

Sergei Nikolayev
(Institute of Slavic Studies, Russian Academy of Sciences)

TOWARDS AN IMPROVED RECONSTRUCTION OF PROTO- NA-DENE

This report is based on material included in the Na-Dene etymological database («nadenet.dbf», available from the author upon request in StarLing format.)

The reconstruction of Proto-Na-Dene is based on comparison of three groups of languages: 1) Tlingit dialects, 2) Eyak and 3) Athabaskan languages (PA = Proto-Athabaskan). Eyak and the Athabaskan languages are close to each other and are traced back to the intermediate Proto-Eyak-Athabaskan language (PEA). An intermediate PEA reconstruction will not be used below, since the sound correspondences between Eyak and PA are presentable within a common PND system.

The regular phonetic correspondences between Eyak and PA have been reliably established by M. Krauss and J. Leer, including the very complicated correspondences between sonorants (Krauss, Leer 1981).

Main sound correspondences.

Obstruents

$d = [t]$, $*t' = [t']$, $*t = [t^h]$ and so on.

Na-Dene	Athabaskan	Eyak	Tlingit	initial/medial
*T	*T	T	T	117/60
* λ	* λ	λ	λ	61/77
* λ^w	*C	C	λ	30/20
* \acute{C}	*C	C	\acute{S}	53/35
* C^w	*C	C	K ^(w)	35/17
*C	* \check{C}	\check{C}	C	23/9
* \check{C}	* \check{C}	\check{C}	\check{C}	60/51

*Č ^w	*Č = *Č ^w	K ^(w)	K ^(w)	47/8
*K̂	*K̂	K	K	45/26
*K̂ ^w	*K̂	K ^(w)	K ^(w)	65/48
*Q	*Q	Q	Q	113/51
*Q ^w	*Q ^(w)	Q	Q ^(w)	38/30

d = [t], *t' = [t'], *t = [t^h] and so on.

Na-Dene	PA	Eyak	Tlingit	
*d	*d	d	t-/d-, d	
*t'	*t'	t'	t'	
*t	*t-	t-	t-	

*λ

*Ł	*Ł, *Ł/ł	Ł-, dl/ł	λ-/Ł, Ł	4/8
*λ'	*λ'	*λ'	λ'	9/10
*λ	*λ-	λ-	λ-	15/-
*λ	*ł	ł	ł	20/34
*λ'	*λ'	λ'	ł'	13/25

*λ^w

*Ł ^w	*ɜ	ɜ	Ł-/λ-, Ł	1?/4
*λ' ^w	*c'	c'	λ'	5/3
*λ ^w	*c-	c-	λ-	8/-
*λ ^w	*s	s	ł	10/7
*λ' ^w	*c'	c'	ł'	7/6

*ć

*ǰ	*ɜ	ɜ	ɜ-/š-, ɜ	3/7
*ć'	*c'	c'	c'	6/4(?)

*č	*c-	c-	š-	12/-
*ś	*s	s	s-	16/5
*ś'	*c'	c'	s'	16/21

*č^w

*ž ^w	*ž = *ž ^w	g ^(w)	k ^(w) -/g ^(w) -, g ^(w)	12/4
*č' ^w	*č' = *č' ^w	k' ^(w) -	k' ^(w) -	8/-
*č ^w	*č = *č ^w	k ^(w) -	k ^(w) -	15/-
*ś ^w	*ś = *ś ^w	x ^(w) -	x ^(w) -	4/-
*ś' ^w	*č'	x' ^(w)	x' ^(w)	8/4

*c^w

*ž ^w	*ž	ž	g ^(w)	8/7
*c' ^w	*c'	c'	k' ^(w)	4/1
*c ^w	*c-	c-	k ^(w) -	11/-
*s ^w	*s	s	x ^(w) -	11/-
*s' ^w	*c'	c'	x' ^(w)	1/8

*č

*ž	*ž	ž	c-/ž-, ž	9/5
*c'	*č'	č'	c'-	2/-
*c	*č-	č-	c-/ž-	5/-
*s	*ś = *ś ^w	ś	s	7/4
*s' = *ś'				

*c

*ž	*ž	ž	č-/ž-, ž	11/12
*č'	*č'	č'	č'	15/1
*č	*č-	č-	č-	19/-
*ś	*ś = *ś ^w	ś	ś	19/19
*ś' = *s'	*č'	č'	s'	15/19

*sw (?)	*š-	x-	s-	1
*św (?)	*ǰ-	x-	š-/s-	2

*g

*ǰ	*ǰ	g	k/g	14/10
*k'	*k'	k'	k'	4/6
*k	*k-	k-	k-	14/-
*ǰ	*ǰ	x	x	9/3
*ǰ'	*k'	k'	x'	4/7

*g^w

*ǰ ^w	*ǰ	g ^(w)	k ^(w) -/g ^(w) -, g ^(w)	18/18
*k' ^w	*k'	k' ^(w)	k' ^(w)	5/12
*k ^w	*k-	k ^(w) -	k ^(w) -	18/-
*ǰ ^w	*ǰ	x ^(w)	x ^(w)	17/6
*ǰ' ^w	*k'	k' ^(w)	x' ^(w)	7/12

*G

*G	*G	G	G-/q-, G	32/19
*q'	*q'	q'	q'	6/5
*q	*q-	q-	q-	22/-
*ǰ	*ǰ	ǰ	ǰ	15/13
*ǰ'	*q'	q'	ǰ'	15/13

*G^w

*G ^w	*G ^(w)	G	G ^(w) -, G ^(w) /g ^(w)	7/8
*q' ^w	*q' ^(w) -	q'-	?	1(?)/1(?)
*q ^w	*q ^(w) -	q-	q ^(w) -	11/-
*ǰ' ^w	*q' ^(w)	q'	ǰ' ^(w)	5/14
*ǰ ^w	*ǰ ^(w)	ǰ	ǰ ^(w)	15/8

*ʔ	*ʔ-	ʔ-	ʔ-
*h	*h-	ʔ-	h-
*h ^w (? *f)	*h-	w-	h-
*ʔ ^w (? < q ^w)	*w-	w-	ʔ-

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*λ ^w	*C	C	λ	30/20
*Ć	*C	C	š	53/35
*C ^w	*C	C	K ^(w)	35/17
*C	*Č	Č	C	23/9
*Č	*Č	Č	Č	60/51
*Č ^w	*Č = *Č ^w	K ^(w)	K ^(w)	47/8
*K	*K	K	K	45/26
*K ^w	*K	K ^(w)	K ^(w)	65/48
*Q	*Q	Q	Q	113/51
*Q ^w	*Q ^(w)	Q	Q ^(w)	38/30

0. The plain consonants are neutralized in Tlingit in word-final position and in clusters. There are 2 variants of the (morpho)phonological notation in the works by J. Leer: one with aspirated obstruents according to phonetics (duq - duGu) and another with the plain ones according to phonology (duG - duGu). The Tlingit vocabularies give the plain forms. In this work the 1st variant prevails, because it is presented in the main source of Tlingit (Leer 1975) and in the vocabularies published. On the contrary, I cite the phonemes in the comparative tables (/G/ in this case).

