

KRAUSS (2005) TONOGENESIS TABLES: IPA TRANSCRIPTION

Appendix: the Tables

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Original Source: Tables taken from Krauss (2005)

Created: June 2011

Goal: recreate the tables from Krauss (2005) using IPA

Comments: The forms in red contain symbols we are uncertain about transcribing.

Group 1 = L-tone marked, Group 2 = H-tone marked, Group 3 = toneless

Reference: O'Loughlin, Jared and Joyce McDonough. 2011. "Krauss Tonogenesis Tables: IPA transcription." Department of Linguistics, University of Rochester.

<http://www.ling.rochester.edu/research/labs/phonetics.html>, downloaded <date>

Referenced in: McDonough, Joyce. 2019. Krauss (2005) Tonogenesis Tables: IPA transcription. in Guekguezian, P & McDonough, J. (eds), *University of Rochester Working Papers in the Language Sciences (URWPLS)*, vol. 7, 1-8. Cambridge, MA: MIT Working Papers in Linguistics.

Table 1: Non-Constricted full-vowel stems: open or closed with plain sonorant

		sky	water	stone
Group	Proto-Athabaskan	*ja:	*tu:	*tse:
Group 1	Kutchin	žé:	ṭʃú: -ṭʃù' -ṭʃù:'	kí:
	Han	dzáé:	ṭʃú: -ṭʃù' -ṭʃù:'	ṭθé: -ṭθè:'
	Dogrib	já-	tí -tì	kwe -kwè
	Southern Tutchone	já-	ṭʃú -ṭʃù'	θé
	Tagish	dzá-	tú -tú'	tsé
	Tahltan		tú: -tué'	tsê: -tsé'e
	Sekani	jâ	ṭʃû -ṭʃúwe'	tsê -tsè'
	Sarcee		tú -tùwà' -tù'	cá -cáhà'
	Navajo	já	tó -tò' -tò:'	tse -tsè'
Group 2	Northern Tutchone	jà-	tù -tú'	ṭθì
	Kaska	jà-	tù' -tú -tùš'	tsè -tsé'
	Hare	jâ	tù -túé'	fwè -fíe' fiè
	Mountain		tù tùé'	pè -pèé'
	Bearlake	jâ	tù -tú' -túé'	kwè -kwèé'
	Slavey	dzà	tù tùé'	ṭθè -ṭθèé'
	Beaver	jâ	ṭʃû -ṭʃúwe'	tsê -tsè'
	Dëne Sułine	jâ	tù -túwé	ṭθè -ṭθé
	Chilcotin		tù	çi
Tanacross	ʃjà:	tù: -tú:'	ṭθè: -ṭθé:'	
Group 3	Hupa		to:	tse:
	Mattole	ja:	-to'	tse:
	Galice	ja:	to:	se:
	Ahtna	ja:	tu: -tu' -tu:'	
	Tanaina	yu-		tsa
	Upper Kuskokwim	yo	tu	tsa
Eyak	ja:-		tsa:	

Table 1: Non-Constricted full-vowel stems: open or closed with plain sonorant

Group	Proto-Athabaskan	sun *ʃ ^w a:	grease *ɣe: *χe:	day *d̄ʒwe:n(ə)
Group 1	Kutchin	s ^r é:	xwáj: -ɣwàj' -ɣwàj:'	d ^r ín
	Han	s ^r é:	xé: -ɣè'	drín:
	Dogrib	sá	d̄ʒ	ʒé
	Southern Tutchone	sá	xé -jè'	zén-
	Tagish	sâ	xe -jè'	ʒén
	Tahltan	sâ:		ʒén-
	Sekani	sa		ʒén-
	Sarcee		xá -ɣáhà'	ʒín-
	Navajo	ʃá		d̄ʒí
Group 2	Northern Tutchone	sè	xì	ʒjàn
	Kaska	sà		ʒén-
	Hare	sà -zá'		ʒìnè -ʒíné'
	Mountain	sà -zàá'		
	Bearlake	sà -zàá'		ʒènè -ʒéné'
	Slavey	sà -zàá'		ʒènè
	Beaver	sa -sa	-ɣé	ʒènè
	Dëne Sułine	sà -zǎ:		ʒì
	Chilcotin	sà		ʒìn
	Tanacross	sà: -sá:'	xè: -xé:'	ʒè:n:
Group 3	Hupa	Wa:		d̄ʒiŋ-
	Mattole	xa: -xa'	ke:	d̄ʒiŋ
	Galice	sa:		sin-
	Ahtna	sa:	xe:	ʒe:n
	Tanaina		xa	d̄ʒan
	Upper Kuskokwim	s ^r o	ha	d ^r aŋ
Eyak	x ^w ah "summer"	ɣe: -ɣe'	g ^w ah gè:lə-	

Table 1: Non-Constricted full-vowel stems: open or closed with plain sonorant

Group	Proto-Athabaskan	rain *k̥a:n *ca:n	mother *-(h)a:n	mosquito *tsu:j(ə) *tsi:j(ə)
Group 1	Kutchin	tsín	-hán	k'íh
	Han	tsə́h	-ná:ɛ	t̃θ'áj:
	Dogrib	t̃ʃ̌	-m̌	kw'í
	Southern Tutchone	ʃá	-má	
	Tagish	t̃ʃ̌á	-má	ts'íh
	Tahltan	t̃ʃ̌á:	-má:	ts'ì
	Sekani	t̃ʃ̌̌:		
	Sarcee	t̃ʃ̌á	-á	ts'í
	Navajo	t̃ʃ̌á	-má	
Group 2	Northern Tutchone	t̃ʃ̌èn	-nè	
	Kaska	t̃ʃ̌̌ t̃ʃ̌̌á		t̃ʃ̌'íè
	Hare	ʃ̌̌ -ʃ̌̌óné'	-ň	'wìh
	Mountain			
	Bearlake	t̃ʃ̌̌ -t̃ʃ̌̌óné'	-ň	kw'íh
	Slavey	t̃ʃ̌̌̌	-m̌	t̃θ'íh
	Beaver	t̃ʃ̌̌̌	-mà	ts'í:
	Dëne Suline	t̃ʃ̌̌̌á	-à	
	Chilcotin	t̃ʃ̌̌àn	-bàn	
	Tanacross	t̃ʃ̌̌á:	-nà:	t̃θ'áj:
Group 3	Hupa	k̥aŋ-	-an-	
	Mattole		-an-	
	Galice			
	Ahtna	k̥a:n	-a:n	ts'u:j
	Tanaina	k̥un	-un	ts'ix̣
	Upper Kuskokwim	t̃ʃ̌̌̌̌	-oŋ̌	ts'ija
	Eyak	-k̥a: "abortion"	-a:	ts'ijux̣

