 3 = 1st, 2nd, 3rd person, ACC(ompaniment); AI = animate intransitive, DEM(onstrative); DIR(ect); IMPF = imperfective; INV(erse); OBV(iative); PL(ural); PRV = preverb; PRO(nominal); PROX(imate); TA = transitive animate.

² Note that final vowels on demonstrative determiners are not devoiced. We revisit the demonstratives in §6.2.

to the orthography have influenced our transcription and/or perception of *-wa* and *-yi* forms. However, careful analysis of acoustic recordings confirms that, for both speakers in at least some contexts, *-wa* and *-yi* are indeed absent. Thus, the discrepancies cannot be simply attributed to orthography.

The second hypothesis is that the discrepancy is one of data sources. Cook and Mühlbauer (2006) note that obviation in Plains Cree, a related Algonquian language, behaves differently in elicitation than in texts. Our observations on obviation in Blackfoot are based largely on elicited material, where we might expect to see a paucity of obviation marking, due to the discourse sensitivity of obviation. However, text analysis reveals the same generalizations as the elicited material (e.g. Bullshields et al 2008). Thus, the discrepancies cannot be accounted for with respect to data sources.

The third hypothesis is the one that we advocate in this paper, namely that the discrepancies between our fieldwork-based observations and Frantz’ description are the result of variation in the phonetic realization of obviation suffixes. We will argue that, for one of our speakers, Rachel, obviation suffixes are articulatorily but not acoustically realized in some phonological contexts. For our other speaker, Beatrice, suffixes are neither articulatorily nor acoustically realized in some contexts, but are nevertheless phonologically active. In what follows, we provide a more detailed investigation of the phonetic and phonological properties of obviation marking in these two speakers’ grammars. The conclusion that is reached is that, at an underlying level, both speakers make use of the proximate and obviative suffixes, in the morphosyntactic environments described by Frantz.

4. Speaker #1: Rachel

The first speaker whose productions of proximate and obviative suffixes we discuss is Rachel Ermineskin. Rachel is a fluent speaker of the Siksiká dialect of Blackfoot, who at the time of this study is 74 years of age. She lives on the Siksiká reserve, frequently speaks her native language with family and friends, and is bilingual with English.

The data for Rachel’s productions largely come from an experiment carried out by Bliss and Gick (2009) investigating the acoustic and articulatory properties of word-final voiceless vowels, using a combination of ultrasound, video, and acoustic recordings. For the experiment, Rachel recorded three consonant-final disyllabic nouns with a lexical high tone on the second syllable. Each noun was suffixed with proximate (*-a*) or obviative (*-i*), yielding six forms in total, as listed in (2).

(2) Speech targets for Bliss and Gick (2009) study

Proximate (-a) Forms	Obviative (-i) Forms	English translation
<i>si'káána</i>	<i>si'kááni</i>	‘blanket’
<i>ki'sómma</i>	<i>ki'sómmi</i>	‘moon’
<i>miistsísa</i>	<i>miistsísi</i>	‘tree’

Each target was repeated in each condition 10 times, yielding 60 tokens.

Acoustic analysis revealed that only three of the sixty tokens exhibited any voicing on the final vowel; these tokens were omitted from ultrasound and video results. Ultrasound results showed a statistically significant difference in tongue height for voiceless *-a* and *-i*, and video results of lip aperture similarly exhibited a significant difference in the distance between the top and bottom vermilion borders for *-a* and *-i*.

Bliss and Gick (2009) are interested in the implications of these results for theories of speech production, and argue that voiceless vowels in Blackfoot represent articulatory speech targets. For the purposes of this paper what is relevant is that, for at least some nouns in Rachel's grammar, proximate *-(w)a* and obviative *-(y)i* are encoded articulatorily but not acoustically. Consequently, proximate and obviative morphology on these nouns is not recoverable from acoustic recordings alone. The observed discrepancy between Rachel's productions and Frantz' description of Blackfoot obviation morphology can be attributed to the fact that, even when not acoustically realized, proximate and obviative suffixes are articulatorily realized in Rachel's grammar.