1. See PA reconstructions in CAL. The Eyak-PA correspondences of obstruents were once interpreted by Krauss & Leer, and their interpretations remain unchanged. The

complexity of the development of root codas and the secondary root forms in main Athabaskan languages often makes their reconstruction problematic, when the material of the languages with stable word coda is absent. Eyak is helpful thanks to the integrity of the root coda consonants.

2. My interpretation of numerous series of front, lateral and palatal affricates/spirants is quite provisional. Only *k^w- and *ʃ-series can be considered as established. The *c^w-series is reconstructed based on the fact that Tlingit has here the labiovelar reflexes *k^w (> k/k^w, with a fluctuation of the labialization, also observed in the other labialized series). The *ʃ^w-series, in which the PEA sibilants correspond to the Tlingit laterals, is reconstructed on the principle of "what else to do with it?". There is no special ground why one should reconstruct here namely the laterals, moreover, labialized ones. J. Leer considers the Tlingit laterals, according to the PEA sibilants, as the result of a "lateralization" of the latter by a *l/t*-classifier, but the prefixes do not explain *ʃ^w-series in the middle of the words. There remains hope that an external comparison may solve the riddle. (NB: the interpretation of the front affricate/spirant series in Proto-Non-Caucasian is not less problematic).

The complexity of the sound correspondences between Tlingit and Proto-Eyak-Athabaskan aroused a suspicion that Na-Dene is "a portmanteau language family" (Leer 1990). I am afraid that the main difficulties may be overcome in rejecting the widespread conception that the ancestral language must phonemically look like its descendants, even though their systems are similar and form a typological community.

4. Tlingit has a fluctuation in the reflexes of the PND plain (unvoiced) consonants (*D) — the may give Tlingit plain (D) or aspirated (T) reflexes. This undoubtedly is an inner Tlingit splitting, because there are D/T pairs among the Tlingit dialects.

5. The PND aspirated obstruents are reconstructed in root-initial position only and are neutralized in the middle of the roots with the unaspirated (plain) ones.

6. Many affricate/sibilant series are defective, and it is unclear whether the absence of some of them is casual or regular. It is so in the case of *c' (no examples in the middle), *c'^w (1 way in the middle), *s^w (1 way in the middle), *č'^w, *š^w, *x', *q'^w (absent in the middle) and so on. PND *q'^w is reconstructed in the middle of a root with an irregular Tlingit reflex. An initial *s'^w remains reconstructed in one root only, while it is common in the medial position. Medial *-č'- is reconstructed in two "rhyming" roots -- *niwč'V ` gill bone, nostril' and *ǵ^wEnč'i (with a variant *ǵ^wEnži) ` gristle'.

5. PND glottalization of consonants is often lost in Tlingit and occasionally in Eyak; glottalization is stable in PA. The cause of loss of glottalization in Tlingit (and Eyak) is unclear.

Final glottalization in Na-Dene

	Tlingit	Eyak	P-Athabaskan
*diws ^w i 'cover, shut'	-diʔx'~	-l-du:c'	*du:c'
*diwš'i ~ s' 'mucus, soot'	dus'	du:c'	*du:(?)č'
*dix ^w V 'tie tightly, squeeze'	k-duʔx'~	O-ʔ-duʔk'	
*dEGλ'E 'young tree, sapling'	tuqʔ', dúqʔ'		*dəλ' (?)
*dEwč'E 'crack, cut'	k-ʔ-duʔč'		*duč'
*dEs'E 'bright, shiny; stare'	k-tiʔs'		*dəc', *dəʔs-[g]
*dEx ^w E (?) 'ant'	tix		*duk' (?)
*dEχ ^w E 'thorax, back'	=diχ'		*duχ
*dEχ ^w E 'outer side of foot up to the anklebone, calf'			*duχ
*dEʒ ^w E, *dEc ^w E 'twist, spin'	si-te:k'		*dəʒ
*t'aλ ^v V 'press'	k-t'aʔʔ'~	O-ʔ-t'aʔʔ (~ - t'aʔχ)	
*t'əχ'a 'fall, pound falling, etc.'	k-ʒ-t'aχ'~	ʔə-t'eq'	*t'aq'
*t'is ^w V 'ice; freeze'	ʔ-t'i:x'~	t'ic'	
*t'iwč'ə 'charcoal; black'	ʔ-t'uʔč'~	dəʔ-t'u:č'(-g)	*t'e:č'
*t'As ^w a 'cut'	-t'aʔx'~		*t'a:c'
*t'Aχ ^w E, *taχ ^w E 'body swelling, wart'	t'aʔχ ^w 'wart'		*təχ ^w ə-ʔ'
*t'Ec ^w ə 'plant sp. (thorny/stinging)'	t'u:k'		*t'e:ʔs (< -ʔc')

*t'Eχ ^w E 'chip, pound'	k-t'i?χ'~		*t'uq'
*täš'a, *täš ^w a 'prick, poke, bite'	-ta?x'~	t'ič'†	*tač'
*tAq'a 'twist; thongs'	-te?q'~		*taq'
*tAx ^w i 'bite'	tá:x'		*tu:k'
*tEk ^w a 'dig out. clean out/off'	te-/ta-/ka-tu:k		*ta:k'
*tEλ'E 'fat, stuffy'	te?λ'		*təλ' (?)
*tEx ^w i 'knee, bent crossbeam'	tux'-		*O-da:-tu:(x) (??)
*tEχ ^w E 'heart; beat (of heart)'	=te:χ'		*tiq', *tiq ^w
*LEt'a 'roar, plop, etc.'	-Łet'~		*Ła:t'
*LEwt'i 'lick, lap'	-λe?t'~		*tu:t' ~ Ł-
*λ'əλ'V 'yellow; young salmonberry bushes or sprouts'	λ'a:λ'	λ'e?λ'-G	
*λ'ət'E 'cranberry'	ʔi-λ'at {< Athabaskan?}	qa:sa?Gəðə-λ'əc'	*λ'ət'
*λ'is ^w a 'trash, dirt'	-λ'ix~	λ'ic'(-g) ~ λ'əc'(-g)	*λ'a:c' ~ -ʒ
*λ'Et'E 'climb holding on to sth., wobble'	Ł-λ'e?t'		*λ'ət' (?)
*λ'Et'i 'pour, scatter'	ša-λ'i?t'~		*λ'i:t'
*läχ ^w žV 'soil, mud, clay'	λ'ex'k ^w , λ'aχ'k ^w + łáχ ^w g ^w	ŁəGš-g	
*liš ^w E 'urine, urinate'	ʔa-ti?x ^w ~, -t'u?x'~	-te?x ^w -λ' ~ -te?x-λ'	*təž ^w
*λEλ ^w E (?) 'soft, pliable'	=teλ'-k		*λ'əč'-g
*λEq ^w i, *λ'EG ^w i 'salmon, fish (generic)'	t'ük		*tu:q'

