

Sounds and writing systems of  
Deg Xinag, Tsek'ene and  
Witsuwit'en

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For Dene course, Leslie Saxon, U Vic

26 Sept 2016

# “Practical” orthographies

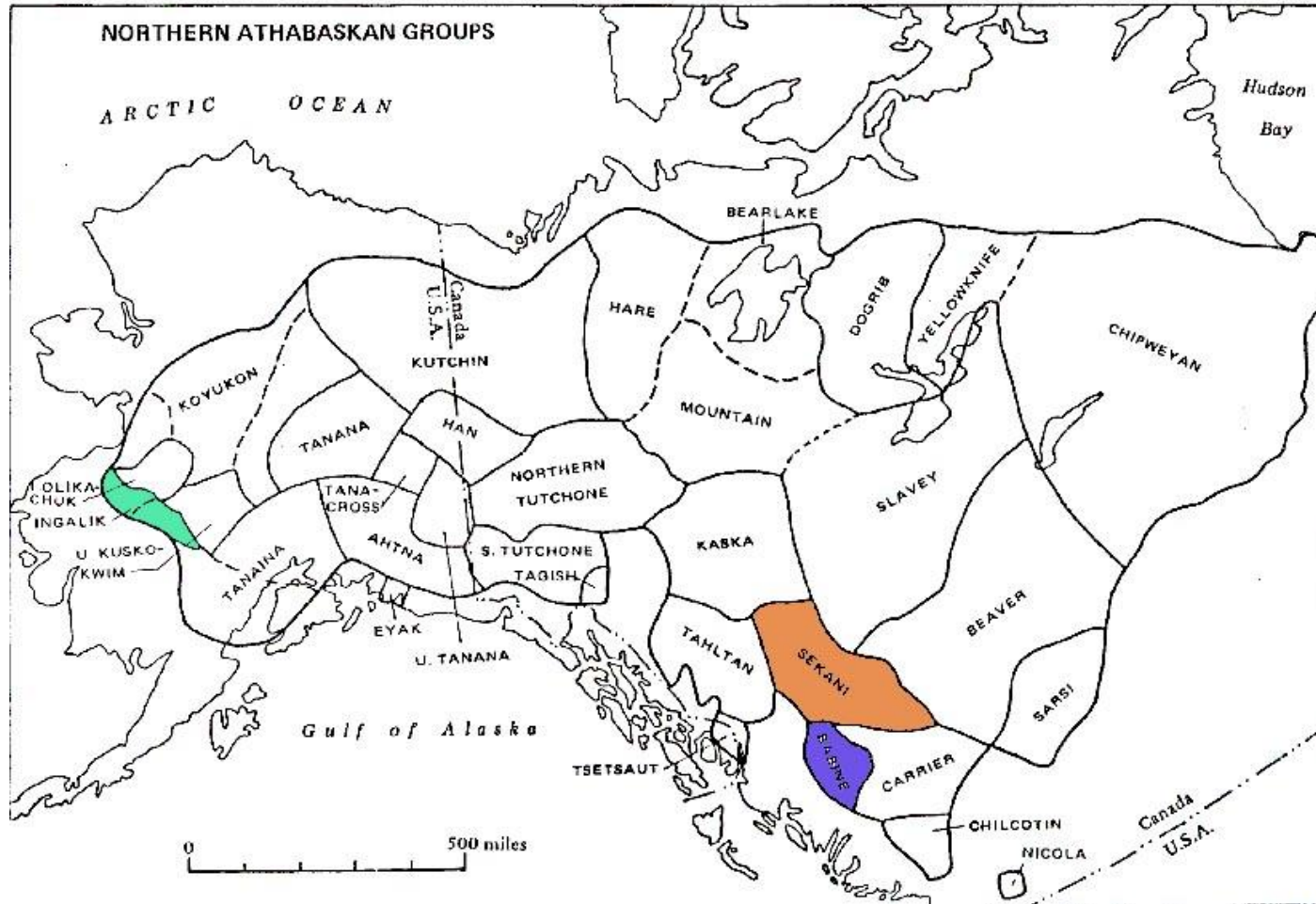
- What are they?
  - Systems for writing languages using symbols that ordinary folks are comfortable with
  - Linguistic symbols
    - $\text{ɔ} \text{tʃ} \text{χ} \text{ʃ} \text{r}$
    - are unfamiliar, strange-looking
    - slow to type

# Questions about practical orthographies

- Where do they come from?
  - Understanding of *phonology*
  - This may change over time
- Who designed?
  - Trained linguist?
  - Some other interested party?
- When were they designed?
  - What can be typed on a typewriter?
- How abstract should they be?
  - Sounds that are pronounced the same/differently should be spelled the same/differently.
  - Sound variations due to context are not represented.

gloss	Noun (IPA)	practical	Possessed N (IPA)	practical	UR
'pack'	xêh	xée <sup>h</sup>	-yêl-é <sup>?</sup>	-ghée <sup>l</sup> é	/xéł/

# Three northern Dene languages



Deg Xinag  
(Ingalik)

Tsek'ene (Sekani)

Witsuwit'en  
(Babine,  
Northern  
Carrier)

# Deg Xinag

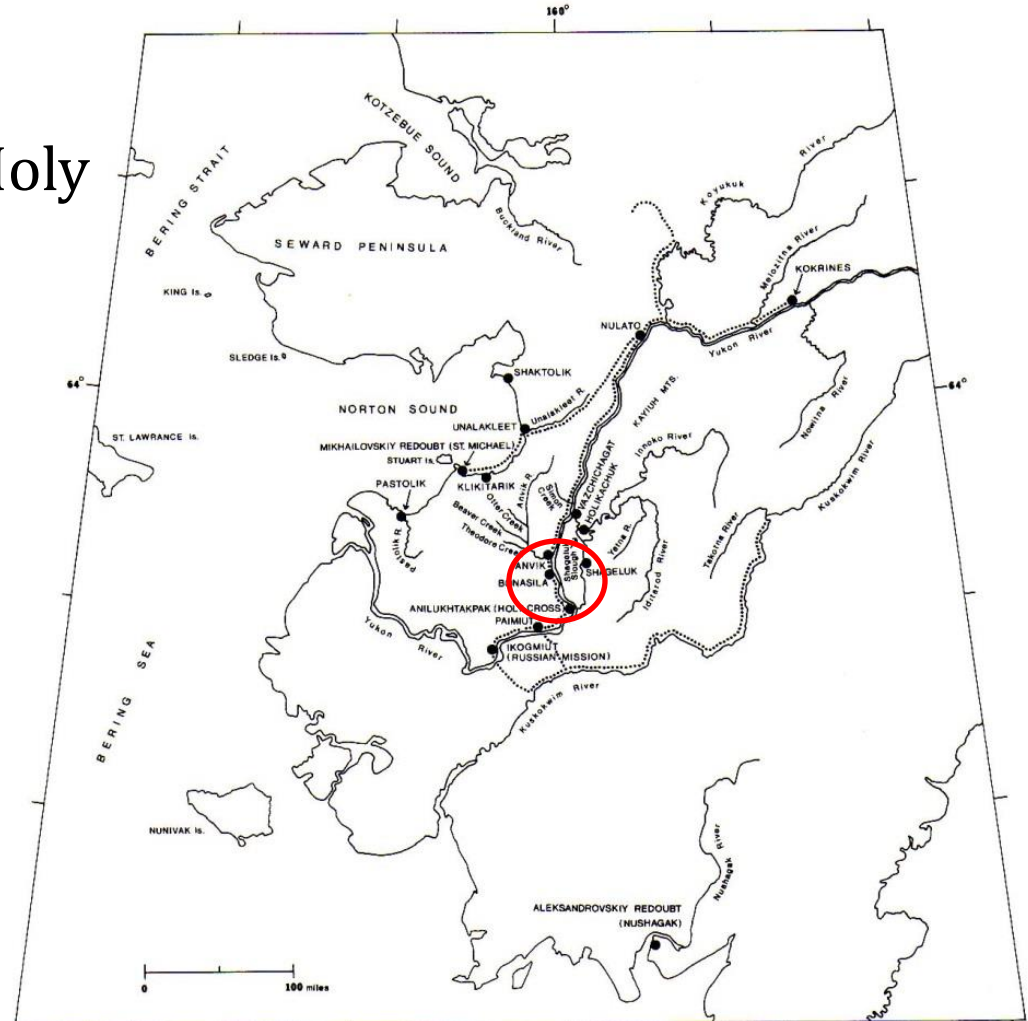
this area language



Yukon R. freezing up, near Anvik AK

# Some Deg Xinag communities

- Historic
  - Anvik, Bonasilla, Holy Cross
- Modern
  - Grayling also



# Some Deg Xinag speakers



*Alta Jerue  
(Anvik)*

*Elizabeth Workman  
(Shageluk)*



*Hannah Maillelle  
(Grayling)*



# More Deg Xinag speakers



*Phillip Arrow  
(Shageluk)*

*Raymond Dutchman  
(Shageluk)*



*Edna Deacon  
(Grayling)*

*James Dementi  
(Shageluk)*





# Epidemics in Deg Xinag history

- Smallpox, 1838-1839

- “based on population estimates of villages encountered by Russian explorers before and after these years, Yukon Ingalik villages lost fully two-thirds of their inhabitants...The effects of such a population loss can only be surmised, but we can assume that sickness was accompanied by starvation and serious social and economic disruption. The reduced population was forced to re-orient itself with reference to its modified-traditional lifeways at the very time when significant changes were being introduced from without. Ingalik population never recovered from the effects of this epidemic”