5. Speaker #2: Beatrice

The second speaker whose productions are discussed is Beatrice Bullshields, a speaker of the Kainaa dialect who resides in Vancouver, BC. At the time of this study, she is sixty-six years old. Like Rachel, Beatrice is bilingual with English, but unlike Rachel, her daily exposure to her native language is limited.

The data for Beatrice's productions are founded on impressionistic observations and are verified by acoustic and video recordings. In this section, we demonstrate that, for Beatrice, word-final proximate and obviative suffixes are neither articulatorily nor acoustically realized on nouns or verbs, but they are nevertheless phonologically active.

5.1. No phonetic realization

Before turning to the phonological evidence for the obviation suffixes in Beatrice's grammar, we first discuss the fact that the suffixes are indeed phonetically unrealized. As with Rachel, there are no clear acoustic signals of proximate and obviative suffixes in Beatrice's grammar. Unlike with Rachel, however, there does not appear to be any articulatory evidence of the obviation suffixes in Beatrice's grammar either.

This impressionistic observation is confirmed with measures of lip aperture, similar to those taken by Bliss and Gick (2009) with Rachel. Two nasal-final nouns, *pokón* 'ball' and *si'kaan* 'blanket,' were recorded in both proximate and obviative contexts. Fourteen proximate and nine obviative forms were recorded, yielding twenty-three tokens in total.

Video recordings were taken using a JVC MiniDV Digital Video Camera (model no. 09671902), and still-frame images were extracted using Final Cut Pro. As in the Bliss and Gick (2009) study, the fourth frame (or 120 ms) following the last audible acoustic signal was extracted for each token. Lip aperture measures from the centre of the vermillion border of the upper lip to the centre of the vermillion border on the lower lip were taken using ImageJ.

The results are given in (3) (measures of length are given in pixels).³

(3) Lip aperture measures

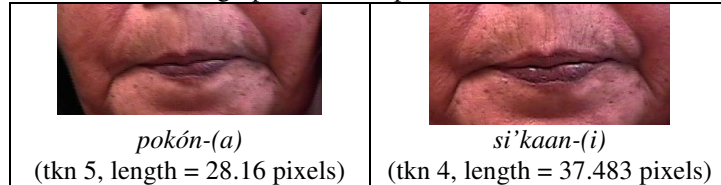
noun	obviation	token	length
<i>pokon</i>	a	1	66.483
<i>pokon</i>	a	2	32.062
<i>pokon</i>	a	3	68.118
<i>pokon</i>	a	4	74.007
<i>pokon</i>	a	5	28.16
<i>pokon</i>	a	6	63.071
<i>pokon</i>	a	7	63.127
<i>pokon</i>	a	8	58.215
<i>pokon</i>	a	avg	56.655
<i>si'kaan</i>	a	1	31.048
<i>si'kaan</i>	a	2	60.299
<i>si'kaan</i>	a	3	56.143
<i>si'kaan</i>	a	4	59.414
<i>si'kaan</i>	a	5	60.208
<i>si'kaan</i>	a	6	52.612
<i>si'kaan</i>	a	avg	53.287
<i>pokon</i>	i	1	70.257
<i>pokon</i>	i	2	66.068
<i>pokon</i>	i	3	37.483
<i>pokon</i>	i	avg	57.936
<i>si'kaan</i>	i	1	57.079
<i>si'kaan</i>	i	2	64.07
<i>si'kaan</i>	i	3	56.223
<i>si'kaan</i>	i	4	37.483
<i>si'kaan</i>	i	5	56.223
<i>si'kaan</i>	i	6	61.522
<i>si'kaan</i>	i	avg	55.433

The first thing to note is that we see a relatively small degree of variability in the average lengths for each noun in each context. However, looking at individual tokens, we see a relatively large degree of variability.