*λEt'E 'slide down, wobble'	-t'eʔt'~, -λeʔt'~		*təd ~ -t'
*λEwt'E 'gristle (fin, nose cartilage)'	= ^h idi, =hit-ka		*λut'
*λ'äwt'i 'tongue'	=ʔ'uʔt'	-laʔt'	*λu:(ʔ)X' [possibly X' = t' or k']
*λ'äχ'wV 'injured, worn'	=ʔ'uχ'-ti	λ'aʔq'	
*λ'is'wi 'soak, rain, drink'	k-t-ʔ'uʔx'~	O-λ'i:c'	*λ'i:c'
*λ'At'E 'squeeze'	-ʔ'aʔt'~		*λ'ət'
*λ ^w aq'wa, *λ ^w ak'wa 'wet'	d-λ'aʔk'~	t-c'ak'	*c'aq'
*λ ^w imλ ^w i 'suck'	λ'eλ', λ'e[ʔ]λ'	O-c'uʔc'-g	*c'u:nc' (< *c'əmc')
*λ ^w əχ'V 'sapwood, pitch'	təχ'	sihχ	
*λ ^w aq'asg ^w V 'dulce (Rhodymenia palmata)'	təq'ask	sa:q'	
*λ ^w Aχ'ə 'skull, throat'	=ša-təχ'		*se:q'
*λ ^w anG ^w ə, *λ ^w anq ^w ə 'crawl (as a worm); molt'	-ʔ'əq ^w ~	tə-c'a:G	*c'e:ʔq'
*λ ^w ik'wa 'dangle, swing, dodge'	-λ'eʔk ^w ~	-č'e:k'	*č'a:k'
*λ ^w iλ ^w V 'squeeze'	ʔa-t'iʔt'~	O-t-c'eʔc'	
*λ ^w iχ ^w E 'move swiftly, spurt'	ʔa-d-ʔ'uʔχ'~	-c'əq'	*c'əq'
*zík ^w V 'crosspiece, thwart; *sacrum, back'	=zuk	O-t-ʒuʔk	
*zAmVλ'E, *zAmVλE 'wart,	Ya-zaʔ' (Yak.)		*zəŋ ^w ət' (?)

lumpy face'			
*ʒEnsk'wi 'owl'	ʒisk'w, cisk'w		*wəc'-ʒi:nx' (?)
*c'ic'χ ^{wE} (?) 'snail, water insect'	c'esχ ^w	č'u:č'	*č'əx' (?)
*c'ik'wi, *c'izik'wi 'bird (small singing - generic)'	c'ick ^w		*č'ək'
*cEχ ^{wE} 'stake, dam up'	-cu?χ~, -ci?χ ^w ~		*čəq'
*ʒwans'wV 'plead, pray'	d-ga?x'~	d-də-ʒa:c'	
*ʒwis'wV 'cup, receptacle, calyx'	gux'-a	-d-ʒ-ʒic'-ʒ	
*c ^w əχk'i 'body, inside of skin'	=kək (ITl)	-c'ehχk' (? - xk')	*c'i:x
*c ^w ak'E, *c ^w ac'E 'sharp, (sharp) edge'	-k'ac'	*c'ək'	
*c ^w eλ'E, *c ^w eč'E 'nape, occiput'	=ʒa-k'i?č'		*c'əλ'
*c ^w inλ'i 'ashes'	keʒ'-t'	ci?λ'-g	*ci:λ'
*c ^w Es'a 'extinguish'	k-kis'~		*cas
*c ^w Ex'wa 'dry'	k-ʒ-kux~		*ca:k', *ʒa:[g]
*s ^w əs'E 'fish skin'	=xa?s'(i)	-sic'	*səc'
*s ^w idV, *s ^w it'V 'ribs together with spine, comb'	xe:du	-dl-sj:d ~ - sj:t'	
*š ^w Et'i, *šEt'i 'handle, pour, spread dirt, sand, grain, etc.'	-xi:t'~	O-šet't'	
*s ^w Ewλ'i 'drool, snort'	χ'a-xet'(-g)		*su:λ'
*s ^w Ex'E 'compact obj. moves independently'	s-xix~		*sək'

*žaGə, *žaqa'E 'punch, strike, spear, kill'	-žaqa~	žahG-ł	*že:q'
*žič'i, *žiži, *žwič'wi 'punch, knock'	-žičč~	O-gu?k'	*žəč'
*žEχ'wə 'move rapidly in a group; fling, sling'	ł-žu?χ'~,- ži?χ'w~		*že:q' , *že:ʔG, (?)*če:q'
*č'əč'i 'rough, callous, spotted'	k-d-č'a?č'~	č'i?č'-χ	
*č'Eč'wi 'interior part; intestines'	=waq-č'u;k'u		*č'i:k'
*č'Es'wi 'splash, drizzle'	k-d-č'is~		*č'i:k'
*č'Ak'i 'k. of bird of prey'	č'a?k'		*č'i:k' (?)
*č'wAł'E, *č'Ał'E 'willow'	č'a:ł'		*č'wəł'
*č'Et'a 'ball; womb'	kù-č'e:t'-a, kù- č'it'-a		*č'at'
*ča, *čas'a 'salmon, trout'	ča:s'	ča?č'	*ča:
*čiχ'E, *č'wiχ'E, *š(w)ix'E 'hook '	-k'i?χ'~	O-ł-če?q'	*šəq'
*čiχ'V, *č'ix'V 'finger'	=č'i:χ'i, =c'i:χ'i	y-ł-cəq's-g-ł	
*čEč'wi 'sweep, graze'	-ču?x'~		*ču:g' (? ~ -k')
*čEł'i 'fallen snow, melting snow'	ł-čel~		*či:ł'
*čEq'E 'nail, hoof'	čiG-a-Yi (ITl)		*čəq' (*čə?χ-ł)
*čEχ'wE, *č'Eχ'wE 'roll up, coil'	k-d-ču?χ'~		*c'əχ
*čEχ'wE 'hop, shake'	yù=O-ł-ču[?]χ'- ał'		*č(w)əq' (?)
PND *šäGə, *žäGə, -q'- 'saliva, slime;	=(ka-)žiGi	šahG	*še:q'