Table 1: Non-Constricted full-vowel stems: open or closed with plain sonorant

Group	Proto-Athabaskan	man's grandchild *-tsu:jə	heart *-d̄ʒwe:jə'
Group 1	Kutchin	-kió:j	-dri:'
	Han	-t̄θú:	-drè:'
	Dogrib	-kwí	-ʒé'
	Southern Tutchone	-θúá	-zé'
	Tagish		-ʒéè'
	Tahltan		-ʒé:'
	Sekani		-ʒí:je'
	Sarcee	-súwá	-ʒaʏ-
	Navajo	-tsóí	-d̄ʒéí -d̄ʒéí -d̄ʒé:'
Group 2	Northern Tutchone	-t̄θùà	-ʒí'
	Kaska	-t̄ʃùə	-ʒéá' -ʒèá'
	Hare	-fi	-ʒíe'
	Mountain		
	Bearlake		-ʒèé'
	Slavey		-ʒèé'
	Beaver		-ʒé'
	Dëne Sułine	-t̄θùjè	-ʒìjé
	Chilcotin	-ĉùj	-ʒì
Tanacross	-t̄θù:j:	-ʒéj:'	
Group 3	Hupa	-tso:j	-d̄ʒe:j'
	Mattole	-tsoi	-d̄ʒi:je'
	Galice		-si:je'
	Ahtna	-tsu:je	-ʒe:j'
	Tanaina	-tsija	
	Upper Kuskokwim	-tsi-	-dʳaja'
	Eyak		

Table 2: Non-constricted full-vowel stems: closed with plain obstruent

		wife, female	river, sandbar	ochre	sand
Group	Proto-Athabaskan	*-ʔa:d	*de:ʃ ^w	*tʃi:x̣	*sa:x̣
Group 1	Kutchin	-ʔád		tsáj	xíh
	Han	-ʔáéd		tsáj	θáéh
	Dogrib		dé		-wá
	Southern Tutchone			sí	θá
	Tagish			tsí	sâ
	Tahltan				sâh
	Sekani			tsíh	
	Sarcee			tsíh -tsíhα'	
	Navajo	-ʔá:d		-tʃí:h	sáí -záí
Group 2	Northern Tutchone	-ʔà:d		tsì	θè
	Kaska				-zà
	Hare	-ʔà ^h	dièh -díe'	sìh	wà
	Mountain		dèh		
	Bearlake		dèh -dèé'		Wà
	Slavey		dèh -dèhé'	tsìh	θà(h)
	Beaver				
	Dëne Sułine	-ʔà	dès	tsì	θàj
	Chilcotin	-ʔád			šàj
Tanacross	-ʔà:d	dè:s	tsàj	θà:j	
Group 3	Hupa	-ʔad			-sa:j'
	Mattole				-tsaj'
	Galice	-ʔah			saj
	Ahtna	-ʔa:d	de:s	tsi:s	sa:s
	Tanaina	-ʔu	daʃ	tsix̣	suy
	Upper Kuskokwim	-ʔot		tsiʃ	soʃ
	Eyak	-ʔehd	dehd̥ʒ		

Table 2: Non-constricted full-vowel stems: closed with plain obstruent

Group	Proto-Athabaskan	metal, knife *we:ʃ ^w	coat, shirt *ʔe:ḡ	rope *tʰu:ʃ
Group 1	Kutchin		ʔig	tʰíah -tʰía:ʔ
	Han		ʔég	tʰíúh -tʰíù:ʔ
	Dogrib	mbé	ʔé	tʰí -tʰí
	Southern Tutchone	mbár	ʔór -ʔàrʔ	tʰél
	Tagish	mbés -mbézéʔ	ʔéʃ -ʔédʒéʔ	tʰíúʃ -tʰíúleʔ
	Tahltan			tʰíúʃ -tʰíúleʔ
	Sekani	bés -bézèʔ		
	Sarcee	más -mázàʔ		tʰíúʃ -tʰíúlaʔ
	Navajo	bé:ʃ -bé:dz	ʔé:ʔ -ʔé:ʔ	tʰíó:ʃ -tʰíó:l
Group 2	Northern Tutchone		ʔjá:g	tʰíjáv -tʰíjávʔ
	Kaska	bès -bèsáʔ	ʔèdʒ -ʔèdʒéʔ	tʰíùʃ -tʰíùléʔ
	Hare	bièh -bieʔ	ʔè ʔiè -ʔieʔ	tʰíù ^h -tʰíùléʔ
	Mountain	mbèh -mbèéʔ		tʰíùh
	Bearlake	bèh -bèéʔ	ʔèh -ʔèéʔ	tʰíùh -tʰíùléʔ
	Slavey	mbèh -mbèhéʔ	ʔèh -ʔèéʔ	tʰíùh -tʰíùhéʔ
	Beaver	bès -bèzéʔ		tʰíùh -tʰíùléʔ -tʰíùléʔ
	Dëne Sułine	bès -bèséʔ	ʔi -ʔihé	tʰíùʃ -tʰíùléʔ
	Chilcotin			tʰíùʃ -tʰíùl
	Tanacross		ʔè:g -ʔé:gʔ	tʰíù:ʃ -tʰíù:lʔ
Group 3	Hupa			tʰíohʃ -tʰío:lʔ
	Mattole			-tʰío:li
	Galice			
	Ahtna	bes-		tʰíu:ʃ -tʰíu:leʔ
	Tanaina	vaf-		tʰíiʃ
	Upper Kuskokwim			tʰíuʃ -tʰíu:laʔ
	Eyak		me:ḡʃ(-k)	-tʰíiʃ