# Syllable-initial consonants

p p <sup>h</sup>		t t <sup>h</sup> t'			k k <sup>h</sup> k'	q q <sup>h</sup> q'	ʔ
	tθ tθ <sup>h</sup> tθ'	ts ts <sup>h</sup> ts'	tʂ tʂ <sup>h</sup> tʂ'	tʃ tʃ <sup>h</sup> tʃ'			
		tɬ tɬ <sup>h</sup> tɬ'					
v	θ ð	s z	ʂ ʐ	ʃ		χ ɣ	h
		ɬ l					
m		n		j			

In 1962, <ɬ> was typed as l, backspace, /.

# Syllable-final consonants

p		d t			g k	ɠ q	ʔ
	d̥ ð	dz ts	ɖz tɕ				
		dl tɬ					
v	θ ð̃	s z	ɬ z̥			χ ɸ	
		ɬ l					
m m'		n ɳ n'		j j' j̥	ŋ ŋ' ŋ̥		

Only other languages with final voicing contrast

- Holikachuk
- Koyukon (Lower dialect)

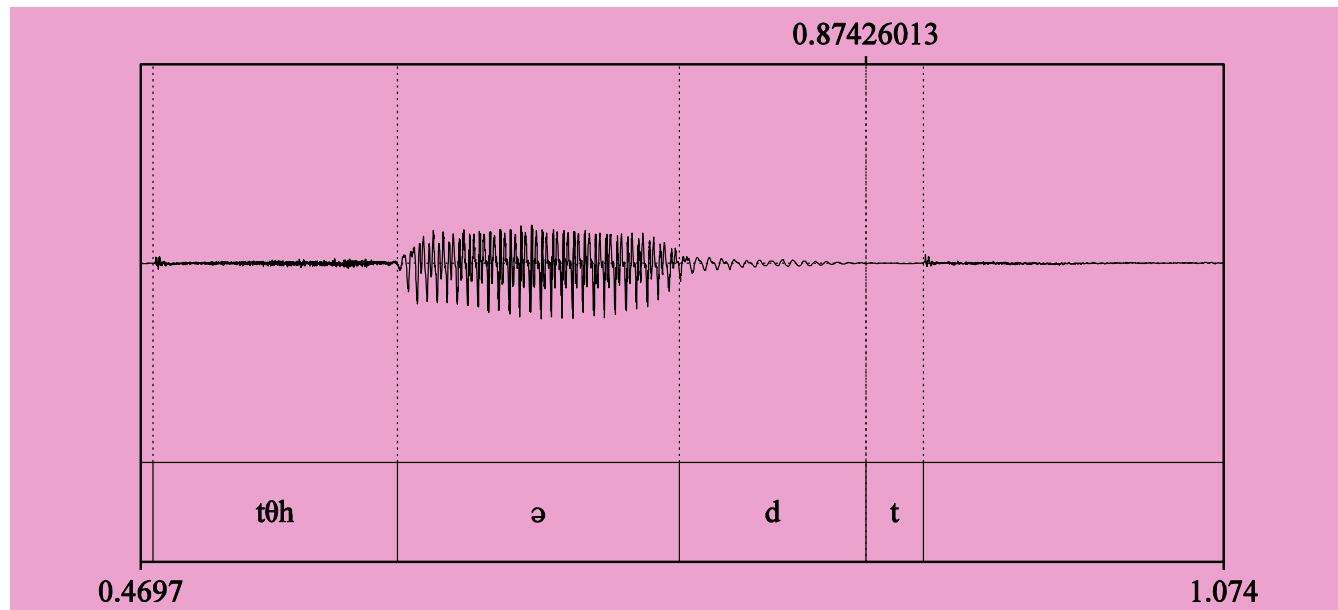
# Origin of final voicing contrast

	Proto-Athabaskan	Deg Xinag
*nV > n	*t <sup>h</sup> əŋ <sup>j</sup> -e: 'trail'	t <sup>h</sup> əŋ
*n > ɳ	*k <sup>jh</sup> a:n 'rain'	tʃ <sup>h</sup> oɳ

	Proto-Athabaskan	Deg Xinag
*tV > d	*tʃəteʔ, *tʃə̃teʔ ‘robe, blanket’	ts’əd
*t’, t > t	*tɬ’ət’ ‘fart’	tɬ’ət
V reduction	*-te: ‘where, when’	-tə kətəq <sup>h</sup> atə ‘store’ (lit. ‘where things are bought’)

# Phonetics of final voicing

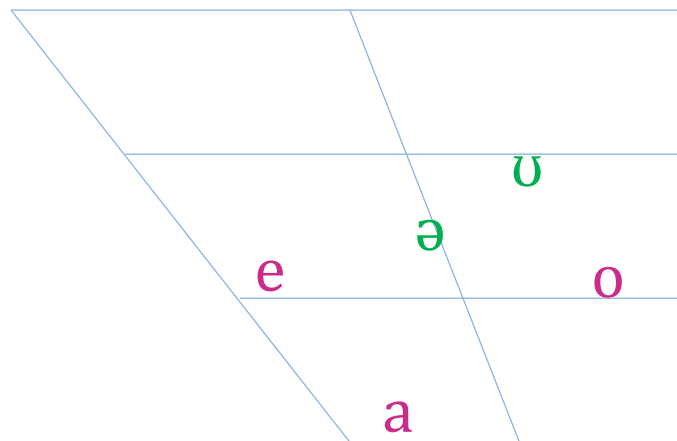
	voiced	voiceless
affricates	61%	16%
stops	38%	12%



kətθ<sup>h</sup>əd “ruffed grouse”

# Vowels

- 3 “full”, 2 “reduced”



- /u/ → [õ] adjacent to uvular
- [e o õ] lower-mid: [ɛ ɔ ǔ]
- /ə/ → [ɪ] ~ [i] / \_\_\_ j, velars

# Orthography (consonants)

Syllable-initial							
b p		d t t'			g k k'	gg q q'	'
	ddh tth tth'	dz ts ts'	dr tr tr'	j ch ch'			
		dl tl t'					
v	th dh	s z	sr zr	sh		x gh	h
		ʃ l					
m		n		y			
Syllable-final							
p		d t			g k	gg q	ʔ
	ddh tth	dz ts	dr tr				
		dl t					
v	th dh	s z	sr zr			x gh	
		ʃ l					
m m'		n nh n'		y yh h'	ng ngh ng'		



# Orthography (vowels)

		υ/ϑ̄ <u>
e <e>	ə <i>	o <o>
a <a>		

# Two writing systems

## II. — TEXTS.

- Rev. Chapman

### 4. THE SUN AND THE MOON.<sup>1</sup>

Kai qōtco'q qōđúo'n, trún'nǐ'. Kehlú'kû yurzyě' äqú'hł-  
Village large there was, they say. One family of then  
children

tdík yit dǐltčě', tci'dlûkai tēnnǐ'qĕn, qa'vwû ta'rdzrû yǐhl  
there lived, boys four, their younger also  
sister

gihlosna'llü.  
the fifth.

- Prof. Krauss

Qay xichux xidhu'onh tr'i'ne. Giłigg yozrye  
axaxiłdik yit didltth'e, chilqay diniyhın, xividadr  
yił giłixsnał.