spit'			
*š[ə]λ'V, *š ^w [ə]λ'V 'rub off, sweep, file'	O-ka-(t-)xiʔt'~	O-šaʔλ'	
*šənč'V (?) 'moss'	ša:č'	lis-gu-sj:k'	
*šik' ^w E 'bend, crook, get cramps'	l-Ł-šiʔk' ^w ~	-šeʔg	*šək'
*šiχ' ^w i 'robin'	šùχ'	ši:q'	*š ^u :χ
*šAx' ^w i 'take, handle; ask in marriage'	ya-šá:x' ^w		*š ^u :k' (?)
*š'iwš'V ~ s'- 'pinch'	-s'uʔš-k' ^w	O-č'u:č'	
*š'ix'V ~ s'- 'dish, bowl'	s'ix'	c'ik'	
*š'Ant'i, *š'Andi ~ s'- 'defective (left-handed, sterile)'	-s'a:t'		*č'i:nd
*š'Eł'E ~ s'- duck sp.	s'eta-šiš		*čəŁ ~ -ł' (?)
*š'Ewš'i ~ s' 'thread (fish) on stick for drying'	t-s'uʔs'~		*č'u:č' ~ -ž
*š'Eχ' ^w E ~ s'- 'sore, injury'	(waq-k-)t- s'uʔχ'~		*č'ə(?)χ-X
*ž ^w Aλ' ^w a 'tangled (rope, hair)'	k-g ^w aʔt'		*ž ^w a:c'
*ž ^w At'E 'shake, move upside down'	k-g ^w aʔt'~		*žət'
*ž ^w Aχ' ^w a 'riddle'	t-D-ʔa-Ł- gaʔx' ^w ~		*č ^w aq', *ž ^w aq'
*ž ^w Ewχ'ə 'pitch, gum'	k-š-k'uχ'~		*že:q' 'pitch, gum'
*č ^w Ał'E 'close the eyes, keep silence'	-k'aʔł'~		*č ^w əł'
*č ^w Aχ'V 'fish kidney; rennet'	k'a:χ'		*č ^w a:q'

*č ^w Eλ'a, *č ^w Eλ'a 'back part of body, belly'	-k'uʔʔ(i)		*č ^w a:λ'
*č ^w inč'a, -i 'fart'	ʔa-kuʔč' 'fart'	kū:č'	*č ^(w) a:š, *č ^(w) u:š (~ -ž)
*č ^w At'i, *č ^w Adi 'smoke, fog'	k-dʔ-k ^w aʔt'~		*č ^w i:d
*š ^w əx'ə 'whittle, shave, carve; knife'	k-xa[ʔ]x'	O-x ^w ik'	*še:ǵ
*š ^w ənk'(š)i 'rough, callous'	ka-s-D-x'ag	d-tə-k'ik's ~ - k'i:k's ~ - k'i:gš-g	
*š ^w int'E 'scratch, wipe'	k-x'uʔt'~ 'scratch with sharp point'	O-k'iʔt' 'S scratches O'	*č ^w ət' 'scratch'
*š ^w iws'E ~ -s'- 'swell'	d-x'is~, -x'iʔs~	l-č'u:č'	*č ^w əč ^w
*š ^w Eλ'E 'break'	ka-ti-x'e:ʔ		*č ^w əλ'
*c'aλ'V 'drip'	k-c'ət~	c'aʔλ'-g	
*c'ik ^w E pinch'	-c'iʔk ^w ~, - c'iʔk'~	O-c'iʔk'	*c'ək'
*c'ik'i 'whine'	ʔ-c'ik~		*c'i:k'
*sins'ə 'curving, hill, wart'	k-xiʔs'	Gə-tə=ʔ-xiʔc'	*xe:ʔnc'
*sAx'E 'sap, watery cambium'	sax'		*sək'
*sEc'i 'fail (?)'	d-siʔc'		*si:c'
*s'äl'a 'moss'	s'ix'-Ga	c'a:λ'-g	*c'a:λ'
*s'änχ'ə 'gush, have runny diarrhea'	-s'iʔχ'~	c'aʔq'	*c'e:q'
*s'inλ'i 'rip, slap'	s'eʔt'~	O-ʔ-c'iʔλ'-g	*ce:λ'
*s'int'E 'animate or compact object moves independently, falls'	ša-s-x'it~	(ʔ-c'iʔt' = Tl -c'iʔt' ?)	*c'əd
*s'ims'V (?) 'k. of duck'	s'us'	c'ic'(-g)	
*s'ix ^w V 'sour,	k-ʔ-s'ix ^w ~	ʔ-c'ik'	

ulcerate'			
*s'Aq'ə 'spine'	s'àq		*c'e:q'
*gāš'V ~ ž ^w -, -s'- 'post, ladder'	ga:s'	gaʔc'(-g)(-t)	
*gāq'ə 'trachea, (wind)pipe, throat'	=giq-t'an, =k'iq- t'an, =k'ix'-t'an	-gaʔq'-t	*g'e:q'
*gāwä[s']V ~ -m-, -R- 'kelp, laminaria'	gış	gəwaʔc'	
*gAs'a 'move rapidly through space'	-gaʔs'~		*ga:c'
gışx'wi, *χışx'wi 'blue jay (Cyanocitta stelleri), gray jay (Perisoreus canadensis)'	χ'e:šx'w	kušk'	*gu:(?)š
*k'As'a 'nostril, gap between the teets' (?)	-k'aʔs'	*k'əc'	
*kił'wE 'tie, bind'	-keʔt'~	kiʒ	
*kEł'E 'youth, nephew, young brother'	=ke:t-k'		*kəł'
*xAk'a 'dry'	qu-k-xa[?]k		*xa:k' ~ *y-
*xAš'wi, *x'wAš'wi 'k. of small tree (crabapple, poison oak, willow)'	x'a:x'		*xi:(?)č'(w) ~ y-
*x'at'V ~ š ^w - 'island'	x'át'	k'aʔt'	
*g ^w a[ł ^w]V-	d-g ^w aʔł', - g ^w aʔł~	t-gaʔč'-g	
*g ^w əš'wE 'humpbacked, stooped'	k ^w a;š	tə-guʔk'	*gu:š ~ -ž ^(w)
*g ^w imVč'i, *k ^w -, *G ^w -, -s'i (??)	k'unc'	ti:l-kihs ~ kihš	*Gu:nc'