Table 2: Non-constricted full-vowel stems: closed with plain obstruent

Group	Proto-Athabaskan	woman's child, young	eye	lower leg, shin
		*-ja:ʒ ^{wə}	*-ne:ĩə' *-na:ĩə'	*-ʒ ^w a:də'
Group 1	Kutchin	-zú:	-ndè:'	-d ^r id
	Han	-dzár:	-d̄ʒæw:'	-d ^r æ:'
	Dogrib	-já	-ndá	-ʒá
	Southern Tutchone	-ʏ ^r á	-ndàj'	
	Tagish		-ndá	-ʒádè'
	Tahltan		-dâ:'	
	Sekani			
	Sarcee		-nóyò'	
	Navajo	-já:dz	-ná:'	-d̄ʒá:d
Group 2	Northern Tutchone	-zrà	-ndá:g	
	Kaska		-dáá' -dàá'	-d̄ʒàdá'
	Hare	-jà -zà	-dá'	-ʒàrè
	Mountain			
	Bearlake	-jàà	-dàá'	-ʒàh-
	Slavey	-jàà	-ndàá'	-d̄ʒá:' -ʒa
	Beaver		-dè:' -dé:'	-ʒàdé'
	Dëne Sułine	-jàzè	-nàyá	-ʒàré
	Chilcotin	-jàz	-này	
Tanacross	-dzjà:z:	-ndá:y'	-ʒá:d:'	
Group 3	Hupa	-ja:W	-na:'	
	Mattole	-ja:x	-na:ge'	-d̄ʒa:de'
	Galice		-da:j'	-sa:de'
	Ahtna	-ja:ze	-ne:ge'	-ʒa:de'
	Tanaina	-juja	-naya	-d̄ʒada
	Upper Kuskokwim		-naya'	-d ^r oda'
	Eyak	-jahj	-la:x	-ġ ^w ədə- "rump"

Table 3: Non-constricted full-vowel stems: closed with glottalized obstruent

		(crusty) snow *tʃi:tʃʰ	scum, algae, moss *dʒa:tʰ	scab *ʃu:tʰ	diaper moss, cradle *ts'a:tʃʰ
Group 1	Kutchin	tsɪʃ	dʒɪd	ʃɪd -lɪd	k'il
	Han	tsúh		ʃúd	tʰ'éw
	Dogrib		dʒá	ʃí -lí	kʷá
	Southern Tutchone	sɪ		ʃɪd	tʰ'al
	Tagish	tsi:dʒ			
	Tahltan				
	Sekani				
	Sarcee	tsí:l	dʒá	lú' -lúdò'	ts'ál -ts'átʃ'ò'
	Navajo	tʃí:l	dʒá:d	ʃó:d	ts'ál
Group 2	Northern Tutchone	tsjàw	-dʒàd	ʃjàd	
	Kaska			ʃùd	
	Hare	-sih	dʒà	ʃùh -lúré'	'wà -'wáλέ'
	Mountain			ʃùh -lùré'	
	Bearlake	-tsih	dʒà	ʃùh -lùré'	kw'à -kw'ále'
	Slavey	tsih	dʒà	-lùdé'	tʰ'à(h)
	Beaver				ts'àdʒ
	Dëne Sułine	tsiʃ	dʒàr	ʃùr -ʃùré	tʰ'àl -tʰ'àlé
	Chilcotin			-lùd	
	Tanacross	tsí:dʒ	dʒà:d	ʃù:d -lú:d'	tʰ'àl -tʰ'à:dʒ'
Group 3	Hupa		ʃah	ʃù:d -lo:de'	
	Mattole		ʃoh	-lo:de'	
	Galice				
	Ahtna	tsi:tʃʰ		ʃu:tʰ	
	Tanaina	tʃi:tʃʰ	dʒut'	ʃit'	
	Upper Kuskokwim	tsitʃʰ	dʒot'		sotʃʰ
	Eyak				ts'a:tʃʰ

Table 3: Non-constricted full-vowel stems: closed with glottalized obstruent

Group	Proto-Athabaskan	spit *ʃ ^w e:q'	nostril *-ni:k'ə'	fish *ʃu:q'ə *ʃu:q'e:
Group 1	Kutchin	s'íḡ	-ndz'íg	ʃúḡ
	Han	s'é(w)' -z'èw:		ʃú -lù:'
	Dogrib	sé		ʃúé ʃí
	Southern Tutchone	-dzé		ʃú
	Tagish		-níḡe	ʃúḡe
	Tahltan			ʃúé
	Sekani			ʃúwè -lùwè'
	Sarcee	z'áj -z'ák'ǎ'		ʃuk'á
	Navajo	ʃé:' -dzé:'	-ní:'	ʃó:' -ló:'
Group 2	Northern Tutchone	-zjà:g		ʃjòḡ
	Kaska	-dzèḡó		ʃùḡə
	Hare	sèh -z'éḡé'		lùḡè -lúḡé'
	Mountain			ʃùè
	Bearlake	-zé'		ʃùè
	Slavey	-zéh -z'èé'	-nì _e	ʃùè -lùé'
	Beaver			ʃúḡe -lùḡé'
	Dëne Sułine	sèy -z'èy'é	-nìjè	ʃùwè
	Chilcotin	-zì	-nìj	ʃùj
Tanacross	sè:g -s'é:g'	-ndì:g:	ʃù:g:	
Group 3	Hupa	ʃe'q' -ʃe:q'e'		ʃo:q' -lo:q'e'
	Mattole	ʃj'x		ʃo:k'e
	Galice	-se:k'e'		ʃo:k'e:
	Ahtna	se:'		ʃuq'e:
	Tanaina	ʃaq' -dzaq'a	-niḡ'	ʃiq'a
	Upper Kuskokwim	s'ak' -z'ak'a'	-nij'	ʃuk'a
	Eyak	ʃahG "slime"	-ni:k' "nose"	