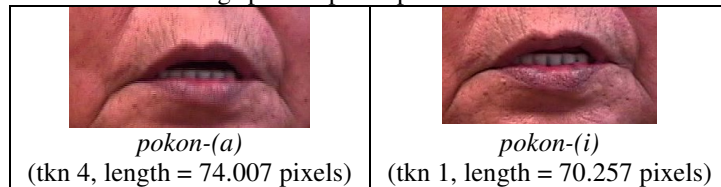
³ Statistical analysis of this data is not given, due to the small number of tokens. However, averages for each noun in each context (proximate or obviative) are included in the table in (3).

Whether a token is in the proximate or obviative context, at the point where we may expect to see evidence of a vowel, the lips are in some cases quite spread and in other cases quite closed. In fact, in both proximate and obviative contexts, there are some tokens for which there is complete closure of the lips, as shown in (4) below. For other tokens, however, the lips are spread, as in (5).

- (4) Still frames showing lip closure for proximate and obviative tokens



- (5) Still frames showing spread lips for proximate and obviative tokens



These findings contrast sharply with Bliss and Gick's (2009) observations for Rachel. At this same point in Rachel's productions, there is clear and consistent articulatory evidence of an *-a* vowel in proximate contexts and an *-i* vowel in obviative contexts. The fact that, for Beatrice, the lip aperture measures are quite variable, and the fact that for some tokens, there is full closure, suggests that there is no articulatory realization of a proximate *-a* or obviative *-i* in Beatrice's grammar.

Thus, obviation suffixes are phonetically unrealized in word-final position on nouns and verbs in Beatrice's grammar. In the following section, we turn to the phonological evidence for these suffixes being active in the grammar, despite their surface opacity.

5.2. Phonological realization

In this section we provide evidence that, although there is no phonetic manifestation of the proximate and obviative suffixes in Beatrice's grammar, the suffixes are indeed phonologically active. In particular, we demonstrate that at the surface-apparent right edge of the word, otherwise regular word-final phonological processes do not occur, but certain word-internal processes do, indicating the presence an unpronounced obviation suffix. Each of these processes is considered in turn below.

5.2.1. Word-final devoicing

Short vowels in Blackfoot undergo a regular process of devoicing when they are in word-final position. Word-final devoicing is an active phonological process in Beatrice’s grammar. However, as the paradigms in (6) and (7) show, third person proximate forms are not devoiced, as would be expected based on their surface forms. (The realization of these forms in Rachel’s grammar is given for comparison.)

(6)	<u>Rachel</u>	<u>Beatrice</u>	
	nitaʔpɔʔtakɨ	nitaʔpɔʔtakɨ	‘I worked’
	kitaʔpɔʔtakɨ	kitaʔpɔʔtakɨ	‘You worked’
	aʔpɔʔtaksiwə	aʔpɔʔtaki	‘S/he worked’
(7)	<u>Rachel</u>	<u>Beatrice</u>	
	nitertu:xʷtsimɨ	nitertu:xʷtsimɨ	‘I understand Blackfoot’
	kitertu:xʷtsimɨ	kitertu:xʷtsimɨ	‘You understand Blackfoot’
	ertu:xʷtsimiwə	ertu:xʷtsimi	‘She understands Blackfoot’

In (6) and (7), devoicing of the final vowel occurs for both speakers in the first and second person forms. The third person forms in Rachel’s grammar have the proximate suffix *-wa*. As expected, the final vowel of the stem (immediately preceding the suffix) is voiced, but the final vowel of the word is devoiced. The third person forms in Beatrice’s grammar do not have the *-wa* suffix, but just as in Rachel’s grammar, the final vowel of the stem is not devoiced, despite that, in its surface realization, it is word-final. In essence, the third person forms in Beatrice’s grammar behave phonologically as though the *-wa* suffix is active, even though it is not phonetically realized.