‘plant with edible roots’			
*ǵ ^w Eǵš’E ~ -s’- ‘point(ed), corner’	=gukš, =gukšu, =gukš(i)-tu		*ǵuč’ ^(w)
*k’ ^w it’E ‘sinew, tendon’	ǰ-x’ut’~	k’uʔt’	*k’ət’
*k’ ^w Aǰ’i ‘pity, compassion, friendship’	=k ^w aǰ’-i		*k ^u :(ʔ)t ~ ǰ’
*k’ ^w Aš’E ~ -s’- ‘urine (for washing)’	k ^w as		*k ^w əč’ (?)
*k’ ^w Eč’i ‘hood; thick chevelure’ (?)	=ša-ka-kú:č’i		*k ^u :č’
*x’ ^w aš’a ~ -s’- ‘tie, attach’	d-x ^w aʔs’~	O-x ^w aʔč’ ~ - xaʔč’	*x ^a :č’
*x’ ^w äk’ ^w i ‘steam, breath’	x’ùk’~	x ^w a:g ~ xa:g	*x ⁱ :k’ ^w , *x ⁱ :č’ ^w
*x’ ^w ät’V ~ š’ ^w - ‘fly, soar’	Y-x’uʔt’~	d-t-k’at’	
*x’ ^w Eš’i ~ -s’- ‘fuzzy’	k-xiʔs’~		*x ^u :č’ ~ y-
*x’ ^w ic’V (?) ‘charred wood, rough wood’	y-t-xuʔc’~	xuʔč’	
*x’ ^w iǰ’i ‘blow, breathe; tangle, mess (blowing)’	k-d-xiʔt’~	O-xuʔǰ’(-g)	*x ^u :ǰ’
*x’ ^w inš’ ^w i, *x’ ^w inš’i ‘whistle’	χ’e-d-s’iʔs’~	d-tə-x ^w e:g ~ - xe:g	*x ⁱ :ʔnč’ ^w ‘whistle’
*x ⁱ x’ə ‘fleshy part of bird’s body (shin, sternum)’	=xiʔs’i	-xiʔc’	*x ^e :(ʔ)c’ ~ *y-
*x’ ^w it’E, *t’ix’ ^w E ‘tie, stretch’	-s’it’~	gd-t’ux	*t’ək’, *k’ət’
*x’ ^w Adi, *x’ ^w At’i ‘file, gnaw’	-x’ät’~		*k’u:d, *k’u:t’, *k’ud, -t’
*x’ ^w At’i ‘pull, drag’	s-xaʔt’~		*k’u:t’
*x’ ^w As’E ‘stream (out)’	k-x’aʔs		*k’uc’

*x ^w EL'i 'tear, rip, pluck'	ʃ-x'uʔʔ'		*k'u:ʃ, *k'əʃ (? < - ʃ')
*GəGč'ə (?) 'lame'	ʃ-qač-k	-GəGš-g	*Ge:č'
*Gəš'E ~ -s'-	nà-Gas'e:	nah-Gəc'e	*na:N-Gəc'e
*Gəwət'ə (?) 'twist, contort'	-G ^w aʔt'~	də-Gəmət'	*G ^w e:d, *Gud
*Giλ ^w ə 'dry skin'	š-Giʃ'	Gəc'	*Ge:(?)s, *Gəs
*GimVc ^w V, *Gimc ^w V	k-Gük~	O-Gəc', O-Gəmec'	*Gəc'
*Ginχ'sE 'whistle'	-Giχ'~	ʃə-Gi:q's	*Gəs
*GAG ^w č'a ~ G ^w - 'sink, founder in the water; fish trap'	Gaq ^w č		*G ^w a:č ^w , *G ^w ač ^w
*GAs'a 'rip, scratch'	-Gaʔs'~		*Ga:c'
*GAx ^w a 'abdominal contents'	Gaʔx ^w		*Gax-d (?)
*GAχ'a 'stout, fat'	š-Gaʔχ'~		*Ga(:)q' (?)
*q'äk'ə 'cut, slice (meat, fish)'	-q'eʔk'~	O-ʃ-q'aʔk'	*q'e:k'
*q'əsV, *qəs'V 'crack, split'	-q'aʔs~	-qəc'	
*q'inq'šə ~ -χ'- 'scab, gristle'	qi[ʔ]č'	q'əGš-g	*ge:nš ~ ž, -č'
*qimiχ'šV 'hole, sore'	ʃ-quʔš~	qəməχč'	
*qAx'a, -ə 'fox, marmot'	χa-s-qa;x'		*χa(ʔ)x-, *χe:(ʔ)x-, *q-
*qEt'E, *qEl'E 'slide'	qit, Git	O-qəʃ'	*qət'
*χas'a 'scrape, gnaw, etc.'	-χaʔs'~	O-(ʃ)χahz	*χa:c'
*χit'V, *χ'it'V 'gnaw, peel'	-χ'iʔt'	O-χət'	
*χAnAš'E ~ -s' 'raft'	χənas'		*χəhəc' raft

*χEg ^{wa} , *χEx ^{wa} etc. 'frog'	xix-č'		*χα:(?)ǵ, *χα:ʔx
*χEλ ^{wE} 'startle, be afraid'	ʔa-k-u-Ľ-χil'		*χəs
*χEš'E ~ -s' 'wish, starve'	ʔa-ʔu-Ľ-χe:s'		*χəs
*χ'as'E ~ -s'- 'jaw'	=χ'as'	-l-q'a'c'	*q'əʔs-C
*χəmχ'i, *χ'əmχ'i, *χəmχi 'tremble, twitch, have convulsions'	-χ'aχ'~	ʔə-χəχ-g	*χu:nq', *χu:nχ
*χ'äs'V 'bush (?)'	χ'əs'awa	q'a'c'	
*χ'əx'V 'squeeze, strangle'	k-ʔ-χ'iʔx'~	(Opʔ-)d-ʔ- q'a'k'	
*χ'iλ'V 'slippery, boggy'	k-χ'iʔʔ~, -χ'iʔʔ~	q'ec' 'slough'	
*χ'is'V 'tangle, jam'	ʔa-χ'i;s'i	-q'e'ʔs	
*χ'Es'i, *χEs'i 'cylindrical, square; fish eggs'	χ'ix'		*χi:c', *χəs
*χ'Ex ^{wi} , *χEx ^{wi} 'filleted fish, meat of gumboot chiton'	-χ'iʔx ^{wi} ~		*χu:k'
*G ^{wat} 'ə 'crawl'	d-G ^{wa} ʔt', -Gaʔt'	ʔə-Gaʔt'	*G ^w e:ʔt'
*G ^{wic} 'i 'twists, wring; squeeze out liquid, wash'	ʔ-Güç~	O-Gəc'	*Gəc'
*G ^{wAt} 'E 'clutter, clog, close up completely'	-G ^{wa} ʔt'~		*G ^{wət} '
*q ^{wəs} E, *G ^{wəs} 'E 'cloud'	qu-ʔ-guʔs'	q'ahs ~ q ^w ahs	*q ^{wəs}
*q ^{wä} χc'E, *χ ^{wä} χc'E 'tickle'	k-ʔ-qeʔc'~	O-ʔ-χaʔχč'-χ- g	*χuč'
*q ^{wE} λ'ə, *λ'Eq ^{wə} 'wet, mushy, muddy'	k-š-quʔλ'~		*λe:q ^w
*q ^{wEs} 'ə 'enclosed/sticklike'	s-quʔx'~		*q ^w e:ʔc'