# Some spellings

- *yixunh* [jǒχǒŋ] ‘you (pl.)’ Kari 1978
- *Niq'ołonh Chux Deg Ghihoł: The Big Woman Was Walking Along*  
– [nǒq'ołon] ~ [nq'ołon], [ɤǒhoł]


Kari, James. 1978. *Deg Xinag: Ingalik Noun Dictionary (Preliminary)*. Fairbanks: Alaska Native Language Center, University of Alaska Fairbanks.


Rock, Bertha. 1998. *Niq'ołonh Chux Deg Ghihoł: The Big Woman Was Walking Along*. McGrath, AK: Iditarod Area School District.

# Rounding Assimilation

- Some imperfective forms of ‘chew’:

/k-ə-q'ǒtʂ/      [kǒ'q'ǒtʂ]            ‘he/she is chewing’

/k-ə-s-q'ǒtʂ/      [kəs'q'ǒtʂ]            ‘I’m chewing’

/k-χ-ə-q'ǒtʂ/      [kəχǒ'q'ǒtʂ]            ‘they’re chewing’

- <yidoghot> ‘he shakes it’ (Kari 1976-1977: 178)  
for [jədǒɔt]

- Rounding Assimilation

– /ə/ → [ǒ] / \_\_\_ {uvular, laryngeal} {ǒ, o}

# Deg Xinag summary

- Consonants
  - Unusually large number
  - Syllable final voicing contrast
- Vowels
  - no /i u/
  - But [i ɪ] allophones of /ə/
  - Rounding Assimilation
- Linguist designed orthography
  - <d t> has dif interpretation syll-initially, finally

# Tsek'ene

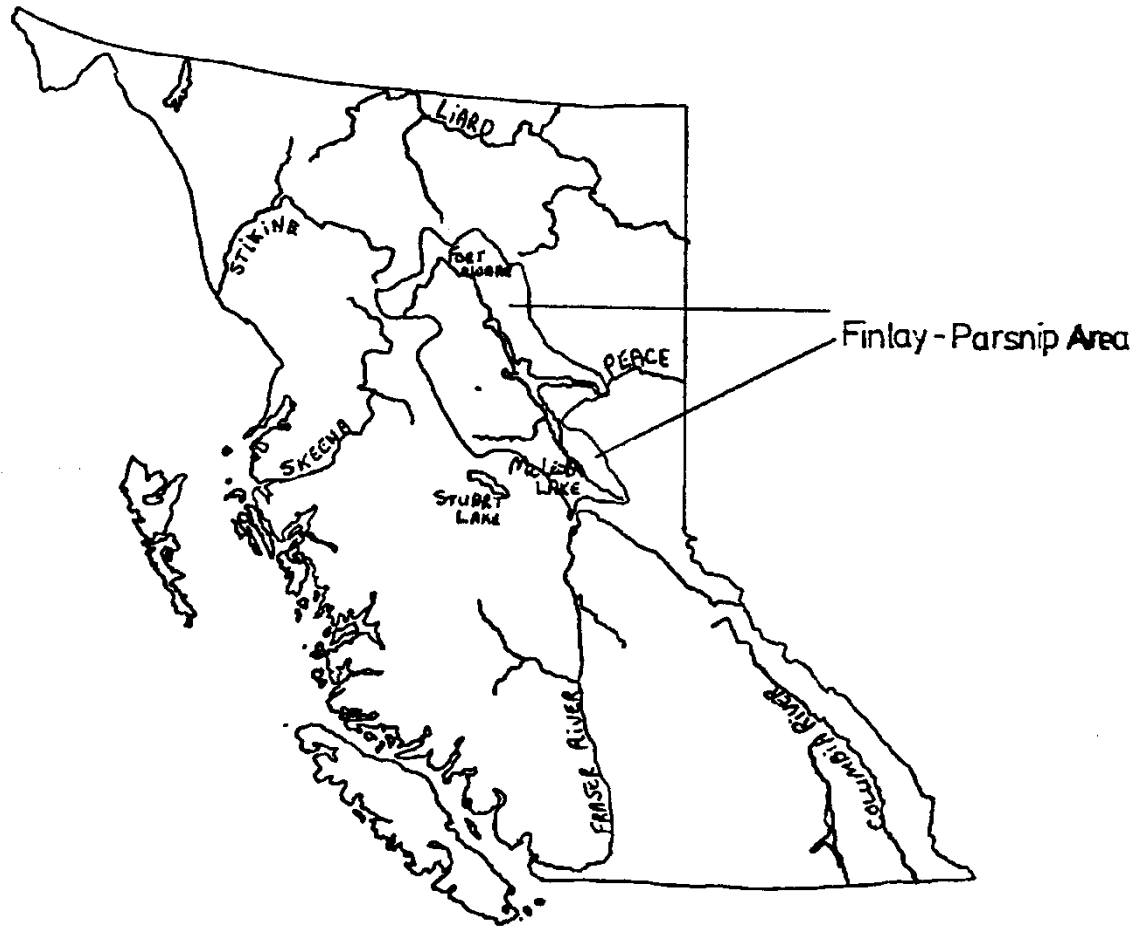


*Russell Range and Finlay River, B.C.*

Tsek'ene



# Tsek'ene language area



# Tsek'ene

- Closely related to Dane zaa (Beaver), especially Halfway, Moberly Lake
- > *Sekani, Siccany, Sékanais*, etc.
- Communities
  - Fort Grahame > Ingenika, Tsay Keh [tse k'eh]
  - McLeod Lake
  - Kwadacha (Fort Ware)

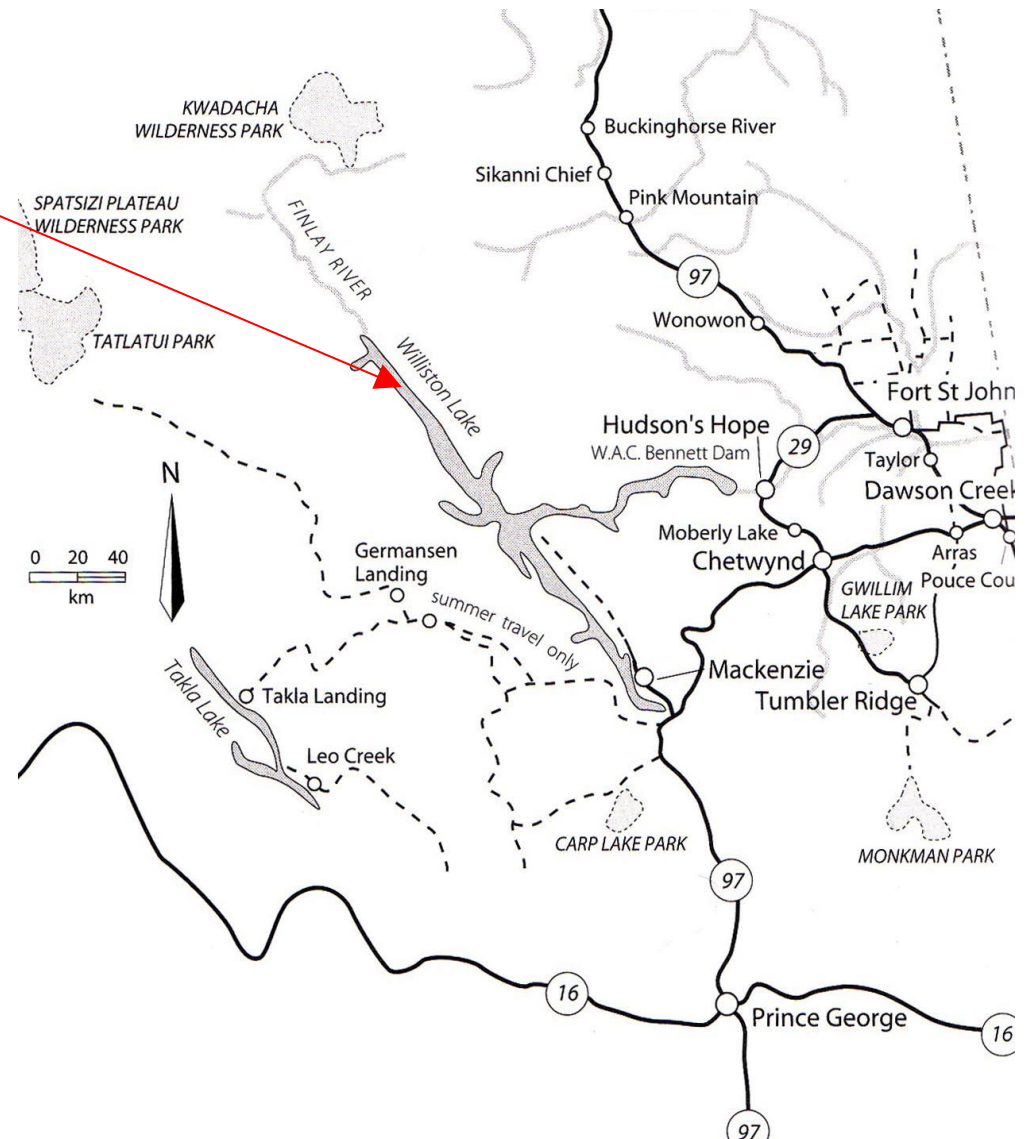






# Williston 'Lake'

- Fort Grahame diaspora
  - Mackenzie and Prince George
  - Fort Ware
  - lower mainland of B.C.
  - → Ingenika → Tsay Keh