Table 3: Non-constricted full-vowel stems: closed with glottalized obstruent

Group	Proto-Athabaskan	guts * $\widehat{tʃ'i:k'ə}$	ribs * $\widehat{kɑ:nq'ə}$	navel * $\widehat{ts'e:q'ə}$
Group 1	Kutchin	-ts'ig	-tsig	
	Han	-ts'iw -ts'iw'	-tʃà:	
	Dogrib	-ts'í	-tʃó	
	Southern Tutchone	-ts'í'		
	Tagish	-ts'íjè	-tʃággè'	
	Tahltan			
	Sekani		-tsòwè'	
	Sarcee		-tʃák'ǎ'	-ts'ók'ǎ'
	Navajo	-ts'í:	-tsá:	-ts'é:
Group 2	Northern Tutchone	-ts'ig		
	Kaska	-ts'íǎ -ts'íǎ'	-tʃǎyǎ'	-ts'úgǎ' -ts'ùgǎ'
	Hare	-ts'íjé' -ts'íjǎ'	-ʃùgé' -ʃógé'	
	Mountain		-tʃòó'	
	Bearlake	-ts'íé'	-tʃòó'	-k ^w èé'
	Slavey	-ts'íjé'	-tʃò-	
	Beaver		-tʃùgé'	
	Dëne Sułine	-ts'íjé'	-tʃǎyǎ'	-tθ'ǎyé
	Chilcotin	-ts'ì	-tʃǎnj	-č'ì
	Tanacross	-ts'í:g'		(-ts'ùk'é)
Group 3	Hupa	-tʃ'e:k'e'		-ts'e:q'
	Mattole			-ts'e:(x)
	Galice	-tʃ'i:tʃ'e'		
	Ahtna	-tʃ'i:ge'	-kɑ:Ge'	
	Tanaina	-tʃ'ik'a	-kɑq'a	
	Upper Kuskokwim		-tʃok'a'	(-ts'uk'a)
	Eyak			-ts'a:

Table 4: Non-constricted reduced-vowel stems: closed with plain sonorant or obstruent

Group	Proto-Athabaskan	ice *tən	bone *tsən	stick, base *kən
Group 1	Kutchin	tán	t̄θ'án -t̄θ'àn	-t̄ʃán -t̄ʃàn
	Han	tán	t̄θ'an -t̄θλn:'	-t̄ʃán -t̄ʃλn:'
	Dogrib	tó	-k ^w ò	t̄ʃí -t̄ʃì -sì
	Southern Tutchone	tán	t̄θ'ón -t̄θ'ón'	-ʃón
	Tagish	tán	ts'ón -ts'ónè'	-t̄ʃón -tsónè'
	Tahltan	tən -tónè'	ts'ón -ts'ónè'	-t̄ʃən -tsənè'
	Sekani	tən	-ts'ónè'	-t̄ʃín -t̄ʃine
	Sarcee		-ts'inà'	-t̄ʃí -t̄ʃinà'
	Navajo	tìn	ts'in -ts'in -ts'i:n	tsìn -tsìn -tsì:.' -tsì:n
Group 2	Northern Tutchone	tàn	-t̄θ'án'	-t̄ʃàn
	Kaska	tən	-ts'ənè' -ts'ónè'	-t̄ʃən -t̄ʃənè'
	Hare	tè -téné'	-'wéné'	-ʃì -ʃéné'
	Mountain		-p'éné'	-t̄ʃì -t̄ʃiné'
	Bearlake	tè -tènè'	-kwènè'	-t̄ʃì -t̄ʃiné'
	Slavey	tè	-t̄θ'ènè' -t̄θ'èná'	-t̄ʃì -t̄ʃiné'
	Beaver	tən	-ts'ənè'	-t̄ʃən -t̄ʃənè'
	Dëne Sułine	tən	t̄θ'àn -t̄θ'àné	-t̄ʃin -t̄ʃiné
	Chilcotin	tən	-t̄ʃ'àn	-t̄ʃən
	Tanacross	tàn	t̄θ'àn -t̄θ'án:'	-t̄ʃàn
Group 3	Hupa		ts'ij -ts'ij' -ts'ine'	k̄ij -k̄in' -k̄ine'
	Mattole			t̄ʃij
	Galice		ts'an -ts'ade'	t̄ʃan
	Ahtna	ten	ts'en -ts'ene'	k̄en -k̄ene'
	Tanaina	tən	ts'ən -ts'əna	k̄ən -k̄əna
	Upper Kuskokwim			
Eyak		ts'əl -ts'əlih	-k̄ih	

Table 4: Non-constricted reduced-vowel stems: closed with plain sonorant or obstruent

		lake	trail	cloud
Group	Proto-Athabaskan	*w̃ən(q'ə)	*təjə	*q'us
Group 1	Kutchin	ván̩ -vàn	táj̃: -táj̃:	k'óh
	Han	mλn	táj̃(:)	k'óh
	Dogrib		-t̩	k'ó
	Southern Tutchone	mán	tón -tón	k'úg
	Tagish	mán	tóne	k'wás
	Tahltan	məŋ -mánè'	tóne	k'os
	Sekani	-mánɣe	-tóne	k'wəs
	Sarcee		-tən̩	k'os
	Navajo		-t̩:n	k'òs
Group 2	Northern Tutchone	màn	tàn	k'ò
	Kaska	màn	-tènè	k'w̃əs k'ùs
	Hare		tènè	k'òh
	Mountain		t̩ -tené'	
	Bearlake		-tené'	k'òh
	Slavey	m̩̀(è)	tènè -tènè	k'òh
	Beaver	míngə mínk'e	-tènè	k'w̃əs
	Dëne Sułine		t̩̀ -tènè	k'òθ
	Chilcotin	bən̩j	-tèn	k'w̃əs̃
Tanacross	màn -mán:'	táj̃: -táj̃:	k'òθ	
Group 3	Hupa	m̩̀ŋq'	tin	
	Mattole		te:n̩j	
	Galice		tade:	
	Ahtna	ben	tene	q'os
	Tanaina	vən	tən	q'əs
	Upper Kuskokwim			
Eyak	ma:	ta:	q'ahs	

Table 4: Non-constricted reduced-vowel stems: closed with plain sonorant or obstruent