object moves'			
*χ ^w At'i 'bend'	k-d-χα?t'~		*χu:t', *χ ^w it'
*χ ^w iš'a 'rough, scabby, marked'	χi:š	O-†-χəš	*χ ^w a:č'
*χ ^w Ec'V, *χ ^w Ec'V 'star'	xu:ží:	*Ła?χc'-†	
*χ ^w Eλ'E 'slime, marrow'	χi?†'		*χ ^w ə[L]
*χ ^w Eλ'E 'fall (mudlike substance); break, shatter (homogenous matter)'	d-χu?†'		*χ ^w əλ'
*χ ^w Eš'wa 'snore, sleep'	-χe?x' ^w ~		*χ ^w a:ʔš, χuš-ǵ
*χ ^w Et'E 'drag, pull; fish with rod, trap with snare'	-χu?†'~		*χ ^w ət', *χ ^w ət'-ǵ
*χ ^w Es'E 'leg, knuckle'	χis' (EN)		*χ ^w əs; *χ ^w əs-X
*χ ^w ác'E 'carcass of small game, fish bones, gills'	=χ'é:χ'u:	q'a:k'-qa?ah	*q'uk'
*χ ^w əλ'V 'break, crunch'	k-χ'at~	-q'u?λ'	
*χ ^w əš'V ~ -s'-	=χ'ùs	y-q'a?c'	
*χ ^w Aš'i ~ -s'-	χ'a?s'		*χu:č'(w)
*?iλ'ə (?) 'hill, mountain'	G(-)i†'	?iλ'	*?e:λ'
*?imt'V ~ ń 'adhere by suction'	-?u?†'~	Ła:χə-?i:d	
*?inc' ^w V ~ ń- 'a relative'	=?i:k'	?i:ʒ- ~ -:ʒ-kih	
*?is'(ǵ ^w a) ~ š' 'sneeze'	?a-Ł-c'isx ^w -a, - c'ix-a	?əš-g	*?ač'
*?is' ^w V ~ ń- 'call, summon'	-?i?x'~	O-?-?ehʒ	
*?Ec'a 'move (together)'	k-?e?c'~		*?a:(?)č'
*?Eč' ^w i 'frail,	d-?ek		*?u:č' ^w

soft'			
*ʔVnäwt'a 'lick, swallow'	-nuʔt'~	O-t-ʔnaʔt'	*na:t'
*ʔVnəʔ ^w V 'wet'	-naʔʔ'	-ʔliʔc'	
*ʔVnik ^w V 'crawl, swivel, pivot'	O-k-š-niʔk ^w	ʔe-ʔnik'	
*ʔVriq'E 'swallow, carry in mouth'	-Yiq~	liʔ O-tə-ʔni:q'	*nəq'
*ʔwə(n)χ ^w E 'crack, pop'	-ʔaʔx ^w ~	-weʔq'	*ń ^w uq' (?)
*wäʔ ^w V 'peel, whip'	k-wuʔʔ'	O-waʔc'(-g)	
*wäs ^w V 'gland, membrane'	we:s'	-waʔc'	
*wəs ^w V ~ -š'- 'ask, sneak, deceive'	(ʔu)-waʔs'~	O-dl-t-weʔč'	
*wəš ^w V ~ s' 'bush'	was'	we:č'	
*wiʔə, *wiʔə 'move energetically, be agitated'	d-wuʔʔ~	ʔə-wiʔ'	*we:ʔ'
*wit ^w E 'gastric contents, vomit, menstruate'	-weʔt	wut'	*wət'
*wAʔ ^w E 'cut, break'	-waʔʔ'~		*wəʔ' ~ ń ^w - (?)
*wEt'a 'split, burst'	ka-d-wut'~		*wat'
*mEʔə 'basket'	neʔʔ		*ńe:ʔ' ~ ń ^w -
*niwč ^w V 'gill bone, nostril'	=nuʔč'i	-ni:sq'; ni:č'- d-t-xaʔč'-	
*nix ^w i 'nose, smell'	ʔ-niʔx'~	-ni:k' ~ -nik ^w	*ni:k'
*nAq ^w E (?) 'small hooks, baited and hung from float line'	ya-S-d-na:q ^w ~		*tuʔχ-t < *t-nuʔχ-t
*nEk ^w E 'tasty, sweet'	t-nuk-c		*nəxk' < *nək'-g

*nEχ'a 'gravel, marble'	niʔχ'		*na:q'
*rəš'E ~ -s'- 'smooth'	k-d-Yaʔs'~	ʔə-lic'	*nəč'(w)

6. The *s' ⇔ *š opposition is reconstructed based on system considerations. Their reflexes coincide both in PEA and Tlingit.

7. The reasons for sporadic loss of labialization in the history of each group are not clear.

The Proto-Eyak-Athabaskan-Tlingit (PEAT) reconstruction by J. Leer (according to Leer 2008) in comparison with mine:

PND Leer-2008	PEA	Proto- Athabaskan	Eyak	Tlingit	PND Nikolaev-2013
*d	*d	*d	d	d	*d
*t	*t	*t	t	t	*t
*t'	*t'	*t'	t'	t'	*t
*λ'	*λ'	*λ'	λ'	ʔ', λ'	*λ', *λ'
*ʔ	*ʔ	*ʔ ~ l	ʔ	ʔ	*λ, *ʔ
*s	*s	*s ~ z	s	s	*ś
*ts	*c	*c	c	c	—
*ts'	*c'	*c'	c'	s', c'	*ć'
*š	*š	*š ~ ž	š (s)	š (s)	*š, *s
*ž	*ž	*ž	ž	ž	*ž, *ž
*č	*č	*č	č	č (c)	*č, *c
*č'	*č'	*č'	č'	s' č' (c')	*ć', *c', *s'
*xy	*s	s ~ z	s; š	x	*s ^w
*gy	*ž	*ž, *s~z	ž	g	*ž ^w , *ž
*ky	*c	*c	c	k; š	*c ^w , *ć
*k'y	*c'	*c'	c'	k'	*c' ^w , *s' ^w
*x	*x	*xy~y	x	x(w)	*x', *x' ^w
*g	*g	*gy	g	g(w)	*g', *g' ^w
*k	*k	*ky	k	k(w)	*k', *k' ^w
*k'	*k'	*k'y	k'	x'(w), k'(w)	*k', *k' ^w , *x', *x' ^w
*xw	*xw	*š~ž	xw > x	x(w)	*š ^w