# Some Tsek'ene speakers

*Mike Abou*



*Eileen McCook*



*Edna McCook*



*Mary Charlie*

# Consonants

Syllable-  
initial

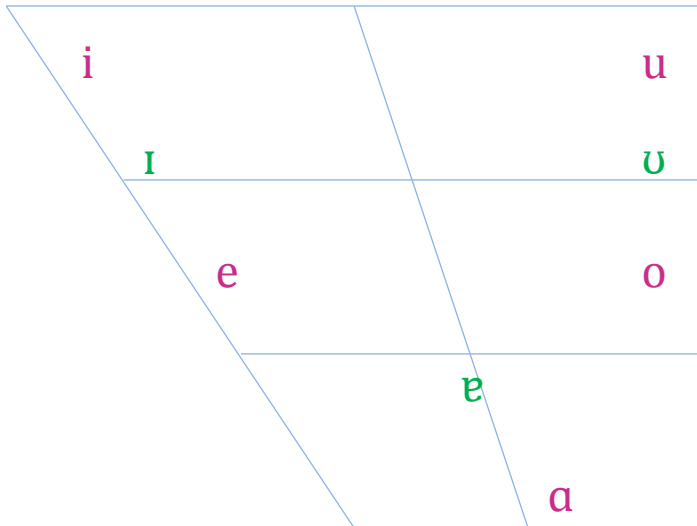
p	t t <sup>h</sup> t'			k k <sup>h</sup> k'	ʔ
	ts ts <sup>h</sup> ts'	tʃ tʃ <sup>h</sup> tʃ'			
	tʃ tʃ <sup>h</sup> tʃ'				
	s z	ʃ ʒ	ç	x ɣ	h
	ʃ l				
m	n				
w			j		

Syllable-  
final

p	t			k	ʔ
	ts				
	tʃ				
	s z	ʃ		x ɣ	h
	ʃ l				
m	n				
w			j		

# Oral vowels

- “full” vs. “reduced”



- Reduced vowels
  - Phonetically shorter
  - Not word-final

# /ɪ/ and /ʊ/

- /ɪ/, /e/ in complementary distribution in prefixes
- /ɪ/, /i/ in complementary distribution in roots
- Need for /ɪ/
  - /ts'itèhʔãʔ/ 'we sent him/her'
  - /ts'ètèʔ/ 'blanket'
  - /ts<sup>h</sup>iti/ 'hot coals'
- Need for /ʊ/
  - /səkùt/ 'my knee'
  - /səkotèʔ/ 'my coat'
  - /kùle/ 'willow'
- But /ʊ/ only next to velars







# Extra long vowels

yɛtà?	‘he/she sat’
xɛtà:?	‘our eyes’
mɛtè?	‘its horns’
mɛlè:?	‘his dog’
xǎhtsi?	‘already’
sitsi:?	‘my inner ear’

Thank you, John  
Ritter of Yukon Native  
Language Centre

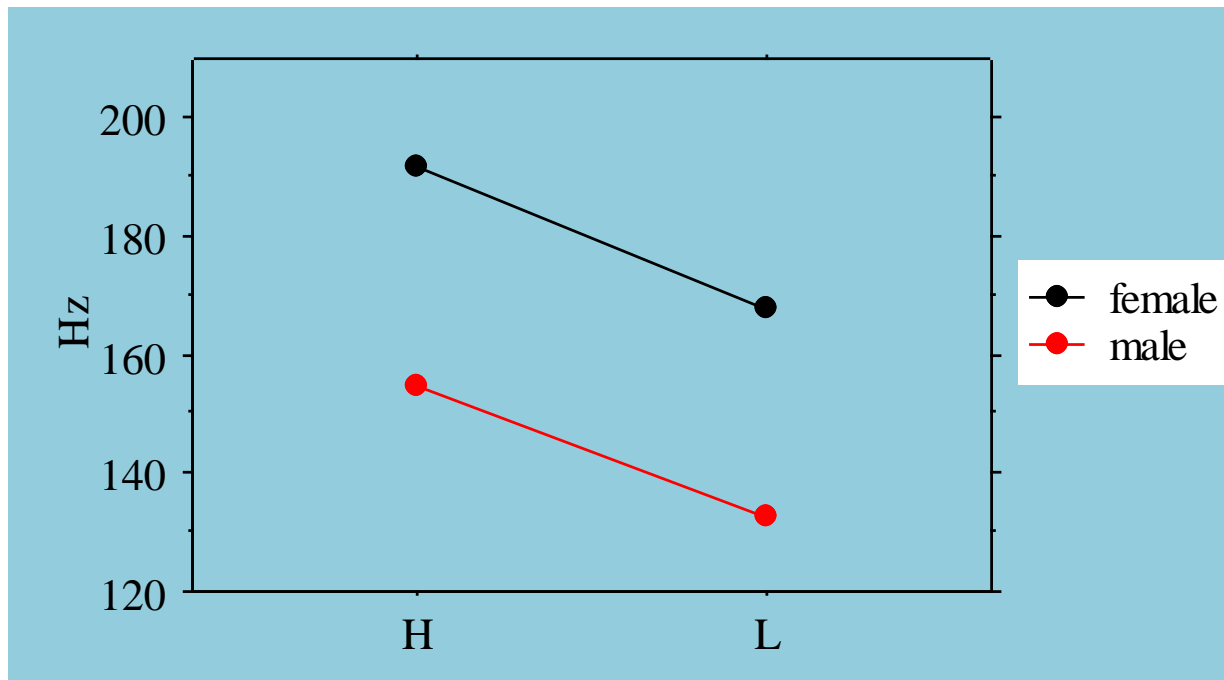


# Tones

low: à	łàwì 	‘once’
high: a	ławì 	‘stop it’
falling: â	t <sup>h</sup> âmah 	‘shore’
rising: ă	t <sup>h</sup> ăta 	‘he got hurt’



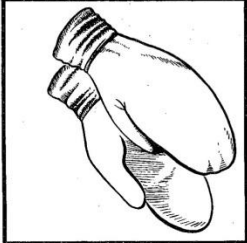
# Tone vs. pitch

- Male vs. female voices
  - 3 males: lower pitch range (130-155 Hz)
  - 7 females: higher pitch range (165-195 Hz)



# Orthography

- Developed by SIL linguists Dave and Kay Wilkinson
- Some “cosmetic” decisions
  - [ɬ] <lh> [x] <kh> [ç] <yh>
  - [ɛ] <u>, [u] <oo>, [i] <ee>
  - [ẽ] <e>
- Word-initial [ʔ] not written

Consonant Sounds	Syllables
 <p>kashoh shoh sh</p>	<p>chu ba k'e beh</p> <p>k'e dah k'e beh</p>
 <p>dlezhe zhe zh</p>	<p>lhut lhoo we</p>
 <p>bad b</p>	<p>yus dlezhe zus</p> <p>shu wa' ka shoh</p>

# Problems with Wilkinsons' orthography

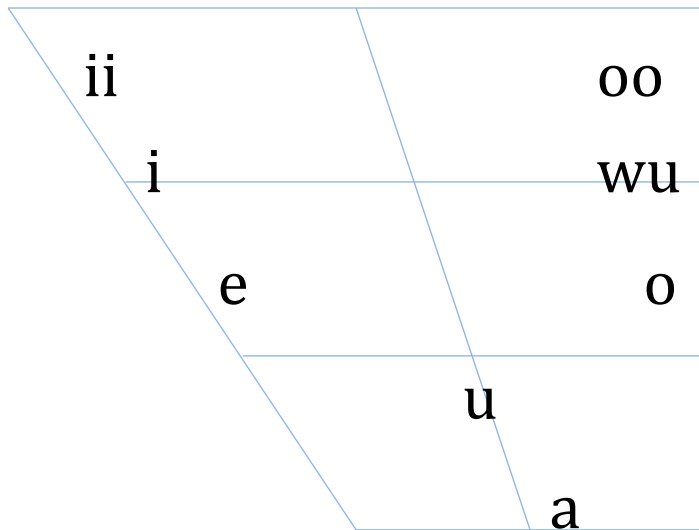
- Does not represent
  - /ʊ/
  - tone
  - extra long vowels
  - word-initial “zero” vs. glottal stop
    - [õ] ‘yes’
    - [ʔõ̃tse] ‘over here’
    - [hõ] ‘okay’