The fact that devoicing of the final short vowel of third person verb forms does not occur suggests that a proximate suffix is active, although it is not phonetically realized.

5.2.2. Word-final shortening

Just as short vowels devoice word-finally, long vowels shorten. Under the hypothesis that an unpronounced *-wa* suffix appears on third person verb forms, we predict that, for those third person verb forms that end in a long vowel, the vowel will not be shortened. To test this prediction, we carried out a small experiment, comparing the durational measures of first person and third person verb forms.

For the experiment, we recorded Beatrice producing four different verbs, inflected for first person and third person. Ten tokens of each verb were recorded, yielding eighty tokens in total. The verb forms are given in (8).

(8) Verb forms for durational measures experiment

1 st person	3 rd person	English
nitsims:ka	ims:ka:	'to save food'
nitsi:naka?s:ka	i:naka?s:ka:	'to buy a vehicle'
nitsi:?ns:ima	i:?ns:ima:	'to sow seeds'
nitsi:st:okima	i:st:okima:	'to drum'

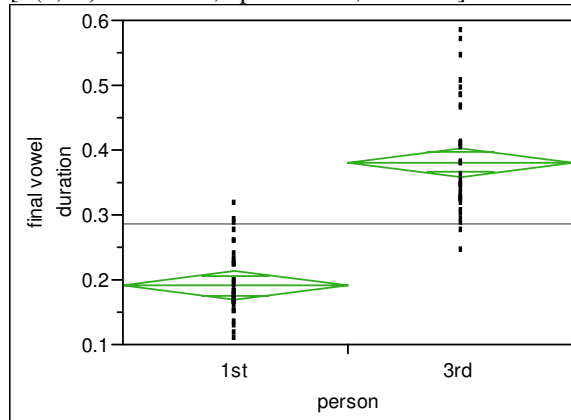
Recordings were taken with a Marantz solid-state recorder equipped with a lapel microphone, and were analysed in Praat. Duration of the final vowel was measured from consonantal release to end of visible formant structure, and a Mietta Praat script was used to extract duration for all tokens. The average duration of the final vowel for each form is given in the table in (9).

(9) Durational measures for the final long vowels

verb	1 st person	3 rd person
ims:ka:	0.205	0.495
i:naka?s:ka:	0.163	0.316
i:?ns:ima:	0.201	0.346
i:st:okima:	0.196	0.367

From (9), it is clear that, for each of the four verbs measured, the final vowel of the third person forms is considerably longer than that of the first person forms. A oneway ANOVA comparing first person with third person forms for all four verb forms shows that the difference is statistically significant, as shown in (10).

(10) Durational measures for 1st versus 3rd person forms of four verbs
 $[F(1,78) = 155.159, *p < 0.0001, \alpha = 0.05]$



These results suggest that long vowels are shortened as expected in first person forms, but not in third person forms. That the otherwise regular process of final vowel shortening does not occur with these forms suggests that the final

vowel is not indeed final, but is followed by a phonetically unrealized *-wa* suffix.

5.2.3. Word-final elision

There are two types of elision that interact with obviation suffixes. The first of these is referred to by Frantz and Russell (1995) as “*-yi* Loss,” and it entails verb stems ending in *-i’yi* [iʔji] losing the *-’yi* [ʔji] under certain as yet undetermined conditions. This loss is not explained in the grammar (Frantz 1991), but it is documented in the dictionary (Frantz and Russell 1995). As far as we can tell, stems ending in [iʔji] retain the [ʔji] when followed by a suffix. (It is yet unclear whether *-yi* loss occurs in other phonological contexts, as well.) Third person verb forms in Beatrice’s grammar retain the [ʔji], despite that no suffix appears in the surface form. Consider the following example.

