

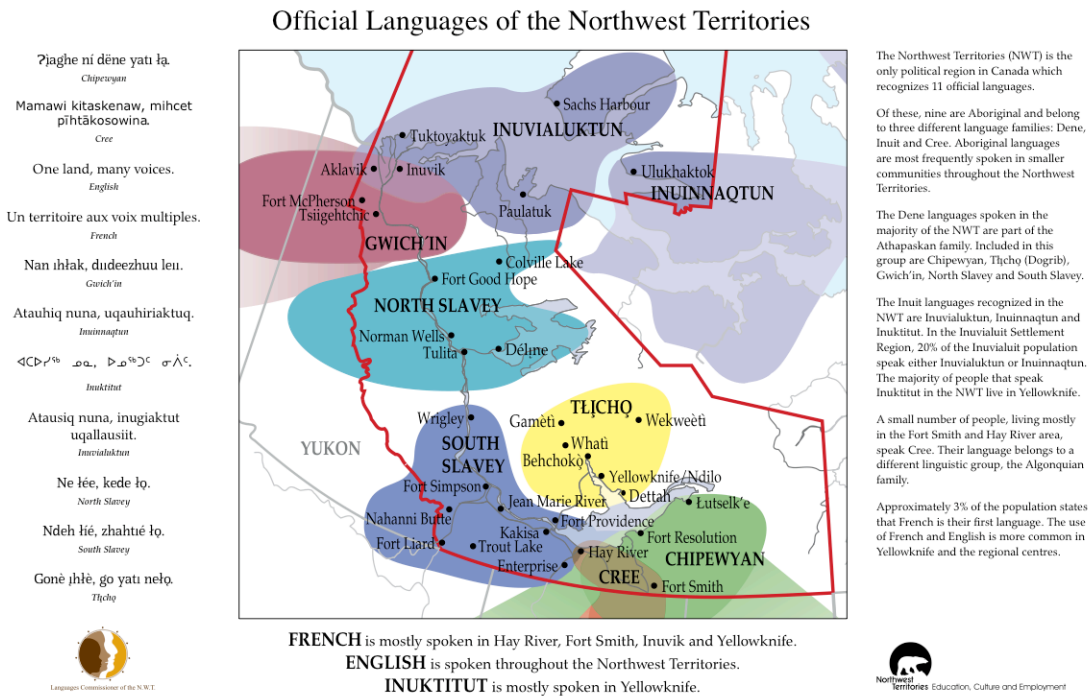
Where does *r* come from and what does it tell us about Fort Good Hope Dene morphology?

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In the past 150 years, the Fort Good Hope dialect of Dene (Slavey) has undergone several phonological shifts. I focus on the change of nasals to *r*, addressing two issues arise. First, not all nasals shift to *r* in the appropriate environment, and it appears that the factors that determine what shifts are largely non-linguistic, involving frequency. Second, and of interest in terms of the phonology of endangered languages, sometime during the period in which the exposure to and use of English greatly increased, processes have been introduced that strengthen the evidence for a strong word-internal boundary. Athabaskan languages are often thought to demonstrate ongoing polysynthesis, with morphemes becoming more closely bound within the word. In as much as the recently introduced /r/ is involved in strengthening this boundary, it is interesting that greater morphological transparency of this part of the word has evolved rather than the increased morphological opacity that might be expected.

I. Introduction

1. What can we learn about phonology from endangered languages?
 Athabaskan (Athapaskan/Athabaskan)
 Mackenzie Valley
 North Slavey/Dene
 Fort Good Hope Dene (FGH)



2. Observation

A distinguishing characteristic of Fort Good Hope Dene: the use of *r*

Fort Good Hope	Déline	
rake	náke	'two'
ráyuka	náoka	'Northern lights'
reshe	neshe	'potato'
rírehła	nínehła	'I arrived'
ruhshe	nuhshe	'I want to grow' (optative)

3. Questions

- a. Where does *r* in FGH Dene come from?
- b. What is the synchronic status of *r* in FGH Dene?
- c. What does the phonology of *r* in FGH Dene tell us about phonological evidence for polysynthesis?

4. Some answers

- a. *r* in FGH Dene comes from Proto-Athabaskan nasals (while [r] in other dialects is an allophone of *d* /*t*/).
- b. Reanalysis has occurred, with both /*n*/ and /*r*/ present.
- c. Restructuring provides additional evidence for a strong word-internal boundary, 'undoing' a cross-boundary effect found in more conservative speech.