# Orthography (consonants)

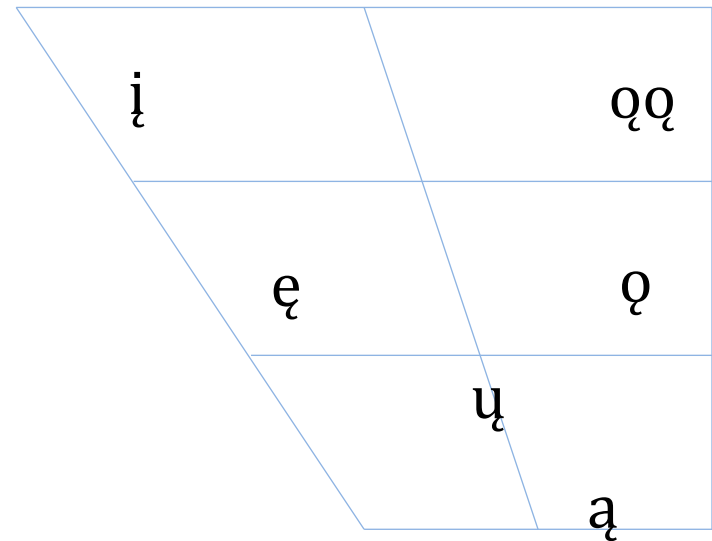
p	d t t'			g k k'	'
	dz ts ts'	j ch ch'			
	dl tl tl'				
	s z	sh zh	yh	kh gh	h
	lh l				
m	n				
w			y		

# Orthography (vowels)

- Oral



- Nasal



- Extra-long: iii ee aa

# Orthography (tones)

	<i>high</i>	<i>low</i>	<i>rising</i>	<i>falling</i>
a [a]	a	à	àa	aà
e [e]	e	è	èe	eè
i [ɪ]	i	ì	--	--
ii [i]	ii	ìì	ìì	ìì
o [o]	o	ò	--	--
oo [u]	oo	òò	òò	òò
u [ʊ]	u	ù	--	--
wu [ʊ]	wu	wù	--	--
aa [a:]	--	àà	--	--
ee [e:]	--	èè	--	--
iii [i:]	--	ììì	--	--

# A puzzle about Kwadacha

- In all other dialects of Tsek'ene and most dialects of Beaver, \*d t t' > j ch ch' / \_\_\_ [i e oo] (in roots)

- Maybe Tsek'ene-Beaver

Kwadacha

rest of Tsek'ene-Beaver

- But Tsek'ene-Beaver

Ft Grahame

Tsay Keh

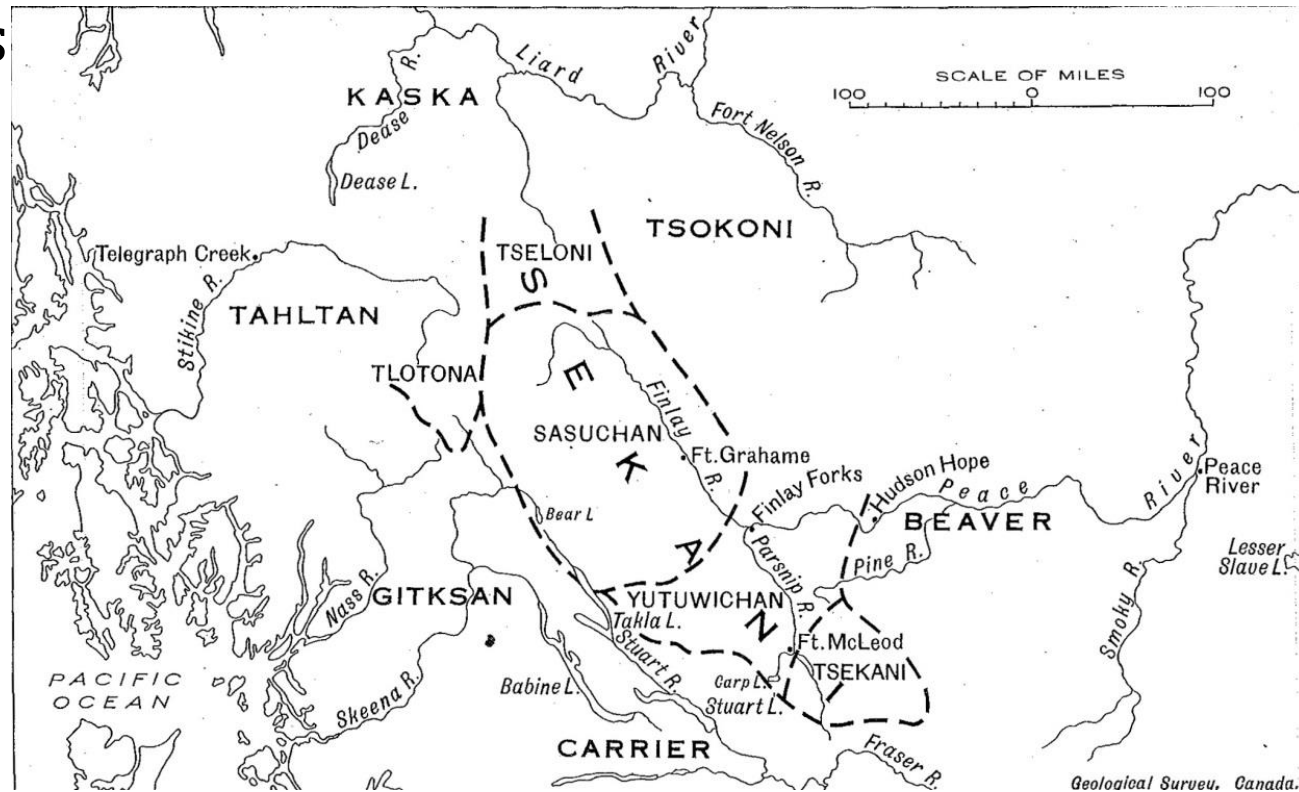
Kwadacha



# Linguistic origins of Kwadacha

- 4 Tsek'ene groups  
“in the early days  
of the nineteenth  
century”

- *Tseloni* (**Tselone**)
- *Sasuchan*  
(**Sas̄stoot'a**)
- *Yutuwichan*  
(**Yitsoot'a**)
- *Tsekani*  
(**Tsek'ene**)



Morice, Adrien-Gabriel. 1892-1893. 'Notes Archaeological, Industrial and Sociological on the Western Dénés With an Ethnographical Sketch of the Same.' *Transactions of the Royal Canadian Institute* 4:1-222.

