

Aspects of Current Phonological Change in Snowdrift Chipewyan

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0. Introduction

Dramatic sound shifts are presently occurring in Snowdrift, North West Territories Chipewyan which may provide some clues to the nature of normal phonological change in language.¹ This paper deals with the complete shift of /t/ to /k/, the loss (or voicing) of /ʒ/, the loss of morphemes which contain /ɣ/, and the reanalysis of nasalized vowels into vowel plus nasal consonant, all of which are illustrations of the type of sound change that the linguist in the field rarely expects to witness.

Section 1 of the paper briefly describes the community of Snowdrift and the native speakers who provided the data presented here; Section 2 gives a brief account of Chipewyan phonology; Section 3 presents the data which substantiate the sound shifts in progress and I also discuss aspects of the phonological rule changes which account for the sound shifts (i.e. rule loss, rule addition, etc.); and Section 4 summarizes the paper with some consideration to the possible motivations for such rapid changes.

1. Snowdrift, N.W.T. -- The Community and the People

Snowdrift is primarily a native Chipewyan community with a population of 263 persons (R.C.M.P. figures for 1978). There are about fifteen non-Chipewyan residents in Snowdrift, mostly consisting of government employees (R.C.M.P., Department of Public Works, etc.). Virtually the entire community is fluent in both Chipewyan and English, with many children acquiring both languages in the home (i.e. not in the classroom).

Six Chipewyan speakers provided the material which is presented here -- two older native Chipewyans who were not fluent in English, and four younger speakers (15 to 30 years of age) who, although Chipewyan was their first language, exhibited some vocabulary deficiencies as the data below will show.²

Data from all four younger speakers will be presented, some of which provides support for the varying conclusions that are presented in the final section of the paper. The young speakers were S.M., a 15 year-old male; B.A., a 19 year-old female; F.M., a 23 year-old male; and F.C., a 30 year-old male. They had finished Grade 8, Grade 10, Grade 8, and Grade 7 in school, respectively. All four were born in Snowdrift.

One of the older speakers was born in Snowdrift (a 64 year-old male -- no education). The other was born in Fort Smith, N.W.T., but he moved to Snowdrift when he was very young (a 67 year-old male -- no education). Both men were quite familiar with the Chipewyan syllabary (which was adopted from the Cree syllabary) and had "taught themselves to speak English." (The latter is a claim which the two men iterated, but which cannot be explicated nor substantiated due to lack of information.)

In the next section of the paper, I discuss elementary aspects of Chipewyan phonology. In the following section of the paper I present the data which illustrate the changing phonemic system and the abstract rule

changes which may account for the changes. The data from the older speakers are collapsed and appear as though they were elicited from only one person.³ The data from the younger speakers are represented separately with each form (or list of forms) and are identified by the initials of that person (see above).

2. Snowdrift Chipewyan Phonology -- A Brief Account

There are six vocalic and thirty-five consonantal phonemes in Chipewyan. Five of the vowels may surface as nasalized vowels (only /ə/ does not). These may be analyzed as Vn underlyingly, however. Tone is distinctive in the language, although it seems to be giving way to generalized rules of stress assignment.⁴ There are only two tones in Chipewyan -- high and low. The minimal pair íú 'whitefish'; íu 'fish' establishes the distinctiveness of tone in Chipewyan.

The six vocalic phonemes follow:

i u
e ə o
a

Tabled below are the thirty-five consonantal phonemes.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
(1)	b		d				g	
(2)		dð		dl	dz	dž		
(3)			t				k	
(4)		tθ		tɬ	ts	tš		
(5)			t'				k'	?
(6)		tθ'		tɬ'	ts'	tš'		
(7)		θ		ɬ	s	š	x	h
(8)	m	ð	n	l	z		ɣ	
	w		r			y		

where (1) Plain stops, (2) Plain affricates, (3) Aspirated stops, (4) Aspirated affricates, (5) Glottalized stops, (6) Glottalized affricates (7) Voiceless continuants, and (8) Voiced continuants; and where (a) Bilabial, (b) Dental, (c) Alveolar, (d) Lateral, (e) Alveolar affricates, (f) Palatal, (g) Velar, and (h) Glottal.