5. Organization

- a. Where does /*r*/ come from?
- b. Synchronic patterning
- c. Why didn't all nasals shift?
- d. Morphological consequences

II. Where does /*r*/ come from?

6. Proto-Athabaskan nasals (all reconstructions from Leer 1996)

(*m) *n *nʸ/ŋ

7. Beginning with an aside: stems

- a. Non-nasal environment: Merging of **n* and **ŋ* to *d*

Proto-Athabaskan	Fort Good Hope	Déline	
*-naʷGə 'eye'	-dá	-dá	'eye'
*-niʷgʷ 'move hand'	-dí	-dí	'move hand'
*ŋaʷ 'several die'	-de	-de	'several die'
*ŋəl 'spill, pour'	-di	-di	'spill, pour'

b. Nasal environment: Merging of *n and *ŋ to n

Proto-Athabaskan	Fort Good Hope	Déline	
*ne'n' 'face'	-ní	-ní	'face'
*ŋe'n' 'moss'	ní	ní	'moss'
*ŋən' 'earth, land, ground'	né, -néné	né, -néné	'land'
*ŋa'ŋ 'ten'	-nə	-nə	'ten'

c. Nasals strengthen to oral stops in stem-initial position, non-nasal environment.

8. Prefix-initial position 1: shifting nasals

To the heart of the matter

a. Proto-Athabaskan *n generally develops as n in Déline and as r in Fort Good Hope in the non-nasal environment.

Proto-Athabaskan	Fort Good Hope	Déline	
*nax(ə)- '1, 2 pl. object'	raxε-	naxε-	1, 2 pl. object
*nə- gender, assume position	rε-	nε-	qualifier
*na'- 'down, to ground; continuative'	rá-	ná-	'down, to ground; continuative'
*na- 'back, again, iterative'	ra-	na-	'back, again, iterative'

b. *n develops as n in the nasal environment

*nə+n gender, assume position	nı-	nı-	qualifier
*na'- + na- continuative+ iterative	nə- (~rára)	nə-	continuative+iterative

9. Prefix-initial position 2: invariant nasals

a. Proto-Athabaskan *ŋ generally develops as n in Fort Good Hope and Déline in the non-nasal and the nasal environment both.

Proto-Athabaskan	Fort Good Hope	Déline	
*ŋə- stative perfective	nε-	nε-	perfective
*ŋə- 2sg subject, object	nε-	nε-	2 sg subject, object

b. Some Proto-Athabaskan *n develop as n.

*na-	k'ína-	k'ína-	'around'
?	ne-	ne-	'across'

10. Prefixes, syllable-final position

Nasals develop as nasalization on the preceding vowel syllable-finally. The stative/perfective, the 2sg. subject, and some of the variable nasals have syllable-final forms, and are realized as nasalization.

11. Summary

Position	Fort Good Hope		Déljine	
	Nasal environment	Non-nasal environment	Nasal environment	Non-nasal environment
Stem-initial	n	d	n	d
Prefix-initial type 1: invariant n	n	n	n	n
Prefix-initial type 2a: variant r	n	r	n	n
Prefix-initial type 2b: invariant r	--	r	n	n

Note: invariant /r/ never occurs in the nasal environment.

III. Synchronic prefix patterning

12. A possible synchronic analysis

- a. /n/ invariant [n]
- b. /r/ [n] in the nasal environment and syllable-finally
- c. Diachronic change: Restructuring of prefixes from /n/ to /r/

13. Invariant nasal prefixes (/n/)

a. The second person singular has two allomorphs, *nɛ-* and nasalization.

<i>nɛ-</i>		nasalization	
nɛ -jɛ	'you sg. sing'	dj-jɛ	'you sg. start to sing'
nɛ -t'é	'you sg. cook'	dj-t'é	'you sg. cook for yourself'
wɛ- nɛ -da	'you sg. sit'	wɔ-dá	'you sg. optative sit'
k'ína- nɛ -tɛ	'you sg. go around'	keyíyɪ-tɛ	'you sg. are going up'
nɛ -tá	'your sg. father'		
nɛ -hé	'with you sg.'		
rá- nɛ -reyiht'u	'I hit you sg.'		

b. The perfective/stative has two forms, *nɛ-* and nasalization.

<i>nɛ-</i>		nasalization	
nɛ -zɔ	'it is good'	hɪ-báɛ	'it is rounded, scalloped'
		gɔ-séɛ	'it (land, river) is small'

The *nɛ-* allomorph is very rare in Fort Good Hope; it is very common in Déljine.

c. The morpheme *na-* in *k'ína-* 'around' and *ne-* 'across' do not show allomorphy.