(11)	<u>Rachel</u>	<u>Beatrice</u>	
	nitsist:ox ^w kox ^w pi	nitsist:ox ^w kox ^w pi	‘I fell down’
	kitsist:ox ^w kox ^w pi	kitsist:ox ^w kox ^w pi	‘You fell down’
	ist:ox ^w kox ^w piʔjiwə	ist:ox ^w kox ^w piʔji	‘S/he fell down’

In (11), [ʔji] is retained in the third person forms for both speakers. However, only Rachel has an overt *-wa* suffix. We take this as further evidence that the *-wa* suffix is phonologically active in Beatrice’s grammar even though it is not phonetically realized.

The second type of elision involves deletion of a final consonant (m, n, or s) of a stem word-finally or before certain suffixes. This type of elision is further subdivided by whether it occurs on verb stems or on noun stems (cf. Frantz 1991; Frantz and Russell 1995).

Regarding first verb stems, Frantz and Russell (1995) document a class of what they call as “3mm verbs”; that is, verbs that underlyingly end in *mm*, but lose the *mm* when no suffix follows the stem. In Beatrice’s grammar, the *mm* is elided in first and second person AI verb forms, where no suffix follows the stem, but is retained in third person AI verb forms, despite that no suffix is overtly realized. Consider the following paradigm for the AI verb *iko’po* ‘to be afraid’⁴ in (12) below.

(12)	nitéikoʔpə	‘I am afraid’
	kitéikoʔpə	‘You are afraid’
	an:a éikoʔpomm	‘She is afraid’

That the *mm* is retained on third person forms suggests, again, that an unpronounced proximate *-wa* suffix follows the stem.

⁴ Frantz and Russell (1995) list the verbal root as *iko’po*, but use the notation *3mm* to indicate that there is a non-permanent consonant on the right edge.

Turning now to elision on noun stems, many Blackfoot nouns have a final consonant that is present only before certain suffixes (“non-permanent consonants,” in the terminology of Frantz 1991). Examples are shown below, with the non-permanent consonant capitalized.

(13)	Stem	Gloss	Singular	Plural
a.	áto’ashiM	“sock”	áto’ahsima	áto’asiiksi
b.	pokóN	“ball”	pokóna	pokóiksi
c.	moksíS	“awl”	moksísa	moksíiksi

In (13), the non-permanent consonants surface on the singular forms, which are suffixed with the proximate marker *-wa*, but not the plural forms, suffixed with the animate plural marker *-iksi*.

Under the hypothesis that, in Beatrice’s grammar, animate singular nouns are suffixed with an unpronounced obviation suffix, we predict that the non-permanent consonants will be retained on singular nouns, even though there is no phonetic evidence of a suffix following the stem. Data confirming this hypothesis is given in (14) and (15), with comparative data from Rachel.

(14)	<u>Rachel</u>	<u>Beatrice</u>	
	oma ist:ouwanaḡ	oma ist:ouwan	‘that (prox) knife’
	omi ist:ouwanḡ	omi ist:ouwan	‘that (obv) knife’
	omiksi ist:ouweiksḡ	omiksi ist:ouweiksḡ	‘those knives’

(15)	<u>Rachel</u>	<u>Beatrice</u>	
	oma aʔpisaḡ	oma aʔpis	‘that (prox) rope’
	oma aʔpisḡ	omi aʔpis	‘that (obv) rope’
	omiksi aʔpi:ksḡ	omiksi aʔpi:ksḡ	‘those ropes’

In (14) and (15), the non-permanent consonants, /n/ and /s/, respectively, are retained in the singular but not the plural forms. The data from Rachel demonstrates that the presence of either a proximate *-wa* or obviative *-yi* suffix triggers retention of the non-permanent consonant. The fact that the consonant is retained in the singular forms Beatrice’s grammar as well as Rachel’s suggests that the suffixes are phonologically active on nouns in Beatrice’s grammar.