The status of the phonemes /m/, /w/, and /r/ requires some comment. /m/ appears distinctively in very few forms: má 'stinking, dirty'; mítsaye > mutsa 'owl.' Otherwise, [m] usually appears as a homorganic nasal preceding the bilabial stop, e.g. tsába > tsamba 'money'; dechenbes > chenbes > chambes 'wood saw.'⁵ /w/ must be considered phonemic due to the discovery of a minimal pair: dúwé 'very' (intensifier); ne-dúyé 'small, short.' Otherwise, [w] and [ɣ] neutralize on the lowest level, particularly when associated with rounded vowels. /r/ appears word-initially in a few forms, e.g. radzi < horadzi 'spider'; ratθen < horatθen

'grasshopper.' Normally, /d/ surfaces as [ɾ] ([ʃ̥]) intervocalically and as the trill [ʀ] word-finally. /r/ is clearly phonemicizing, however, as the two examples above indicate. Another form which suggests that /r/ is becoming phonemic is the following example elicited from a thirty-year-old male speaker: narzus 'split (in half); it's split' (probably from underlying /na-de-zuz/).

The remainder of the consonantal inventory requires little discussion. The plain stops are voiceless and unaspirated in older speakers. Young speakers tend to treat them as voiced segments, presumably patterning the sounds to English. The continuants are definitely opposed along the voicing continuum. /š/ and /y/ alternate in certain environments (see Cook 1977:265ff. for an account of this phenomenon in Central Carrier and Chilcotin which is very similar to the Chipewyan alternation; see also Jehn (in preparation)); thus the inclusion of /y/ as a voiced continuant under /š/ in the chart.

To return to the vocalic phonemes, a brief discussion of the status of /o/ is in order. In older speakers, [o] clearly surfaces when the underlying sequence of segments is /au/. That is, /au/ --> [o]; /au/ --> [ɔ̃]; etc. It appears that [o] must have another source, however, considering that some forms always contain phonetic [o] and cannot be pronounced as [au], e.g. nezɔ̃ '(it is) good'; tšɔ̃ 'big.' The source for this [o] will be taken to be phonemic /o/, since it is opposed to both /u/ and /a/ in several forms, e.g. -yú 'teeth', -yol 'throat'; tš'ul 'rope', tš'o(ɣ) 'grass'; -tθo(ɣ) 'be yellow', tθ'ai 'moss'; gane 'pine', gone 'killdeer', -gáne 'arm.'

Schwa often behaves as though it were simply a reduced allophone of a full vowel (usually of /a/, /u/, or /o/), but nevertheless must be considered phonemic due to the following sub-minimal pairs: ʔé1 'dam', ʔəl 'spruce bough'; k'əðe 'side', ne-k'aθ 'it is cold.' Schwa appears neither word-finally nor as a nasalized segment.

This concludes the required preliminary discussion of the Chipewyan phonemic system. The next section of the paper presents the data which substantiate the phonological changes that are occurring in Snowdrift Chipewyan.

3. Sound Shifts in Snowdrift Chipewyan

I separate this section of the paper into several subsections in order to clarify the various sound changes which are occurring in Snowdrift Chipewyan. Specifically, in the order of their discussion, I present 3.1 /t/ --> /k/, 3.2 /ɬ/ --> /h/; /ɬ/ --> ∅; /ɬ/ --> /l/, 3.3 /-ɣe/ --> ∅, and 3.4 /ʎ/ --> /ʎn/.