(*na-* is occasionally realized as *nɔ-*, but this does not appear to be common.)

14. Variant prefixes: n~r alternations (/r/)
- Déline Fort Good Hope
- n- achievement situation aspect***
- oral environment: r*
- a. tɛ-**n**i-ya tɛ-**r**i-ya 'I went into water'
- oral environment: r*
- tɛ-**nɛ**-nɛ-ya tɛ-**rɛ**-nɛ-ya 'you sg. went into water'
- nasal environment: n*
- tɛ-**n̩**i-ya tɛ-**n̩**i-ya 's/he went into water'
- oral environment: r*
- b. nídlodé-**nɛ**-h-tʌa rídlodé-**rɛ**-h-tʌa 'I arrived laughing'
- nasal environment: n*
- nídlodé-**nɛ̩**-tʌa rídlodé-**nɛ̩**-tʌa 'you sg. arrived laughing'
- syllable-final environment: nasalization*
- nídlo-d-ɛ̩-tʌa rídlo-d-ɛ̩-tʌa 's/he arrived laughing'
- n- 'qualifier' ('conjunct' prefix)***
- oral environment: r*
- c. **nɛ**-h-she **rɛ**-h-she 'I grow'
- nasal-environment: n*
- n̩**i-ye **n̩**i-ye 'you sg. grow'
- oral environment: r*
- nɛ**-ye **rɛ**-ye 's/he grows'
- ní- 'terminative, to the ground' ('disjunct' prefix)***
- oral environment: r*
- d. **ní**-nɛ-h-tʌa **rí**-rɛ-h-tʌa 'I arrive'
- ní**-n̩-tʌa **rí**-n̩-tʌa 'you sg. arrive'
- nasal environment: n*
- n̩**i-tʌa **n̩**i-tʌa 's/he arrives'
- varies with oral environment: r*
- rí**-hɛ-tʌa 's/he arrives'
15. Invariant prefixes: class 3 prefixes (/r/)
- a. The nasalized environment is never present.
- Déline naxɛ- Fort Good Hope raxɛ-'1/2 pl. non-subject'
16. Synchronic analysis (morpheme-initial consonants)
- /n/: invariant [n]
- /r/: [n] in nasal environment; [r] in non-nasal environment

IV. An historical excursus: timing of the shift

17. Timing of the shift – historical developments ~1876 - ~1920

1876: Petitot (dictionary); 1920's: Fang-Kuei Li (word list)

Petitot 1876		1920's/current	
'klo yanêchié	'cultiver'	tl'o rəhshe	'I grow grass'
na-déinlin	'chute'	ráɛyɪli	'waterfall'
natsézé	'chasse'	rats'ezé	'hunt'
naêta	'cheminer'	ráyɛhda	'I walk along'
nonta	'cheminer, 3 ^e pers'	nɔda ~ráyɛda	's/he walks along'
nâ-nél'u	'coudre'	rá'ɛrɛhlu	'I sew'
nâtl'a	'courir'	ráhɫa	'I go (fast)'
ne	'tu'	nɛ-	'you sg.'

18. A new question: restructuring and invariant nasals

Why do *n*'s remain? Why didn't all *n*'s at Petitot's time become *r*'s?

19. A(n) (im)possible (?) historical account of prefix development: *n vs. *ŋ?

a. Possible development

*n > n~r

*ŋ > n

b. Stem-initial *n and *ŋ merge. Prefix-initial *n generally develops as *n/r* and *ŋ as *n*, but there are *n that are realized as invariant *n*, suggesting that an account of variant vs. invariant *n* is not based on their historical source.

c. No evidence exists that these nasals were differentiated at the time of Petitot.

d. Conclusion: The nasals had likely merged by the time of Petitot's dictionary.