- Jenness 1924 interviews in McLeod Lake and Fort Grahame
  - “The *Tseloni* band amalgamated with the *Sasuchan* or Bear Lake band when Fort Grahame was established [1890], and a new band..., known to the *Tseloni* and *Sasuchan* Indians as Otzane[’Odziinè’], now occupies its old territory on Fox and Kechika rivers. The leader and creator of this band was a man named Davie or David, the son of a French-Canadian trapper and a *Sasuchan* mother. Marriage with a Tseloni woman gave him hunting rights in the old *Tseloni* territory, where he raised a family of four daughters ..”
- Davie from Fort Grahame (falling out w/ half brother)

# 'Àtse Davie and some relatives



Munro  
Massetoe  
son-in-law

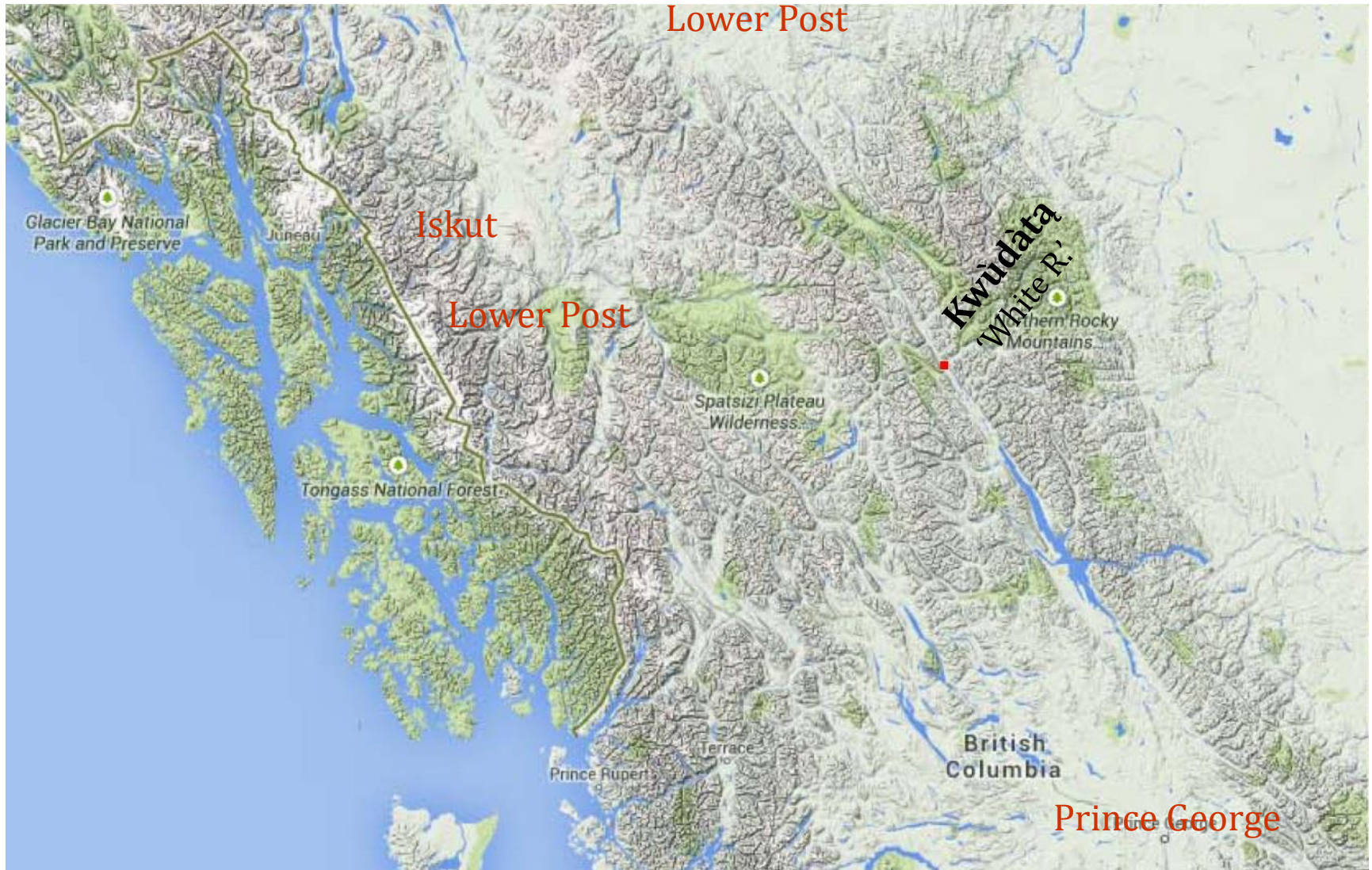
Harry  
Davie  
stepson to Mac

Mac  
McCook  
son-in-law

Frank  
Abou  
son-in-law to Munro

'Àtse  
Davie

# Kwadacha (Fort Ware), B.C.



# Tsek'ene summary

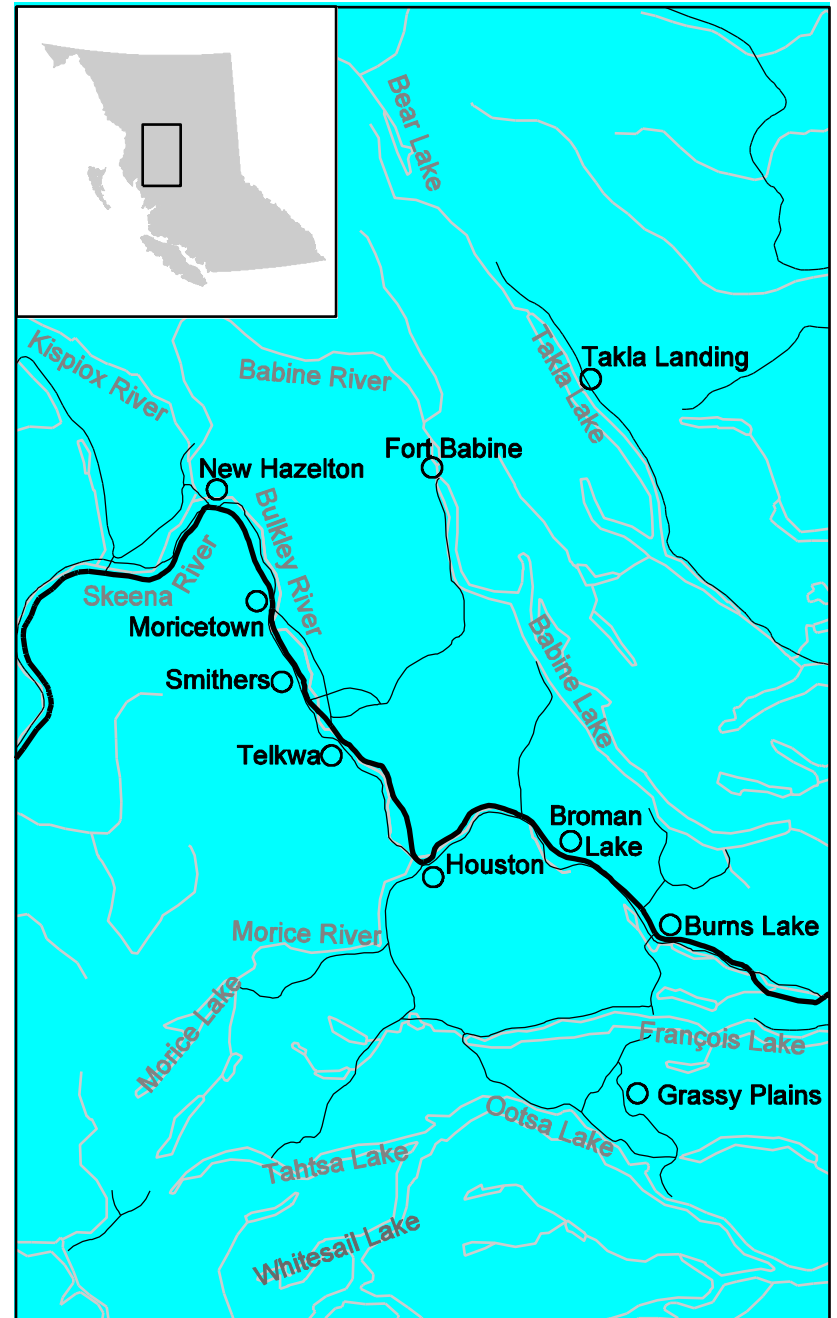
- Missionary-designed, linguist-revised orthography
  - Writing system evolved with better phonological understanding
- Large number of vowel qualities
  - Tone and vowel quality interactions
- Issue: representation of intonation?