PND Leer-2008	PEA	Proto- Athapaskan	Eyak	Tlingit	PND Nikolaev-2013
*gw	*gw	*ǰ	gw > g	g(w)	*ǰ ^w
*kw	*kw	*č'	kw > k	k(w)	*č ^w
*k'w	*k'w	*č	k'w > k'	x'(w), k'(w)	*č' ^w
*χ	*χ	*χ~ɸ	χ	χ(w)	*χ
*G	*G	*G	G	G(w)	*G
*q	*q	*q	q	q(w)	*q
*q'	*q'	*q'	q'	χ'(w), q'(w)	*q', *χ'
*χ ^w	*χ ^w	*χ ^w > *χ~ɸ	χ	χ(w)	*χ ^w
*G ^w	*G ^w	*G ^w > *G	G	G(w)	*G ^w
*q ^w	*q ^w	*q ^w > *q	q	q(w)	*q ^w
*q' ^w	*q' ^w	*q' ^w > *q'	q'	χ'(w), q'(w)	*q' ^w , *χ' ^w
*ʔ	*ʔ	*ʔ	ʔ	ʔ	*ʔ
*h	*(h)	*(h)	0	h	*h
*ʔ ^w	*ʔ ^w	?	w	ʔ	*ʔ ^w
*hw	*w	*w	w	h	*h ^w
*ʔy		*y		ʔ	—
*sx	*x	*xy~y	x	s	—
*šx	*x	*xy~y	š	š	—
*x(w) (1.sg.)	*x(w)	*\$ (*š~*xy)	xw>x; s	χ	—

The difference between 2 reconstructions consists primarily in Leer's neglect of some clear series, which he combined, considering the Tlingit reflexes as internal splitting. Thus, he does not distinguish the PND glottalized affricates and fricatives, though their opposition is strong in Tlingit and must be derived from "Pre-Tlingit", because there are different reflexes of *C' and *S' that lost glottalization. Maybe it depends on the number of the roots involved: Leer's comparisons are based on a relatively short list of cognate sets while I try to take into account the whole corpus. Moreover, as is evident from his solutions, he avoids reconstructing phonemes that lie beyond the contemporary Na-Dene typology (e. g. labialized sibilants). Each of Leer's *x(w), *sx and *šx describes a unique series of correspondences.

Sonorants

	PA	Eyak	Tlingit
*ń	*ń	ʔ-, n/l, -N (-l)	ʔ-, n
*n	*n	n/l, -N (-l)	n
*m	*ń ^w	w-/ʔ-, w/y/m, -0	n
*r	*n-, n/0	n/l, -N (-l)	Y-, 0/Y
*ŋ	*ń	ʔ-, n/l, -N	Y-, 0/Y
*ŋ ^w (?)	*ń ^w	w-/ʔ-, w/y/m, -0	Y-, Y/0
*y	*y-, y/0	y-, w/y, -0	y-/Y-, Y/0
*w	*w	w-, w/y, -0/-w	w-, w/0

-N in Eyak = vowel nasalization.

Leer 2008:

*w	*w	*w	w	w, ʏ
*y	*y	*y(~*ñ)	y	ʏ
*ñ	*ñ	*ñ	y	ʏ
*n	*n	*n	l~n	n
*ŋ	*n	*n	l~n	ʏ
*ŋw	*n	*n	l	w

Leer's correspondences are based on a small number of cognate sets, and are attractive but not precise. In particular, he did not take into account a frequent correspondence PEA *ñ = Tl n. Therefore, his series

*ñ	*ñ	*ñ	y	ʏ
----	----	----	---	---

gets split into 2:

*ñ	*ñ	*ñ	y	ʏ
?	*ñ	*ñ	y	n

My interpretation of these series is *ŋ and *ń correspondingly. Leer's *ŋ = my *r.

Leer's series

*ŋw	*n	*n	l	w
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is supported by only one example. If Tl *w* is an allophone of /Y/, it is a reflex of the common *ŋ (Leer's) или *r (mine).

For a reason that remains unknown to me, J. Leer has scrapped PEA *ñ^w, reconstructed in Krauss, Leer 1981:

?	*ñ ^w	*ñ ^w	w	n
---	-----------------	-----------------	---	---

This series (my *m) is quite common.

The series

?	*ñ ^w	*ñ ^w	w	ÿ
---	-----------------	-----------------	---	---

is presented in two sets. Maybe it reflects *ŋ^w.

The Tlingit phonemes /Y/ (a velar glide, also noted as /ÿ/) and /y/ seem to have been different not long ago, though their opposition is practically lost in contemporary Tlingit dialects. The "normal" reflex of PND *y is Tl /y/, though there are several examples of *y > /Y/.

The clusters *nC, *mC are reconstructible for PND. They remain unchanged in PEA, but PEA *NC > C in Tlingit. Since the PEA free nasal sonorants reflect not only PND *n, *ŋ, *m, but also PND *r as well, the reconstruction PND *nC theoretically = *nC ~ *ŋc ~ *rC. PND *mC is reconstructed if *m 1) is reflected in labialization of the preceding vowels; 2) there is a universally received development "early PA" *CimC > PA *Cu:nc (= *Cɥ:C in Leer's notation).

Vowels

	Tlingit	Eyak	PA (before *-i)	PA (before *-ə)	PA (before *-a)
*i	i/e (u)	i/e (u) (iN)	i: (u:) ə (u)	e: ə (u)	a: a
*ä	i/e (u)	a (aN)	i: (u:) ə (u)	e: ə (u)	a: a
*ə	a	i/e (u)(iN)	i: (u:) ə (u)	e: ə (u)	a: a
*a	a	a (aN)	i: (u:) ə (u)	e: ə (u)	a: a

1. VN -- a nasalized vowel.
2. Eyak vowels *i/e* have a reduced grade *ə*; sometimes *ə* is a reduced grade of *a*.

Tl *i/e* may reflect two different "Pre-Tlingit" phonemes, but the distribution of the two vowels in the dialects seems to be chaotic. The positions of the historical distribution of *i/e* in Eyak are not clear either, and they alternate in several roots without a regular distribution.

Leer 2008: Eyak-Athabaskan-Tlingit vowel correspondences and PEAT reconstruction:

PND Leer-2008	PEA	PA	Eyak	Tlingit
*i(:)	*i(:)	*i(:), *ə	i(:), ə	i
*i(:)next to rounded cons.	*e(:)	*e:, *ə	e(:), ə	u
*i(:) next to uvular	*e(:)	*e:, *ə	e(:), ə	i~e
*e(:)	*e(:)	*e:, *ə	e(:), ə	a
*a(:)	*a(:)	*a:, * <u>a</u>	a(:), ə	a
*o(:)	*a(:)	*a:, * <u>a</u>	a(:), ə	u
*u(:)	*u(:)	*u:, * <u>u</u>	u(:), ə	u

1. I reconstruct in the PND roots final vowels, practically lost in descendant languages, but leaving traces in the timbre of PA vowels. In other words, the PND roots looked like CV or (CV)CV(C)CV (there was possible a CVC structure, but I can not differ it from CVCV). This hypothesis is verisimilar. The prosodic word structure in main contemporary Na-Dene languages is as follows: the stress is placed on the 1st root vowel, the unstressed vowels are reduced right up to disappearance. The secondary voiced fricatives are reconstructed in PA not only between vowels, but also in coda position; this supposes their preliminary intervocalic position. The final root vowels are preserved before suffixes in Tl, Eyak and PA; because of this, many suffixes have a secondary VC-aspect. But it is hard to reconstruct directly the quality of the final root vowels, since they are usually represented by a neutral sound.