V. Other diachronic changes: restructuring and invariant nasals

20. Invariant *n*'s 1: perfective/stative restructuring of the paradigm

Overall loss of the syllable-initial environment for the perfective/stative

Déline	Fort Good Hope		Petitot
nɛ-chá / nɛh-chá	hɪ-shá / hɛh-shá	'it is big' / 'I am big'	intcha
nɛ-tséle / nɛh-tséle	hɪ-séle / hɛh-séle	'it is small' / 'I am small'	intsélé
nɛ-ká	hɪ-ká	'it is wide'	
nɛ-ghale	hɪ-ghale	'it is narrow'	inkwalé
	hɪjɔɛ	's/he is short'	
	hɪbáɛ	'it is rounded'	
	hɪkónɛ	'it is bright, shiny'	
	hɪt'ale	'it is flat'	inttálé
	hɪhxɔ	'be no good, moldy'	inɣun
	hɪgule	'be narrow and round'	
	hɪç'ile	'be sharp-pointed'	

27. Review: patterning of variable nasals
- a. Type 1: achievement, iterative
n- in syllable-initial position in nasal environment
nasalization in syllable-final position
r- otherwise
 - b. Type 2: qualifier, conservative terminative
n- in syllable-initial position in nasal environment
r- otherwise
These do not appear in syllable-final position.
28. Review: invariant *r*
Never in the nasal environment; never in syllable-final position.
29. Review: restructuring of the perfective/stative (adjectival verbs)
The perfective ceased to occur syllable-initially, with one exception (*nezɔ* 'it is good') (20)
In Petitot, the prefix has the form *hi*- rather than *nɛ*-: the change occurred before *n* shifted to *r*.
30. The issue then is the second person singular, and why it escaped restructuring.
- | | |
|--------------------------|------------------------|
| Subject: | <i>nɛ</i> - ~ ∇ |
| Other grammatical roles: | <i>nɛ</i> - |
- Why isn't this *rɛ*- ~ nasalization, as with other prefixes?
A possibility: frequency/robustness of the oral vs. nasal environment?
31. With prefix-initial /r/, nasality has a syllable domain.
Nasal in nasal environment; oral elsewhere.
32. Assumption
A prefix has a single (underlying) form (no allomorphy), all other things being equal.
33. Second person singular: nasal environment appears to be more common (based on counts of dictionary entries and on text counts).
- a. Subjects appear to be more common than objects and possessors.
 - b. An overwhelming number of verbs have nasalization in the imperfective; all have nasalization in the optative; I haven't done the right counts to know what is more common in the perfective.
 - c. The nasal environment is probably more common for the second person singular.
34. Variable *n*'s: oral environment in 1 sg, 1 pl, 2 pl; depending on morphological factors, in 2 sg and 3. Only the oral environment occurs in the optative.
The oral environment, the environment for restructuring, is more common.

VII. Morphological consequences: Effects of the introduction of /r/ on the morphology

35. A basic introduction to verb morphology
disjunct (lexical) – conjunct (functional) – stem

36. Differentiating disjunct and conjunct prefixes

	Disjunct (#)	Conjunct (+)
Phonological shape	'minimal': CV, CVC, CVCV	'subminimal': CV, where V is default vowel; C, VC
Meaning	Overall, lexical meanings	Overall, functional in content
2 sg. subject (imperfective)	ne- after disjunct	nasalization after conjunct
Form of optative (activity class; 1sg, 2sg subject)	wo-	u-
*s situation aspect, 1sg, 2sg subject	w-	tone
Resolution of VV sequences	consonant epenthesis	vowel deletion
Tone raising	no	yes
Tone displacement	yes	no

37. Nasalization crosses the disjunct boundary (#) in Délíne and other dialects.

a. Stative/perfective

'o-t'ε /a#n-t'ε/

'she, he, it is'

cf. 'a#héh-te

'I am'

b. n situation aspect

ní-tłá /ní#n-tłá/

'she, he, it arrives'

cf. ní#neh-tłá

'I arrive'

nínq-da /ní#na#n-da/

'she, he, it arrives back'

cf. ní#na#neh-da

'I arrive back'

38. This appears to be the historical situation

Leer *ʔə=nt'e 'it is'

39. Strengthening of the disjunct boundary in Fort Good Hope

40. Tonal phenomena: Verb stem tone shift in Fort Good Hope Dene

Délíne

Fort Good Hope

né'á

né'a

'you sg. eat'

'edehtł'é

'edéhtł'ε

'I write'

nats'é

ráts'e

'she, he, it drinks another'