5.2.4. Assibilation

Blackfoot has a process of assibilation whereby [t] surfaces as [ts] before [i] (or [j]). This process is formalized in Frantz (1991) as follows:

$$(16) \quad t \rightarrow ts / ___i \quad (\text{Frantz 1991: 25})$$

The hypothesis that the obviation suffixes are active but unpronounced in Beatrice’s grammar yields a clear prediction about the interaction of assibilation and the obviative suffix *-yi*. Because the glide of *-yi* is elided

following a consonant-final stem, we predict that animate noun stems ending in *t* should undergo assibilation, even if no obviative suffix is overtly realized. This prediction is borne out, as shown in (17) and (18).⁵

(17)	<u>Rachel</u>	<u>Beatrice</u>
	niksis:tə	niksis:t
	n-iksisst-(w)a	n-iksisst
	‘my mother’	‘my mother’
	oksis:tsj	oksis:ts
	w-iksisst-(y)i	w-iksisst
	‘his mother’	‘his mother’
(18)	<u>Rachel</u>	<u>Beatrice</u>
	nins:tə	nins:t
	n-insst-(w)a	n-insst
	‘my older sister’	‘my older sister’
	ons:tsj	ons:ts
	w-insst-(y)i	w-insst
	‘his older sister’	‘his older sister’

In (17) and (18), we see that the final [t] of nouns possessed by a third person is assibilated for both Rachel and Beatrice. In Rachel’s grammar, assibilation is triggered by the presence of an overt obviative –*yi* suffix (with the glide elided). In Beatrice’s grammar, there is no overt suffix, but assibilation nevertheless occurs, indicating that the –*yi* suffix is phonologically active, although not phonetically realized.

5.2.5. Summary

Across a variety of phonological contexts in Beatrice’s grammar, there is evidence for the existence of unpronounced obviation suffixes, proximate –*wa* and obviative –*yi*, in the same morphosyntactic environments where Rachel employs the suffixes overtly. Otherwise regular word-final phonological processes, such as devoicing, shortening, and elision, are blocked from occurring at the surface-apparent word edge, and otherwise regular word-internal processes, such as assibilation and retention of non-permanent consonants, are triggered at the surface-apparent word edge. Together, these data suggest that, word-finally on nouns and verbs, –*wa* and –*yi* are phonologically active in Beatrice’s grammar, although phonetically unrealized.

⁵ In fact, according to Frantz and Russell (1995), aside from a derived form *ookoksisst* ‘stepmother,’ these are the only two animate nouns that end in [t] in the grammar.

6. Phonetically realized obviation suffixes

In this section, we consider two contexts in which proximate *-wa* and obviative *-yi* are phonetically realized in Beatrice's grammar, namely word-internally (preceding enclitics) and on demonstratives.

6.1. Enclitics

To this point, we have only considered *-wa* and *-yi* in word-final position. However, there are a small number of pronominal enclitics that can follow *-wa* or *-yi*. Most of these rarely (if ever) appear in elicitation contexts with Beatrice, but in her rendition of the Blackfoot Creation Story (Bullshields et al 2008), the third person singular pronominal enclitic *-ayi* is frequently used. Interestingly, when *-ayi* appears in the narrative, it is most often preceded by an overtly realized *-wa*. Consider the following examples:

(19) stamoχpoʔkiyu:ma:χkaowajj
stam-ohpoʔkiyoo-omaahkaa-**wa-ayi**
just-follow.AI-go.move.on.foot.AI-**PROX-PRO**
'And he just followed her' (Line 9)

(20) ... ki ma a:ki itox^wpokaʔpeis:imi**wajj**
...ki om-wa aakii it-ohpok-aʔp-a-ssim-yii-**wa-ayi**
...and DEM-PROX woman LOC-ACC-PRV-IMPF-sex-**DIR-PROX-PRO**
'... and the woman had sexual relations with him.' (Line 19)