3.1 /t/ --> /k/

The shift of the voiceless aspirated stop to a velar place of articulation is now complete in all speakers of Snowdrift Chipewyan who are under thirty years of age. Consider the following data:

	<u>Older Speakers</u>	<u>S.M.</u>	<u>B.A.</u>	<u>F.M.</u>	<u>F.C.</u>
(1)	tu 'water'	ku	ku	ku	ku
(2)	tən 'ice'	kən	kən	kən	kən
(3)	taye 'three'	ka	ka	ka	ka
(4)	tatše 'Reliance, N.W.T.'	katše	katše	katše	hatše ⁶

This shift is complete in all environments.

As Haas (1968:166) points out, the /t/ > /k/ shift makes little sense unless it is viewed in the light of the phonetic form of underlying /t/. That is, to maintain maximal distinctiveness between (phonetically) [t^h], [t], and [t'] (phonemically /t/, /d/, and /t'/, respectively), the older speakers of the language produce [t^h] with a noticeable amount of velar friction. Considering concurrently the fact that very little semantic confusion would result from such a sound shift (i.e. few minimal pairs involving /t/ and /k/), to suggest the following natural progression is plausible:

(5) [t^h] [t^x] [k^h]
/t/ > /k/

3.2 $\dot{\text{t}}$ --> /h/; $\dot{\text{t}}$ --> Ø; $\dot{\text{t}}$ --> /l/

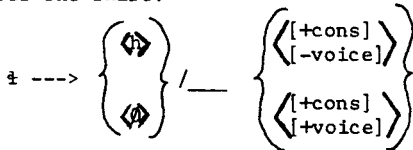
I will argue here that the changes which are presently occurring with the phoneme / $\dot{\text{t}}$ / in Snowdrift Chipewyan may be considered as basically one broad phonological shift with two aspects to the shift, i.e. pre-consonantal $\dot{\text{t}}$ -deletion and word-final $\dot{\text{t}}$ -voicing. Although grammatical information (specifically morphological) is pertinent, I will demonstrate below that it is not necessary to utilize it in explaining the $\dot{\text{t}}$ -shifts. The current phenomena concerning / $\dot{\text{t}}$ / are not static, but are rather in a state of variability, as is shown by the following data:

	<u>Older Speakers</u>	<u>S.M.</u>	<u>B.A.</u>	<u>F.M.</u>	<u>F.C.</u>
(6)	ya $\dot{\text{t}}$ ti 'he speaks'	yahki	yahki	----	hati/yaki
(7)	e $\dot{\text{t}}$ gəne 'dry meat'	egəne	egəne	egəne	ehgəne
(8)	m $\dot{\text{t}}$ itsaye 'owl'	mutsa	mutsa	mutsa	mutsa
(9)	nago $\dot{\text{t}}$ ei $\dot{\text{t}}$ 'i 'lightning'	----	----	nago $\dot{\text{t}}$ ei $\dot{\text{t}}$ 'i	----
(10)	ni $\dot{\text{t}}$ ts'i 'wind'	nihtsi	nihts'i	nihtsi	----
(11)	ye $\dot{\text{t}}$ kā 'dawn'	----	----	yehkā	----

	<u>Older Speakers</u>	<u>S.M.</u>	<u>B.A.</u>	<u>F.M.</u>	<u>F.C.</u>
(12)	yíɬtšú 'he took it'	----	yíh(θ)tšú	yíhtšú	----
(13)	náɬní 'you pay'	----	naiɬni(e)	naihni	----
(14)	ʔeɬdzas 'trap'	edzes	ʔehdzas	ʔedzas	ʔehdzəs

In general, the shift seems to be /ɬ/ preceding a consonant becomes /h/, but /ɬ/ variably becomes \emptyset in this environment.⁷ I reserve discussion of the phenomena which are occurring with the vowels, e.g. ɨ --> u,⁸ but will concentrate rather on the shift in /ɬ/ before a consonant. I note that /ɬ/ under discussion here happens to be the ɬ-classifier, but given the fact that this is the only /ɬ/ which occurs preceding a consonant, then the morphemic identity of ɬ-classifier may remain unspecified. That is, /ɬ/-shift is simply a phonologically conditioned change.