41. When the tone shifts to a preceding conjunct, an extra high tone (‘‘; tone raising) results.
- | | | |
|-------------------|-------------------|-------------------------|
| yéhk’ <i>é</i> | yéhk’ <i>é</i> | ‘she, he, it shot it’ |
| níyeyé <i>chú</i> | ríyeyé <i>shu</i> | ‘she, he, it placed it’ |
42. But when the stem tone shifts to a preceding disjunct, an extra high tone is not created.
- | | | |
|------|------|-----------------|
| názé | ráze | ‘she, he hunts’ |
|------|------|-----------------|
43. When tone shifts to a disjunct, further tone shifts occur (tone displacement).
- | | | |
|-------------------|-------------------|------------------------------|
| bék’ <i>é</i> hdí | bék’ <i>é</i> hdi | ‘I keep him/her/it’ |
| nánaze | raráze | ‘she, he hunts again’ |
| łénadlá | łerádlá | ‘she, he tears in two again’ |
44. Nasalization does not cross the disjunct boundary (#) in FGH Dene today, while it does in other dialects (37).
A vowel is inserted to carry the nasalization, and [h] to provide an onset.
- | | | |
|---|---------------------|---------------------|
| ’a-h <i>ɛ</i> -t’ <i>ɛ</i> | /’a#n-t’ <i>ɛ</i> / | ‘she, he, it is’ |
| cf. ’a-h <i>ɛ</i> h-t’ <i>ɛ</i> | | ‘I am’ |
| rí-h <i>ɛ</i> -łá | /rí#n-łá/ | ‘s/he arrives’ |
| cf. rí-r <i>ɛ</i> h-łá | | ‘I arrive’ |
| rí-n <i>ɔ</i> -da ~ ríra-h <i>ɛ</i> -da | /rí#ra#n-da/ | ‘s/he arrives back’ |
| cf. ríra-r <i>ɛ</i> h-da | | ‘I arrive back’ |
45. Changing times
- | | | | |
|---------|------------------------|--------------------------|--------------------|
| Petitot | Li | current | |
| nonta | n <i>ɔ</i> da | (n <i>ɔ</i> da) ~ ráyeda | ‘s/he walks along’ |
| antté | ’ <i>ɔ</i> t’ <i>ɛ</i> | ’ah <i>ɛ</i> t’ <i>ɛ</i> | ‘she, he, it is’ |
46. What is going on?
- Strong evidence for the disjunct boundary across the area, strengthened in Fort Good Hope through the patterning of tones.
 - In Délíne, nasalization ‘crosses’ the disjunct boundary.
 - Introduction of /r/ in Fort Good Hope
 - Assumption: Uniformity of expression
 - ‘Unravelling’ of more complex phonology
 - Consequences for ongoing polysynthesis
Perhaps correlated with the introduction of /r/, the disjunct prefixes become less phonologically bound to the verb than previously, with nasalization no longer crossing it.

VIII. Summary

47.	Déline		Fort Good Hope	
		mid 1800's	early 1900's	late 1900's
		/n/	/n/, /r/	/n/, /r/
2 sg.	nɛ-~V̆	nɛ- ~ V̆	nɛ- ~ V̆	nɛ- ~ V̆
stative	nɛ-	h̥i-	h̥i-	h̥i-
variable n~r	n-	n-	n- ~ r-	n- ~ r-
disjunct	nV̆-	nV̆-	nV̆- ~ rVhɛ-	rVhɛ-

48. Trajectories and blocking

- a. Merging of PA *n and *ŋ (pre-Petitot)
- b. Restructuring of adjectival verbs (pre-Petitot)
- c. Restructuring of /n/ to /r/ in prefixes (oral environment)
Possible trigger: general oralization of onsets
- d. 2sg. escaped restructuring: nasal environment is more common
- e. Those that shifted: oral environment is more common
- f. Frequency/robustness appears to play a role in blocking restructuring
- g. Consequence (?) of restructuring: strengthening of disjunct boundary, 'undoing' an overall trend in the region towards greater polysynthesis

References

- Leer, Jeff. 1996. Comparative Athabaskan Lexicon. [Item CA965L1996](http://www.uaf.edu/anla/collections/ca/cal/). Ms., Alaska Native Language Archive. Online: <http://www.uaf.edu/anla/collections/ca/cal/>
- Li, Fang-Kui. Hare file slips.
- Petitot, Emile-Fortune-Stanislas-Joseph. 1876. *Dictionnaire de la langue dènè-dindjié dialects montagnais ou chippewayan, peaux de lièvre et loucheux, renfermant en outre un grand nombre de termes propres à sept autres dialectes de la même langue ; précédé d'une monographie des Dènè- Dindjié, d'une grammaire et de tableaux synoptiques des conjugaisons*. Paris: Ernest Leroux; San Francisco: A.-L. Bancroft.
- Rice, Keren. 1989. *A grammar of Slave*. Berlin: Mouton de Gruyter.