The examples in (19) and (20) are two of eight sentences in the Creation Story that use the enclitic *-ayi*. Both of these, as well as three other sentences in the story, also have the proximate suffix *-wa*. The three remaining sentences with *-ayi* do not have *-wa*, but the morphosyntactic context is such that *-wa* is not expected to occur in these examples.⁶ Thus, in the Creation Story, wherever *-wa* is expected to occur word-internally, it does.⁷

6.2. Demonstratives

In §4 and §5, we observed that, on nouns and verbs, the proximate *-wa* and obviative *-yi* suffixes are subject to variation in their phonetic realization. They may be articulatorily but not acoustically realized (Rachel) or phonologically active but not phonetically realized (Beatrice). This same variation is not attested for the obviation suffixes on the demonstratives, which are not only phonetically realized for both Rachel and Beatrice, but also do not deviate word-finally. Consider again the example from (1), repeated as (21).

⁶ The three sentences without *-wa* are in the conjunct order, a specific type of embedded clause that does not mark obviation.

⁷ Because *-yi* and *-ayi* do not co-occur, it is not possible to extend this observation to the obviative *-yi* suffix.

- (21) An:á imitáuwə́ áʔps:kə́ji:wə́ an:f pú:sʃ
ann-wa imitaa-wa a'p-ssko-yii-wa ann-yi poos-yi
DEM-PROX dog-PROX around-chase-DIR-PROX DEM-OBV cat-OBV
‘The dog chased the cat’

In (21), we see that the *-wa* suffixes on the noun *imitaa* ‘dog’ and the verb *a'psskoyii* ‘chase around’ are devoiced, as is the *-yi* suffix on the noun *poos* ‘cat.’ However, these same suffixes on the demonstrative determiners are not devoiced.

Based on examples such as (21), it is tempting to re-write the devoicing rule to apply to phrases, rather than words. The obviation suffixes on demonstrative determiners are phrase-internal, and perhaps this can explain why they are not devoiced. However, demonstrative pronouns similarly do not devoice, as shown in (22) (from Beatrice).

- (22) Níns:t nitoχkók:ə́ an:f.
n-insst-(wa) nit-ohkot-ok-(wa) an-yi
1-sister-PROX 1-give.TA-INV-PROX DEM-OBV
‘My sister gave me this.’

In (22), the obviative suffix on the phrase-final demonstrative pronoun *ani* does not devoice. Thus, we cannot simply conclude that devoicing only occurs at phrase edges. Instead, we must account for why demonstratives are exceptional. Although further research is required to solve this puzzle, two possible explanations are proposed here.

The first hypothesis is morphosyntactic. Perhaps what appear to be demonstrative pronouns are in fact determiners that take a null nominal complement. Just as the unpronounced obviation suffixes on nouns and verbs in Beatrice’s grammar can interfere with regular phonological processes, perhaps an unpronounced nominal element following the demonstrative can similarly block devoicing. At this point, this hypothesis is merely a speculation, worthy of further consideration.

The second hypothesis is phonological. Perhaps devoicing requires a minimal prosodic constituent, and demonstratives do not meet this minimality requirement. Short words (of two syllables or less) are extremely rare in Blackfoot, given the polysynthetic nature of the language. Perhaps devoicing can only occur on words that have more than two syllables. Again, this hypothesis is speculative, but worth pursuing.

6.3. Summary

In this section we have demonstrated that proximate and obviative suffixes are phonetically realized (and fully voiced) word-internally and on demonstratives in Beatrice’s grammar. This observation provides further support for our claim that, word-finally on nouns and verbs, these same suffixes are

phonologically active but unpronounced. It is clear from the data with enclitics and demonstratives that obviation is an active component of Beatrice's grammar, even though the morphology is often absent from surface forms of content words.

7. Conclusions

In summary, we have discussed two speakers whose use of the obviation suffixes appears to differ from the description offered by Frantz (1991), and we have argued that the discrepancies between our data and Frantz' description reflect variation in the phonetic realization of obviation morphology, rather than a significant difference in the availability or distribution of proximate and obviative morphological categories.

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