It would appear that the feature [voice] plays some part in the variable shift of /ɬ/ --> /h/. Recalling that young speakers tend to produce voiced segments for the voiceless plain stops, it would seem that the ɬ-classifier becomes /h/ more often preceding voiceless segments and is deleted more often preceding voiced segments. Adopting the notation which was introduced by Labov (1969, 1972), the following rule roughly describes the shift:



Word-final /ɬ/ behaves somewhat differently than pre-consonantal /ɬ/. The data are limited, however, and the discussion here should be treated as inconclusive.

	<u>Older Speakers</u>	<u>S.M.</u>	<u>B.A.</u>	<u>F.M.</u>	<u>F.C.</u>
(15)	tθɛɬ 'axe'	tθen	tθen	tθen	tθen
(16)	tabíɬ '(fish) net'	kabín	kabin	kabin	kabín
(17)	hatsáɬ 'nail'	etsél	----	hats'ál	tsále

In examples (15) and (16), the word-final /ɬ/ follows a nasalized vowel and becomes \emptyset .⁹ In example (17), on the other hand, word-final /ɬ/ becomes /l/. The only clear difference lies with the preceding vowel, i.e. word-final /ɬ/-deletion is conditioned by a preceding nasalized vowel while word-final /ɬ/-voicing is conditioned by a preceding oral vowel. It should be noted that final ɬ-voicing is more extensive (Cook, personal communication).

Hence we see that word-medial /ɬ/ is in the process of disappearing

with the intermediate shift to /h/ occurring at first in many speakers. Word-final /ɨ/, on the other hand, is in the process of becoming voiced in general, with only a few specific environments conditioning deletion. I discuss the explanations for ɨ-shift in Section 4, as well as discussing the reanalysis of nasalized vowels, both of which seem to fall under a more general process of simplification of the syllabic structure in Snowdrift Chipewyan.

3.3. -ye ----> Ø / ___ ##

Younger speakers of Snowdrift Chipewyan almost invariably delete the affix /-ye/ word-finally. The real question here is whether this is deletion at a morphological level or whether it is simply a phonological process (i.e. apocope). Rules (18) and (19) show the statement of the process at the phonological level:

(18) /e/ ----> Ø / ___ ##

(19) /ɣ/ ----> Ø / ___ ##

where (19) is actually a redundant statement of a rule which exists independently of the phenomenon under discussion here; that is, /ɣ/ never surfaces word-finally in Snowdrift Chipewyan.

Consider the data in (20) through (27) below:

	<u>Older Speakers</u>	<u>S.M.</u>	<u>B.A.</u>	<u>F.M.</u>	<u>F.C.</u>
(20)	taye 'three'	ka	ka	ka	ka
(21)	tabaye 'shore'	kubə	----	kabə	kabə
(22)	ɨaye 'one'	----	----	ɨa	ɨa
(23)	mɨtsaye 'owl'	mutsa	mutsa	mutsa	mutsa
(24)	eyaye 'marrow'	eka	----	eya	----
(25)	?edlɨɨ 'who?'	dlə	dlə(e)	dlə	----
(26)	?edlaye 'what?'	dla	dla(e)	dla	----
(27)	-edzaye 'ear'	-edzə	-edza	-edza	----

It can be seen from these examples that it is not simply a case of vowel apocope where only the final /e/ is deleted. If this were the case, we might expect to find some evidence that /ɣ/ is in final position underlyingly. There is an independently motivated phonological rule in Chipewyan which devoices word-final fricatives yielding alternations such as nagiθ ~ nagiðe 'red fox'; dʒis ~ dʒize 'gloves.' The only two segments

which are clearly involved in this devoicing rule are /ð/ and /z/. In Jehn (in preparation), a more substantial statement concerning the status of word-final /ɣ/ (and /y/) is presented with persuasive evidence that shows that /ɣ/ no longer obeys this particular devoicing rule in Snowdrift Chipewyan.¹⁰