# Witsuwit'en



Bulkley R. at Telkwa, BC

# Witsuwit'en- Babine language area



# Some Witsuwit'en speakers



Lillian Morris,  
Moricetown



Mabel Forsythe,  
Moricetown



Helen Nikal,  
Moricetown



Helen Mitchell,  
Moricetown



Beatrice Morris,  
Moricetown



# More Witsuwit'en speakers



George Williams,  
Moricetown



Andy Dennis,  
Moricetown



Dan Michell,  
Moricetown



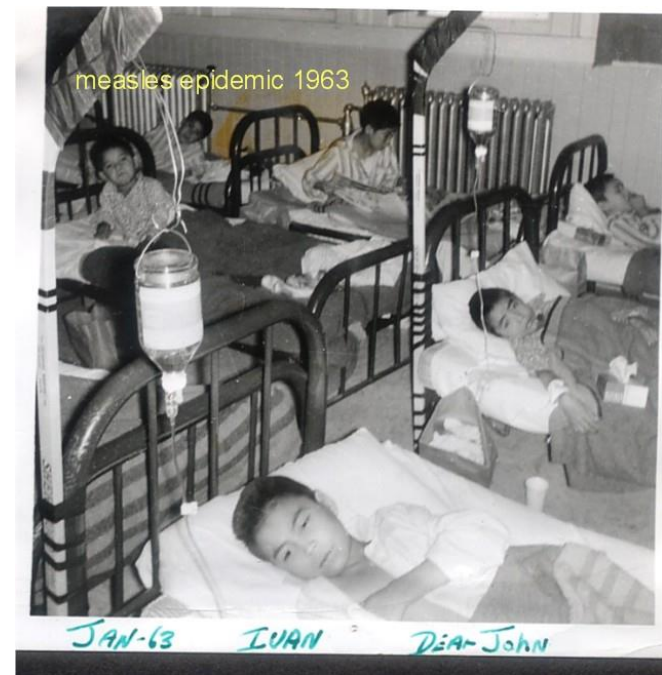
Stanley Morris,  
Moricetown

# Lejac Residential School

- Language suppression, 1922-1976



*girls preparing for first communion*



Kwadacha

Moricetown

Lejac Residential School,  
Fraser Lake



# Consonants

p p'	t t <sup>h</sup> t'	c c <sup>h</sup> c'	k <sup>w</sup> k <sup>w</sup> <sup>h</sup> k <sup>w</sup> '	q q <sup>h</sup> q'	ʔ
	ts ts <sup>h</sup> ts'				
	tʃ tʃ <sup>h</sup> tʃ'				
	s z	ç	x <sup>w</sup>	χ ʁ	h
	ʃ l				
m	n				
		j	w		

Allowed syllable-finally

# Palatalization

- A rule of the Babine and Takla dialects
- /c c<sup>h</sup> c' / → [tʃ tʃ<sup>h</sup> tʃ'] / \_\_\_ V
- Witsuwit'en                      Babine, Takla
- [cəs] 'hook'                      [tʃəs]
- [ts'ac] 'bowl, plate'              [ts'ac]

# Consonants (orthographic)

p p'	d t t'	j c c'	gw kw kw'	g k k'	'
	dz ts ts'				
	dl tl tl'				
	s z	yh	wh	kh gh	h
	lh l				
m	n				
		j	w		

# /c/- 1sg subject

- Witsuwit'en Babine, Takla
- [nəcəlcət] 'I'm scared' [nəcəltʃət] !!!
- /nəclcət/
- - Palatalization
- ə ə insertion
- [nəcəltʃət] <nicljit>
- Cf. [nətəltʃət] <nidiljit> 'we (du.) are scared'

# Two consonant classes

“lenis”					
p	t ts tɬ	c	k <sup>w</sup>	q	
	z l				
m	n	j	w	ɸ	
“fortis”					
p’	t <sup>h</sup> t’ ts <sup>h</sup> ts’ tɬ <sup>h</sup> tɬ’	c <sup>h</sup> c’	k <sup>wh</sup> k <sup>w</sup> ’	q <sup>h</sup> q’	ʔ
	s ɬ	ç	x <sup>w</sup>	χ	h

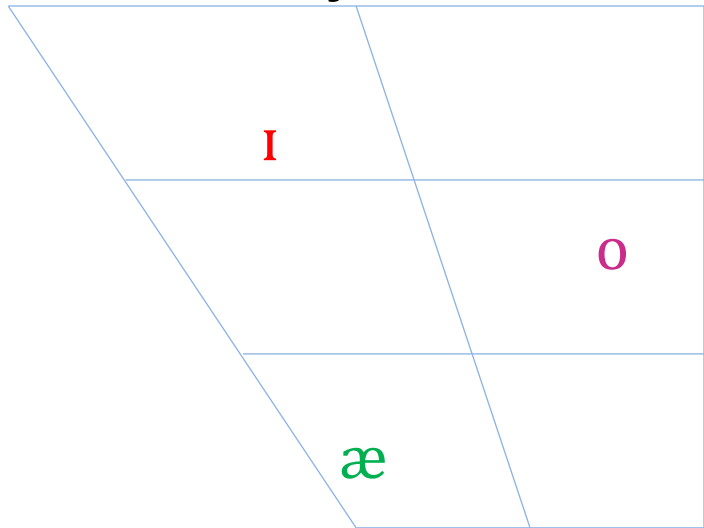
Hildebrandt, Henry, and Gillian Story. 1974. A Historically Oriented Study of Babine (Northern Carrier) Phonology, Burns Lake, B.C., Ms.

Story, Gillian. 1984. *Babine and Carrier Phonology: A historically oriented study*. Arlington: Summer Institute of Linguistics.