Group	Proto-Athabaskan	neck *-q'us	smoke *ʔəd	dry wood *tʃwədzw
Group 1	Kutchin	-k'óh	ʔád -làd	t'á: -t'à:'
	Han	-k'óh	ʔád -lò:'	t'ád -t'ò'
	Dogrib	-k'ó	ʔó	tsó
	Southern Tutchone	-k'ú		sár -sàr
	Tagish	k'wâs	ʔád	tsə́ʒ tsá́s
	Tahltan	-k'òs	ʔəd	tsə́ʒ -tsə́ʒè'
	Sekani	-k'wàs	ʔəd -ləde'	câz
	Sarcee	-k'os	ḍʒi -tʃidà'	
	Navajo	-k'òs	ʔid -lid	-tʃidz -tʃiz
Group 2	Northern Tutchone	-k'ò		tsò
	Kaska	-k'ùs		tsə̀s -tsə̀zə'
	Hare	-k'òh	lèh -léré'	sèh
	Mountain		ʔèh -lère'	
	Bearlake	-k'òh	ʔèh -lère'	tsèh -tsèle'
	Slavey	-k'òh	ʔèh -lède'	tsèh -tsèze'
	Beaver	-k'wəs	ʔəd	tsə́ʒ
	Dëne Sułine	-k'òḍ	ʔər	tsèz
	Chilcotin	-k'wə̀s	ʔád	
Tanacross	-k'òθ	ʔád -ʔád:'	tsàʒ tsáʒ:'	
Group 3	Hupa	-q'os	ʔid -lide'	tʃwídʒ
	Mattole	-k'os	ʔih	tʃij
	Galice	-k'was	ʔad	
	Ahtna	-q'os	ʔed	tseʒ
	Tanaina	-q'əs	ʔəd	tʃedʒ
	Upper Kuskokwim			
Eyak	-q'əs	ʔəhd	kʉg-	

Table 4: Non-constricted reduced-vowel stems: closed with plain sonorant or obstruent

Group	Proto-Athabaskan	ear * $\overline{d}zə\gammaə'$	anus * $\overline{tsə}lə$	fingernail * $\overline{la}:-G\alpha jə'$
Group 1	Kutchin	$\overline{d}zè:'$	$\overline{t\theta}ál$	$\overline{lè:g}àj'$
	Han	$\overline{z}àj:'$	$\overline{t\theta}áw:$	$\overline{l}áglj:'$
	Dogrib	$\overline{z}é-$		$\overline{l}ágl\grave{o}$
	Southern Tutchone	$\overline{z}àj'$	$\overline{\theta}ál$	$\overline{l}ágl\grave{a}n'$
	Tagish	$\overline{z}íglè'$		$\overline{l}agánè'$
	Tahltan			$\overline{l}agàne'$
	Sekani			$\overline{l}àgójè'$
	Sarcee	$\overline{z}i\gamma\grave{a}'$	$\overline{ts}íli$	$\overline{l}áglànà$
	Navajo	$\overline{z}à:'$	$\overline{ts}il$ "vulva"	$\overline{l}ájl\grave{a}:n$
Group 2	Northern Tutchone	$\overline{z}ág$	$\overline{t\theta}áw'$	$\overline{l}agán'$
	Kaska		$\overline{ts}əl\grave{a}$	$\overline{l}agàné$ $\overline{l}agáné$
	Hare	$\overline{z}í'$	$\overline{f}^{(w)}èlè$	$\overline{l}agúné'$
	Mountain			
	Bearlake	$\overline{d}zí'$	$\overline{k}^wèlè$	$\overline{l}agòné$
	Slavey	$\overline{d}zíe'$		$\overline{l}ag\grave{o}$
	Beaver	$\overline{z}àgé'$		$\overline{l}á:g'òné'$
	Déne Sułine	$\overline{z}à\gammaá$	$\overline{t\theta}èlè$	$\overline{l}agàné'$
	Chilcotin	$\overline{z}à\gamma$		
Tanacross	$\overline{z}à\gamma:'$ $\overline{z}á:\gamma:'$	$\overline{t\theta}àd\overline{l}z:$	$\overline{l}à:gáj:'$	
Group 3	Hupa	$\overline{d}ziw'$		
	Mattole			
	Galice	$\overline{s}aj$		
	Ahtna	$\overline{z}aye'$	$\overline{ts}el$	$\overline{l}a:Gané'$
	Tanaina	$\overline{d}zə\gamma a$	$\overline{ts}əl$	$\overline{l}uGəna$
	Upper Kuskokwim			
Eyak	$\overline{d}zəh\chi$ $\overline{d}zə\chiə-$			

Table 5(a): Constricted full-vowel stems: open

Group	Proto-Athabaskan	father *-ta'	head *-tsi'	foot *-qe'	beaver *tʃa'
Group 1	Kutchin	-tì'	-kì'	-kwàj'	tʃè:'
	Han	tʃæ'	-tθì'	-kè'	tsæ'
	Dogrib	-tà	-kwì	ké(-) -kè'	tsà
	Southern Tutchone	-tà'	-θì'	-kè'	sà' -sà'
	Tagish	-tà'	-tsì'	-kè'	tsa'
	Tahltan	-tà'	-tsì'	-kè'	tʃà' -tʃà?e'
	Sekani	-tà'	-tsì'	-kè'	tsá' -tsà'
	Sarcee	-tà'	-tsì'	-kà'	tsà -tsàα
	Navajo	-tà:'	-tsì:'	-kè:'	tʃà:' -tʃà:'
Group 2	Northern Tutchone	-té'	-tθì'	-kí'	tsé'
	Kaska	-tá'	-tsí'	-ké'	tsá'
	Hare	-tá'	-f(w)í'	kiè -kíe' -ké'	sá'
	Mountain	-tá'			tsá'
	Bearlake	-tá'	-kwí	kè -kèé'	tsá'
	Slavey	-tá'	-tθì'	kè -ké'	tsá'
	Beaver	-tá:'	-tsí:'	-ké:'	tsá:'
	Dëne Sułine	-tá	-tθí	-ké	tsá
	Chilcotin	-tá	-čí	-kí	tsá
	Tanacross	-tá'	-tθì'	-ké'	tsá' -tsá:'
Group 3	Hupa	-ta'	-tse-	-xe'	tʃ ^w a'
	Mattole	-ta'	-tsi'	-ke'	
	Galice	-ta'	-si'	-ke'	sa'-
	Ahtna	-ta'	-tse'	-qe'	tsa'
	Tanaina	-tu-	-tsi	-qa'	tʃu
	Upper Kuskokwim				
	Eyak	-ta:'	-tsi' "neck"	-qi:-	