Nevertheless, it seems safe to assume the broader phonological process suggested earlier. That is, the elision of word-final /e/ automatically results in the deletion of the impossible word-final segment /ɣ/, i.e. there is a feeding relationship between the two rules ((18) and (19)). To make statements of morphological information is unnecessary in this instance, particularly since /-ɣe/ seems to be a redundant morphemic particle.

3.4. $\bar{V} \rightarrow Vn$

As a preliminary remark to this section of the paper, the reanalysis of nasalized vowels into vowel plus nasal consonant is a dynamic phenomenon which exhibits a considerable amount of variation between speakers. Therefore, the discussion here should be viewed in this light and it should not be taken as a conclusive statement.

Examples (28) through (35) illustrate the process under consideration here:¹¹

	<u>Older Speakers</u>	<u>S.M.</u>	<u>B.A.</u>	<u>F.M.</u>	<u>F.C.</u>
(28)	tθɛ̃t 'axe'	tθen	tθen	tθen	tθen
(29)	tabĩt '(fish)net'	kabín	kabin	kabin	kabín
(30)	ɪyeze 'bird'	inyes	inyes	inyes	----
(31)	ts̩aba 'money'	tsamba	samba	samba	samba
(32)	wĩgəl 'Go away!' (2sg)	wĩgəl	wĩgəl	wĩgəl	----
(33)	datš̩ɔ̃ 'dish cloth'	datš̩á	----	dašón	detš̩ɔ̃
(34)	ɪ̃yaze 'puppy'	ɪ̃yaze	ɪ̃yeze	----	ɪ̃yaze
(35)	ɪ̃aʉt̩ɔ̃ 'nine'	ɪ̃úka	ɪ̃uka	ɪ̃uka	ɪ̃ɔka

Examples (28) and (29) are the clearest cases of the \bar{V} -reanalysis. In both instances, a preceding nasalized vowel (and the reanalysis of the \bar{V} into Vn) allows \bar{i} -deletion to take place. It should be noted that the reanalysis of \bar{V} must precede the deletion of / \bar{i} /, but that the reanalysis takes place only when there is a "deletable" consonant word-finally (see examples (33) and (35)). The following pair of rules describe the phenomenon:

$$\begin{aligned} \text{V} &\text{ ---> Vn / } \underline{\quad} \text{ \# \#} \\ \text{\#} &\text{ ---> } \emptyset / \text{C } \underline{\quad} \text{ \# \#} \end{aligned}$$

Examples (30) and (34) provide another interesting case of the nasalized vowel phenomenon. In example (30), the reanalysis does take place preceding the segment /y/, while in (34) this does not occur. An explanation does present itself immediately, however. In (30), the form is a single morpheme, while in (34) two morphemes are involved; i.e. ɛi 'dog' + -aze 'small' ---> ɛiyaze. Thus, the rule may be restricted in such a way as to exclude the form *ɛin(y)aze.

Examples (31) and (32) illustrate instances of homorganic nasal assimilation (as does example (30)), but precisely what motivates the initial reanalysis of the nasalized vowel is again uncertain.

This section of the paper serves only to make note of this peculiar (and unexpected) phenomenon and I will leave the discussion as it stands. It is hoped that further exploration of this phonological process can lead to a more conclusive statement than I have been able to make here.

4. Motivations for Rapid Sound Change

The data which have been presented here result in no extreme problems to current phonological theory. There are some sound shifts occurring in Snowdrift Chipewyan, however, which do require closer scrutiny. In particular, I refer to the interesting differences associated with the shifts of the phoneme /ɛ/¹² and the reanalysis of nasalized vowels (V) into vowel plus nasal consonant (Vn).