# Central vowel qualities

- After lenis Cs, word-initially

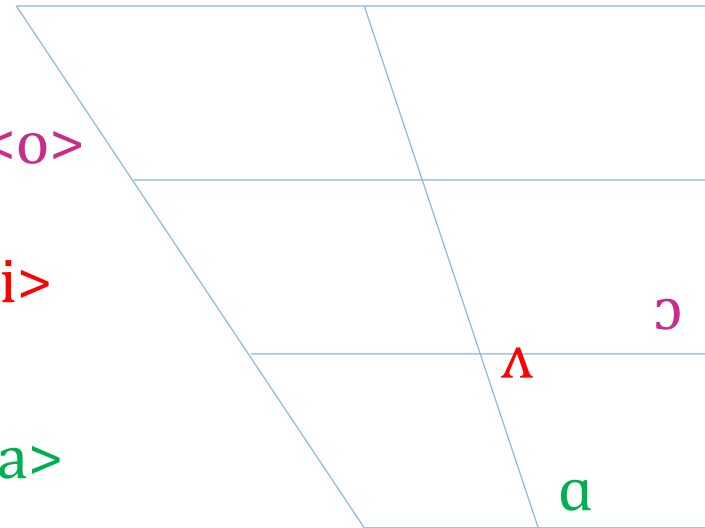


/o/ <o>

/ə/ <i>

/a/ <a>

- After fortis Cs



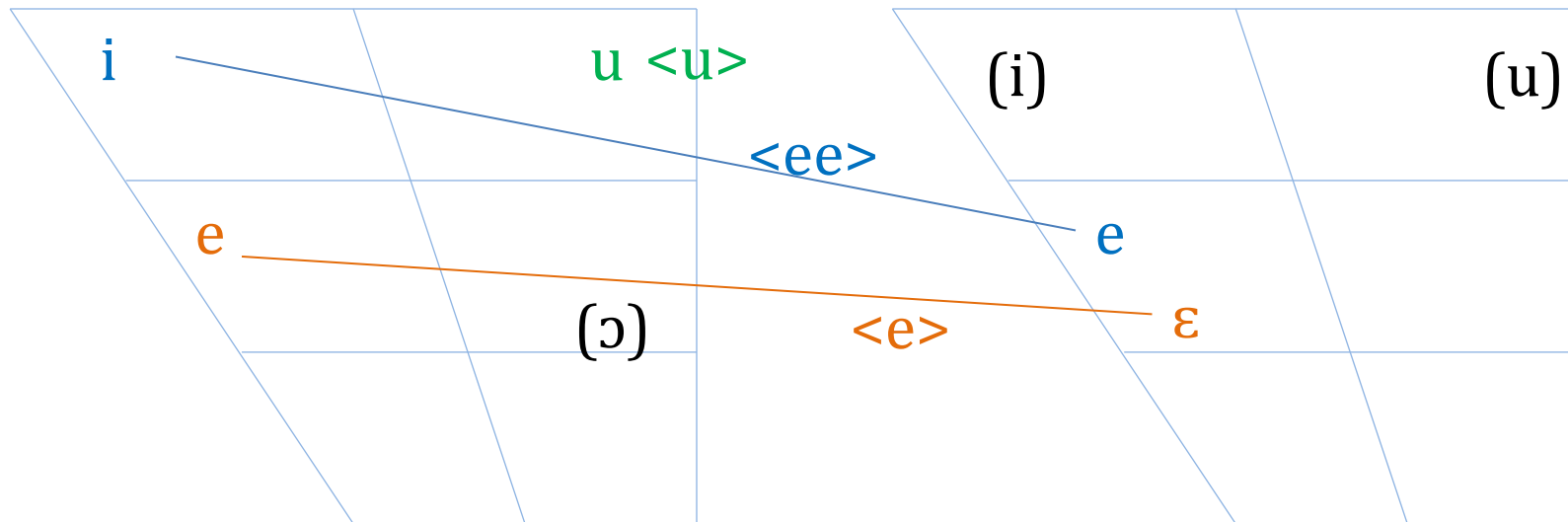
ɔ

ʌ

ɑ

# Peripheral vowel qualities

- Hildebrandt system



- After lenis Cs, word-initially

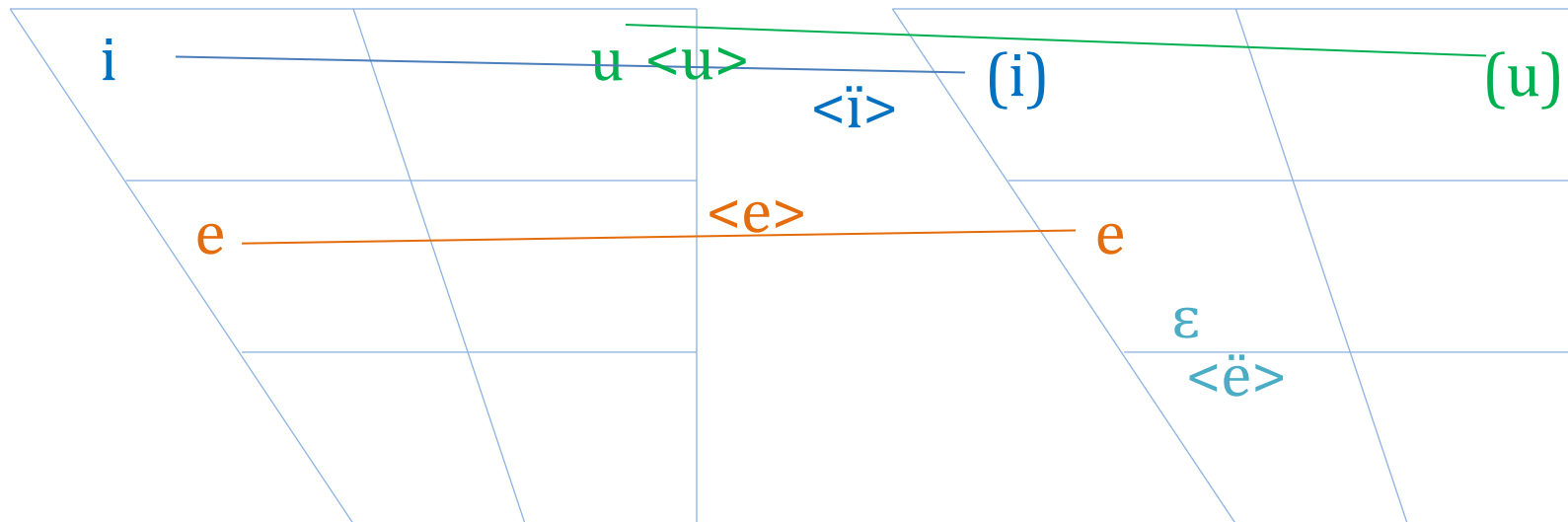
- After fortis Cs

# Comparison of writing systems

	Babine	Witsuwit'en	
	<i>Hildebrandt system</i>	<i>revised Hildebrandt</i>	
1)	negizjee [neqəztʃi]	neggizgi [neqəzci]	'fox'
2)	whenicljit [x <sup>w</sup> enəcəlʃət]	wenigilgit [wenəcəlcət]	'I'm scared'
3)	yeilhdic [je:ɫtəc]	yeelhdic [je:ɫtəc]	'they're talking'
4)	Seezee [sezi]~[sizi]	Sizi~Sezi [sezi]~[sizi]	'Jesus'
	weusdleet [weustɫit]	weusdlit [weustɫit]	'it's not melting'
	sitl'eet [sətɫ'et]	sitl'et [sətɫ'et]	'he/she farted'
	sidlet [sətɫet]	sidlet [sətɫet]	'it's licking me'
	tl'et [tɫ'et]	tl'ët [tɫ'et]	'night'

# Peripheral vowel qualities

- Revised Hildebrandt system



- After lenis Cs, word-initially

- After fortis Cs

# Witsuwit'en stress

- Not reflected in writing system
- Predictable. Some of the rules:
  - Stress roots (vs. affixes)
  - Stress vowels other than [ə]
  - Stress closed (vs. open) syllables
- In case of conflict, stress-root most important

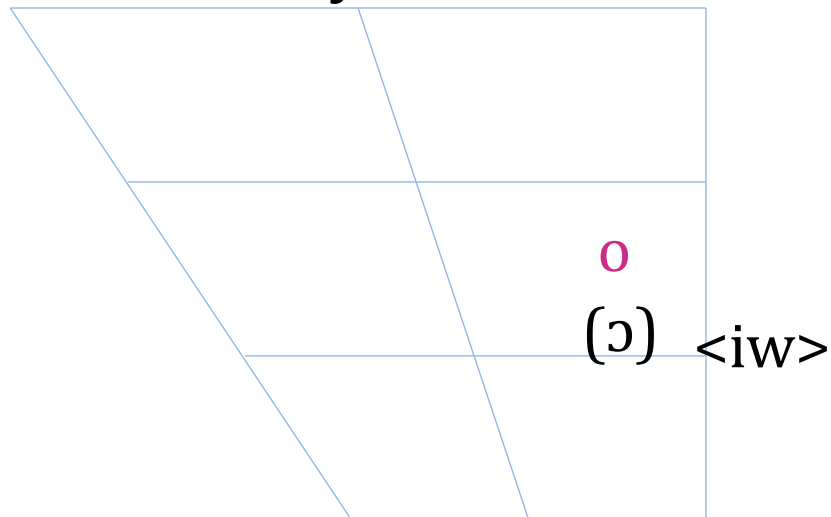
# Near-minimal pairs for stress

		root	spelling
wətə'qəz	'it (area) is crooked'	-/qəz/ 'be crooked'	widiggiz
pə'təqət	'above him'	/təq/ 'up'	bidiggit
tə'ni	'person'	/təni/ 'person'	dini
'ntəni	'these people'	/tən/ 'this person'	ndini
səs'quh	'I grabbed it'	-/quh/ 'grab'	sisgguh
'səsquh	'black bear deadfall'	/səs/ 'black bear', /quh/ 'deadfall'	sis gguh

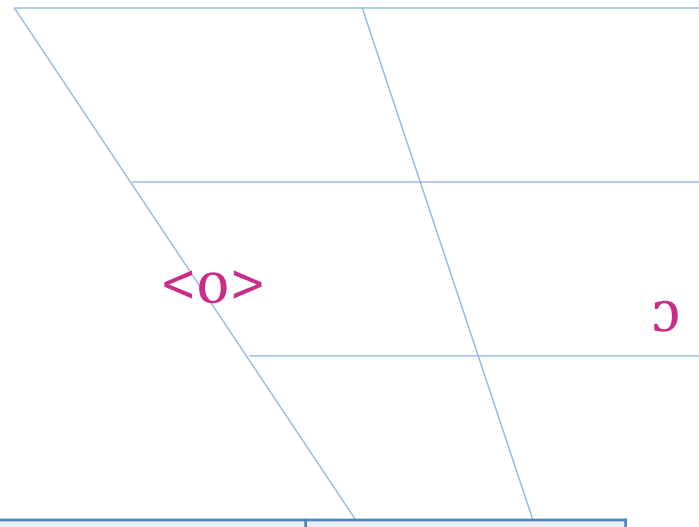
Notice: stress not written. Should it be?

# [o]/[ɔ] again

- After lenis Cs, word-initially



- After fortis Cs



current			alternative
<to>	[t <sup>h</sup> ɔ]	'water'	<to>
<doso>	[tosɔ]	'gunny sack'	<döso>
<lhdiw>	[ɬtɔ]	'it cramped'	<lhdo>
<niwis>	[nɔ̃'wəs]	'soapberries'	<niwis>

# Witsuwit'en summary

- Missionary designed, linguist revised writing system
- Major asymmetries in sound system < fortis, lenis Cs
- <i> [ɪ] ~ [ə] ~ [ʌ]
- Two potential problems
  - Does not represent stress
  - [o]/[ɔ] issue



# Summary

- Deg Xinag, Tsek'ene, Witsuwit'en have different writing systems
  - Due to different phonological systems
- Writing systems are designed, may need to be later revised
- Difficult choices sometimes
  - Symbols for large vowel inventories
  - Symbols for sounds with a range of qualities

# Dogidinh

~ musii chow ~ niwhnecawhlhyegh



On my way to Alta Jerue's house, Anvik AK, 2003