Table 5(a): Constricted full-vowel stems: open

Group	Proto-Athabaskan	louse	arrow	man's daughter
		*ja'	*q'a'	*-tseʔə
Group 1	Kutchin	dzi'	k'i' -k'i'	-ki' (?)
	Han	dzæ'	k'æ' -kæ:'	-tθè'
	Dogrib	dzà	k'i'	
	Southern Tutchone	jà' -jà'	k'à'	-θíá
	Tagish	dzà'	k'a' -k'æ	-tsíʔè
	Tahltan	jà' -jà'e'		
	Sekani	jà' -jà'	k'â:' -k'à'	
	Sarcee	jà' -jà'		
	Navajo	jà:' -jà' -jà:'	k'à:' -k'à' -k'à:'	-tsi'
Group 2	Northern Tutchone	dzé'	k'é'	-tθi(à)
	Kaska	já' -jáó'	k'á'	
	Hare	já'	k'á'	-fiè
	Mountain			
	Bearlake	já'	-k'á'	-k ^w éè
	Slavey	já'		
	Beaver	já:'		
	Dëne Sułine	já'	k'á -kái	
	Chilcotin	já'	k'á	-čí
Tanacross	ʃjá' -ʃjä:'	k'á' -k'ä:'		
Group 3	Hupa	ja' -ja' -ja:'	-q'a'	-tse:'
	Mattole	ja'-	k'a'	-tsi:je'
	Galice	ja'		-si:ʔe(:)
	Ahtna	ja'	q'a'	-tseʔe
	Tanaina	-əju	-q'u	-tsəʔa
	Upper Kuskokwim			-tsəʔa
	Eyak			-tsi:j

Table 5(b): Constricted full-vowel stems: sonorant -closed

Group	Proto-Athabaskan	leaf *-t'a:n(ə)'	roe *q'u:n'	excrement *tʃ ^w a:n'
Group 1	Kutchin	-t'àn'	-k'ið'	tʃ ^w á' -tʃ ^w ín'
	Han	-t'λn:'	k'ð' -k'ð'	tʃ ^w à' -tʃ ^w àn:'
	Dogrib	-t'ò	-k'ì	tsò sò
	Southern Tutchone	-t'áì'	k'jù'	sà'
	Tagish	-t'áne'	k'ùn' -k'únè'	tsá' -tsàne'
	Tahltan	-t'áne'		
	Sekani	-t'ò'		
	Sarcee		k'ú -k'únà'	tsà -tsànà'
	Navajo	-t'à:'		tʃ ^w à:' -tʃ ^w à:n
Group 2	Northern Tutchone	-t'èn -t'ànó'	k'ún'	tsén' -tsá:n'
	Kaska	-t'óne	-k'únó' -k'ùnó'	tsó tsónó'
	Hare	-t'ó'	k'ó' -k'úé'	só' -sóné'
	Mountain			
	Bearlake	-t'ó'	k'ú' -k'úé'	tsó -tsóné'
	Slavey	-t'ó'	-k'úé'	tsó -tsóné'
	Beaver	-t'ó:'		
	Dëne Sułine	-t'á	-k'úné	tsá -tsáné
	Chilcotin	-t'án	k'ún	
	Tanacross	-t'á:' -t'á:n:'	k'ú:' -k'ú:n:'	tsá:' -tsá:n:'
Group 3	Hupa	-t'aŋ'	q'oŋ'	tʃ ^w aŋ' -tʃ ^w a:n'
	Mattole	-t'aŋ'		-tʃ ^w a:ne'
	Galice	-t'a'		-ʃa:ne'
	Ahtna	-t'a:n'	q'u:n'	tʃ ^w a:n' -tʃ ^w a:ne'
	Tanaina	-t'un	q'in	tʃ ^w un -tʃ ^w una
	Upper Kuskokwim			
	Eyak	-t'ah-ł	q'əma:-q'u'	

Table 5(b): Constricted full-vowel stems: sonorant -closed

Group	Proto-Athabaskan	arm *-Ga:nə'	woman's grandchild * k a:ʔə	father's brother *-ta:ʔə
Group 1	Kutchin	-gìn'	-tʃé:j:	-tí:
	Han	-gàen'	-tʃáj:	-táj:
	Dogrib	-gò	-tʃà	
	Southern Tutchone	-gàn'	-ʃéá	-táj'
	Tagish	-gàne'	-tʃáə	-tâ:ə
	Tahltan	-gàne'		
	Sekani	-gòne'		
	Sarcee	-gàndə'	-ʃiyá	
	Navajo	-gà:n		
Group 2	Northern Tutchone	-gá:n	-tʃéà	-tájà
	Kaska	-gá:nə' -gà:nə'	-tʃáə	-táj -táə
	Hare	-góné'	-jà	-tə
	Mountain			
	Bearlake	-góné'	-tʃáà	-tájà
	Slavey	-gó'		
	Beaver	-góné'		-tʃè:
	Dëne Sułine	-gané	-tʃájè	
	Chilcotin	-gán	-tʃáj	
	Tanacross	-gá:n'	-tʃá:j'	-táj: (?)
Group 3	Hupa	-Gan-	-ka:j	-ta:j
	Mattole	-ga:ne'	-tʃai	
	Galice	-ga:ne'	-tʃa:je:	
	Ahtna	-Ga:ne'	-ka:j	-ta:j
	Tanaina	-Guna	-ku:ja	-tu:ja
	Upper Kuskokwim	-gona'	-tʃoja	-toja
	Eyak	-Gəla' "shoulder"		-tɬh