Insofar as the /t/ > /k/ shift is concerned, the previous discussion may stand. I only reiterate the necessity of allowing phonetic factors into the explanation behind the shift. The elipsis of word-final /e/ with the subsequent automatic deletion of /y/ also requires little discussion.

I would suggest that the shift of /ɛ/ is dependent, at least in part, upon considerations of Chipewyan syllable structure. Thus we see an underlying CVC structure shifting to a CVN structure. Likewise in the shift of pre-consonantal /ɛ/ to /h/ (and presumably to \emptyset later), we see underlying CVC remain CVC, although the tendency to simplify to CV is apparent. The large majority of word-final syllables are CVC, i.e. most stems in Chipewyan are underlyingly structured in this manner.¹³ The large majority of non-final syllables (i.e. prefixes) are structured CV, however, and perhaps with this information the tendency for pre-consonantal /ɛ/ to disappear completely becomes explainable.

Finally, I would include the influence which the English language has had on young speakers in Snowdrift as a not inconsequential factor. All young people attend public school where only English is taught at present. The fact that English has no nasalized vowels may certainly be affecting young speakers to produce forms such as inyes 'bird' or tsamba (samba) 'money', rather than the older forms iyeze or tsaba. The question must remain open at this time, but perhaps further field study in Snowdrift will clarify the phenomena which I have presented in this paper.

Footnotes

¹Morphological change is also clearly taking place, but these shifts will be discussed only peripherally here. See Henry (1979) for a more complete treatment of morpheme deletion in Snowdrift Chipewyan.

²Some factors are ignored here which may be significant. I resume discussion of these in Section 4.

³I defend this procedure on the grounds that the forms given by the two older men were identical on the order of 95% of the time.

⁴I mention this only as an unsubstantiated preliminary observation of young persons' speech. Considerably more research would be required to establish this claim.

⁵The actual assimilation to place of articulation is not as clear-cut as is suggested here, i.e. there are counterexamples: hebel 'he is swimming,' but hibel 'you (sg) are swimming.' In this latter case, the form *himbel is not possible. This may be due to the boundary preceding the verb stem -bel, however (see Stanley 1973).

⁶The form hatše cannot be easily explained and I reserve discussion of it for this reason. It may be presumed to be idiosyncratic in this speaker. Other idiosyncratic forms appear in the data, as well as some forms that are clearly mistaken. Some of these will be discussed and others will be arbitrarily ignored.

⁷This sound shift could possibly be interpreted as V&C > V:C, but it should be noted that there is audible breath in most cases. Additionally, /h/ already exists in the phonemic inventory, whereas length is non-distinctive.

⁸The backing of /i/ becomes even more difficult to understand when the following form is considered:

<u>Older Speakers</u>	<u>Younger Speakers</u>
(i) talγus 'shore bird'	kalwis

There is no adequate account of these phenomena available at present.

⁹Following the reanalysis of V into Vn (see Section 3.5).

¹⁰Cook informs me that [γ] and [x] do alternate word-finally in the Fort Smith Chipewyan dialect.

¹¹I exclude several examples which tend to obscure the data. I defend the practice here for two reasons: (i) the data can be very different between speakers, and (ii) this discussion is meant to be only a preliminary account of the phenomenon.

¹²This statement may be more correctly presented as the voicing of the phoneme /ʔ/ in word-final position and the shift of pre-consonantal /ʔ/ to /h/. I did not discuss other positions involving /ʔ/-shift because there seem to be none. In particular, the form uʔini 'only' comes to mind with the resulting young peoples' responses: eyuʔi (F.M.) and iʔi (B.A.) in which /ʔ/ does not shift. I ignore the other unexplainable changes for obvious reasons.

¹³I include stems that surface as CV̄ in the set of stems that are underlyingly CVC, i.e. they are actually CVn in the underlying representation.

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