Table 6: Constricted full-vowel stems: closed with plain obstruent

Group	Proto-Athabaskan	flour *t̥e:’d̥ʒ	mat *te:’t̥	mouth *-za:’d	younger sister *-de:’d̥ʒə(’)
Group 1	Kutchin	t̥ùh -lu:’	t̥ʃiàh		-d̥ʒù:’
	Han	t̥èw -lèw:’	t̥ʃèw -t̥ʃèw’	-ðæd	-d̥ʒèw:’
	Dogrib	t̥è	t̥è	-wà	-dè
	Southern Tutchone	t̥àr	t̥ʃl̥l’	-ðàd	-d̥ʒùá
	Tagish	t̥ès -léze’	t̥èt̥ -t̥élé’	-zàde’	-dèzé
	Tahltan	t̥ès		-zàd -zàde’	-dèse
	Sekani			-zà’	
	Sarcee	t̥às -t̥àzà’	t̥àt̥ -t̥àlà’	-zà’	-dàzà’
	Navajo	t̥è:dz -lè:dz	t̥è:t̥ -t̥è:t̥	-zà:d	-dè:dzi
Group 2	Northern Tutchone	t̥jó’	t̥já’		-djó’
	Kaska	t̥éh	t̥é t̥ -t̥élé’	-ðá’ -zàdè	-dézó’
	Hare	t̥éh-	t̥íe’ -t̥élé’	-wá’	-díe
	Mountain				
	Bearlake	t̥éh-	t̥éh -t̥élé’	-wá’	-dée’
	*Slavey	t̥éh-	t̥é’	-ðá’	-dée’
	Beaver	t̥éze		-zá:’	-d̥ʒéd̥ʒé’
	Dëne Sułine	t̥éz -lé:z:’	-t̥élé	-ðá	-dézé
	Chilcotin				-díz
Tanacross		t̥é:t̥ -t̥é:l:’	-ðá:	-déz:z:’	
Group 3	Hupa	ɬiW		(-sah)	-dehd̥ʒ
	Mattole	t̥e:ʃ		(-sa-)	-de:’d̥ʒe’
	Galice			(-sa:-)	-de:se’
	Ahtna	t̥e:ʒ	te:t̥	-za:	-de:ze’
	Tanaina	t̥ad̥ʒ	ta:t̥	-ju	-dad̥ʒa
	Upper Kuskokwim		ta:t̥	-zo	-daza’
	Eyak		te:t̥	-sa’ -d	

Table 7: Constricted full-vowel stems: closed with glottalized obstruent

Group	Proto-Athabaskan	pitch *d̄ʒe:ʔ̄	sinew *ts'e:ʔ̄
Group 1	Kutchin	ʒih	k'ih
	Han	ʒèh -ʒè:'	t̄θ'èh -t̄θ'è:'
	Dogrib	ʒè	kʷ'é
	Southern Tutchone	-dzè'	t̄θ'è'
	Tagish	ʒè -ʒègè' -ʒégè'	ts'è -ts'ègè'
	Tahltan		
	Sekani		-ts'èhè'
	Sarcee	ʒàh -ʒàhà'	ts'àh -ts'áhà'
	Navajo	d̄ʒè:h -d̄ʒè:h	
Group 2	Northern Tutchone	ʒí' -ʒí'	t̄θ'í'
	Kaska	ʒéx ʒéh	ts'éh
	Hare	ʒíeh -ʒégé'	'wíe' 'wíeh-
	Mountain		p'éh -p'ée'
	Bearlake	ʒéh -ʒélé'	kʷ'éh -kʷ'ée'
	Slavey	ʒéh -ʒée'	t̄θ'éh -t̄θ'é(h)é'
	Beaver	ʒéh -ʒèhé'	ts'íh -ts'éhé'
	Dëne Sułine	ʒé -ʒèyé	t̄θ'é -t̄θ'é
	Chilcotin	ʒáx	č'áx
	Tanacross	ʒé:x -ʒé:y:'	t̄θ'é:x -t̄θ'é:y:'
Group 3	Hupa	d̄ʒeh -d̄ʒe:w'	ts'e' (?)
	Mattole	d̄ʒeh	ts'eh
	Galice	seh	ts'eh
	Ahtna	ʒe:x	ts'e:x
	Tanaina	d̄ʒax	ts'ax
	Upper Kuskokwim	ʒax -ʒaya'	-ts'ax
	Eyak	ġahG	

Table 8: Constricted reduced-vowel stems: closed with glottalized sonorant or obstruent

Group	Proto-Athabaskan	star		husband	handle, bow
		*tsə'w'	*sə'w'	*-qɑ'j'	*-tə'j'
Group 1	Kutchin		sà'	-kàj'	-tàj'
	Han		sà'	-kàj'	-tàj'
	Dogrib		Wò'		
	Southern Tutchone		θjàwl'		-tʃì'
	Tagish		sùn'		-tì'
	Tahltan		sun'		
	Sekani		səm	-kà-	
	Sarcee		sùh	-kà-	
	Navajo		sò' -zò'	-kà'	-tì:'
Group 2	Northern Tutchone		θján'		-tín'
	Kaska		sún'		-tì'
	Hare		wé' -wéné'		-tì'
	Mountain		fé'		
	Bearlake		Wé' -wéné'		-tì'
	Slavey		θé'		-tìh
	Beaver		són'		
	Dëne Sułine		t̃θán		-tì -tín
	Chilcotin		šón	-kón	-tín
	Tanacross		sán'	-káj'	-tì:'
Group 3	Hupa		tsiŋ'	-xaŋ'	
	Mattole		tsiŋ'		-tiŋ'
	Galice		san'	-kan'	-tì'
	Ahtna		son'	-qan'	-ten'
	Tanaina		səm	-qən	-tən
	Upper Kuskokwim				
	Eyak			-qa'	-te'

Table 8: Constricted reduced-vowel stems: closed with glottalized sonorant or obstruent

Group	Proto-Athabaskan	flesh * <i>-tsəj'</i>	fire * <i>qʊ'n'</i>	knee * <i>-Gu't'</i>
Group 1	Kutchin	- <i>t̃θàj'</i>	kò' -kò'	-g ^w àd
	Han	- <i>t̃θì'</i>	k ^w λn' -kòn:' kò'	-gòd
	Dogrib	-k ^w ò'	kò(')	-gò
	Southern Tutchone	-θə̀n'	k ^w ə̀n'	-g ^w ə̀d
	Tagish	-tsə̀n'	k ^w ə̀n'	-g ^w ə̀d
	Tahltan	-tsə̀n'	kùn' -kune'	-gud
	Sekani	tsən -tsə̀ne'	k ^w ən	-g ^w ə̀de'
	Sarcee		ku:' -kùnə̀'	
	Navajo	-tsì'	kò' -kò'	-gòd
Group 2	Northern Tutchone	- <i>t̃θán'</i>	k ^w án'	-g ^w ád
	Kaska	-tsón'	kún'	-gúd
	Hare	-fɛ́'	kó' -kóné'	-gó'
	Mountain	-pɛ́'	kó' -kóné'	
	Bearlake	-k ^w ɛ́'	kó' -kóné'	-gó'
	Slavey	- <i>t̃θɛ́'</i>	kó'	-gó'
	Beaver	-tsón	k ^w ón	-g ^w əd
	Dëne Sułine	- <i>t̃θón</i>	kún	-gór
	Chilcotin	-ĉón	k ^w ón	-g ^w ád
	Tanacross	- <i>t̃θí.ɬ'</i>	kón'	-gód
Group 3	Hupa	-tsin'	xoŋ'	-Got'
	Mattole		koŋ'	-goʔ
	Galice		k ^w an'	-g ^w aj'
	Ahtna	-tsen'	qon'	-Go'd
	Tanaina	-tsən	qən	-Gət'
	Upper Kuskokwim			-gut'
	Eyak	-tse'	qu:-	-Guhd

Table 8: Constricted reduced-vowel stems: closed with glottalized sonorant or obstruent

Group	Proto-Athabaskan	belly *-wə't'	liver *-zə't'	cane *tə'ts'
Group 1	Kutchin	-vəd	-ðəd	tòh -tò:'
	Han	-bəd	-ðəd	tád -tò:'
	Dogrib	-mò(')	-wò(')	tè
	Southern Tutchone	-mbəd	-ðəd	tə'
	Tagish	-mbəd	-zəd	-təʒe
	Tahltan	-bəd	-zəd	
	Sekani	-bəd		
	Sarcee	-mì'	-zì'	tis -tìsà'
	Navajo	-bìd	-zìd	
Group 2	Northern Tutchone	-mbád	-ðád	tó'
	Kaska	-bád	-zád	tás
	Hare	-bé'	-wé'	té' -téwé'
	Mountain			
	Bearlake	-bé'	-wé'	téh -télé'
	Slavey	-mbé'	-ðé'	téh -téé'
	Beaver	-bád -bát'	-zád -zát'	-tásé'
	Dëne Sułine	-bár	-ðár	táθ -táðé'
	Chilcotin	-bád	-zád	
Tanacross	-mád	-ðád	taθ -táð:'	
Group 3	Hupa	-mit' -mədə'	-sit'	tits'
	Mattole	-bi'ɬ	-tsi'ɬ	
	Galice	-baj'	-sa'ɬ	
	Ahtna	-be'd	-ze'd	tets'
	Tanaina	-vət'	-zət'	
	Upper Kuskokwim	-mət'	-zət'	
Eyak	-wət' "belly, vomit"	-sahd		

Table 8: Constricted reduced-vowel stems: closed with glottalized sonorant or obstruent

Group	Proto-Athabaskan	grandfather * -tʃə'jə	fox * na:Gə'ts'ə	younger brother * -kə'tʃə
Group 1	Kutchin	-tsí:	nè:Gó:	- tʃá:
	Han	-tsáj: -tsəj: -tsǎj:	nàgò	- tʃó:
	Dogrib	-tsè	nògé	- tʃí
	Southern Tutchone	-sì' -sijá		- ʃó lá
	Tagish	-tsié		- tʃə lá
	Tahltan			
	Sekani	-tse		- ʃí dʒè
	Sarcee	-siya		- ʃí tʃá
	Navajo	- tʃèi		-tsilí:
Group 2	Northern Tutchone	-tsí'		- tʃəw(à)
	Kaska	-tsíə		- ʃilè -tʃə dʒə ?
	Hare	-siè		- ʃilè
	Mountain			
	Bearlake	-tséè	nògérè	- tʃilè
	Slavey	-tsíè	nògéè	- tʃèè
	Beaver	-tsa:		- tʃí dʒi
	Dëne Sułine	-tsíjè	nàgáðè	- tʃilè
	Chilcotin	-tsí	nandʒáz	- tʃəl
	Tanacross	-tsáj:	ná:gáð	
Group 3	Hupa	- $\text{tʃ}^w\text{iwe}$		- kəl
	Mattole	- tʃowi		- tʃe:l
	Galice			- tʃa:le:
	Ahtna	-tsije	naGets'i	- kəle
	Tanaina	- tʃəja	naGəza	- kəla
	Upper Kuskokwim		nogəts'a	- tʃəla
	Eyak		nahGəts'e:	

Table 8: Constricted reduced-vowel stems: closed with glottalized sonorant or obstruent

Group	Proto-Athabaskan	land *jə'n' *-jə'nə'	mitts *ḡə'tʃ ^w *ḡədʒ ^w
Group 1	Kutchin		ḡúr ʒír -ʒír'
	Han	nán -nàn'	ládʒí
	Dogrib	ndè ndé -nè -né	
	Southern Tutchone		
	Tagish		
	Tahltan		
	Sekani		
	Sarcee		ʒis
	Navajo	nì' -nì'	-ḡʒìʃ
Group 2	Northern Tutchone		
	Kaska	-níʃ'	
	Hare	nè -néné'	làḡʒì
	Mountain		
	Bearlake	nè -néné'	
	Slavey	ndéh -ndéé'	
	Beaver		
	Dëne Sufine	nón ní -nóné	-ḡʒəs(é)
	Chilcotin	nón	
Tanacross			
Group 3	Hupa	nin' -ni'ne'	
	Mattole		
	Galice	-na'nde'	
	Ahtna	nen' -nene'	ḡets'
	Tanaina	nən -nəna	-ḡətʃ'
	Upper Kuskokwim		-ḡətʃ ^w
	Eyak	?əh	

Alternations

Krauss	IPA	Notes
y	j	
V·	V:	
c	\widehat{ts}	
č	$\widehat{tʃ}$	
š	ʃ	
x̣		In the IPA, the symbol under the x means "syllabic".
ḳ		In the IPA, the symbol under the k means "non-syllabic".
ʒ	dʒ	
ž	dz	Originally, thought it was ʒ, but Krauss also uses these in his orthography.
t ⁰	t ⁰	
ʒ with an over-dot		Krauss mentions that a c with an over-dot indicates that he isn't sure exactly what "type" of c is is. Same here?
ĉ		
W		Like a capital C and V, it could be a symbol used to mean any type of glide
x̣		
ḡ		
λ	\widehat{dl}	dl
λ	$\widehat{tʃ}$	tʃ
š		
ž		Krauss mentions that a c with an over-dot indicates that he isn't sure exactly what "type" of c is is. Same here?
y with an inverted breve above		
$\widehat{tʃ}$ with a breve underneath		
š		
z with a circumflex like the c above		

See Mithun, Marianne. 1999. *Languages of Native North America*. p viii for correspondence tables