In PA suffixes with a VS-structure a unified *ə* is reconstructed. But in some Athabaskan languages the reflexes of the "subordinate *ə" differ from the reflexes of the "root ə". It may be an indication that different word-final vowels have been generalized in the history of separate languages. Several PA noun roots are reconstructed with final **-ə* (Krauss, Leer 1981); this is probably a reflex of PND final vowels.

I reconstruct 3 PND final vowels, assuming an assimilation of PA medial vowels to the three final ones (*i, *ə, *a). In my reconstruction, three PND medial vowels are freely combined with any of the final ones.

A frontal comparison of Tlingit vowels with Eyak and Athabaskan begets an enormous number of non-interpretable series. A comparison of the PEA reconstruction with Tlingit is not any more informative: any PEA vowel can correspond to any Tlingit vowel, since any Eyak vowel can correspond to any Athabaskan. Only a comparison between Tlingit and Eyak gives a reasonable system.

It is not evident whether all PND roots reconstructed as *CV really had this structure. Many roots may have had structures like *CVyV, *CVwV, *CVHV, and the contractions get detected in rare cases. But a notation of all the "monosyllabic" roots as *CVHV (H = y, w, h, ?) seems to be superfluous.

2. There are no grounds for the reconstruction of PND labialized vowels. The vowel *u* does not form an independent series of correspondences. Leer's series *o (Tl *u* — E *a*) is a particular case of development of PND *ä (Tl *i* — E *a*) — the later is considered by Leer as a manifestation of Ablaut. But there are almost no traces of Ablaut inside the separate groups (except for a quantitative one, secondarily developed in PA); therefore, there is no reason to explain the non-trivial vowel series with its help.

The correspondence "Tl, E, PA *u*" (Leer's PND **u*) is an extremely rare case — usually *u* is observed only in one or two languages, but the third has a non-labialized one. The vowel *u*(:) is not original in any of these groups; it is the result of an assimilation to the neighboring labialized (bimole) consonants, it also develops in the **Vw(V)* sequences. It is necessary sometimes to insert into the protoform a "labializing" sonorant (*-*w*- or *-*m*-) before the consonants (**CiwCV*, **CimCV*), when the labialization cannot be explained by the influence of labialized consonants. In reality, a "labializing" *w* may be found both after and before the vowel or after the final consonant (**CwiCV*, **CiCwV*). The vowel *i* becomes labialized in all three groups independently of its origin.

Details of vowel labialization remain unstudied. The labialization of obstruents disappears before *e* in Tlingit (**K^we* > *Ke*) and usually is preserved before *a* (**K^wa* > *K^wa*). The development *K^wa* > *Ku*, *aK^w* > *uK^w* is late and differs in the Tlingit dialects (velar and uvular consonants have in Tlingit an automatic labialization before *u* and after *u* in a closed syllable). Tlingit also has a regular development *wi* > *wu*. Labialization processes in the history of PEA were apparently similar to the ones in Tlingit. There is no labialization of vowels in the vicinity of the PND sibilant and lateral affricates/spirants (*C^w*, *S^w*, *L^w*) unless they develop into labialized palatal/velar consonants.

3. I have not yet reconstructed the PND prosody — vowel quantity, tones and/or phonations. Tlingit, Eyak and PA are very similar in respect to prosody: short/long vowels and three phonations — clipped/glottalized, fading/aspirated and sustained (neutral). These phonations turn into tones in the history of separate languages: the glottalized phonation into the rising tone, the aspirated phonation into the rising tone (or vice versa in a part of Athabaskan languages). The neutral phonation usually turns into one of existing tones. But a frontal comparison of the Tlingit, Eyak and PA prosody (except for some evident cases in the verbal morphophonology, described by J. Leer) did not give me a possibility to reconstruct anything reasonable on the PND level.

APPENDIX: POSSIBLE DENE-CAUCASIAN COGNATE ROOTS

All Na-Dene reconstructions based on the current ND reconstruction by S. Nikolayev.

All North Caucasian reconstructions based on S. Starostin, S. Nikolayev's *North Caucasian Etymological Dictionary* (1994).

POSSIBLE DENE-CAUCASIAN COGNATES

PRONOUNS

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
PEA *š ^w E-, *sE-, *ʔEš ^w -, *ʔEs- 'I, me'	*zō 'I'	*CVŋ 'I, we'	*ʔaʒ 'I'
*ní 'thou'	НЕТ	*nǎ- 'thou, you'	
PEA *χ ^w E 'you, ye, 2. pl. personal pronoun'	*ʔwV 'thou (obl. base)'	*K ^w a- 'thou, you'	*kV- / *ʔVk- (~g-, -g-) 'your (attr.); morpheme of the 2d person'
*da, di [interrogative stem]	*ʔādV 'interrogative pronoun'	*tǔ- 'interrogative pronoun'	
*ʔAda 'thing'	*ʔādV 'thing'		
*wə [interrogative stem]	*mV 'an interrogative stem'	[*mV] interrogative pronoun	*wi- / *we- 'interrogative pronoun'
*č ^w i, *č'i [interrogative stem]	*š _i 'an interrogative pronoun'		*ʔa(?)s- / *sV(?)-'interrogative stem'
PEA *gé [demonstrative/interrogative stem]	*ʔV 'a demonstrative pronoun'		
PEA *χA [interrogative stem]	*χ _V 'interrogative pronoun (who, what)'	*qhā- 'what, interrogative pronoun'	*ʔaj (~x-) 'interrogative particle'

*wi [demonstrative stem]	*ʔu (~ *hu) 'demonstrative pronoun (that)'		
*hA [demonstrative stem]	*ʔō 'that (demonstrative pronoun)'	*ʔa 'demonstrative pronoun'	
*tE [demonstrative stem]	*tV that (demonstrative pronoun)	*tǎ- (*tǎ-)	*tu- 'a demonstrative stem'

ADVERBIAL STEMS, PARTICLES AND SUFFIXES

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
*GA 'by, beside, near'	*ñigVrV 'near'	*k(r)ǎj (~ g-, q-, G-, -s) 'near, close'	*ʔikVl (~ -x-, -r) 'near'
*cEwə 'fore part, first'	*cwi 'in front, before'		
*λ'ä 'bottom; hind end'	*λi 'below, down (an adverbial stem)'		
*λ'A 'middle'	*=č̣λĚ 'middle, half'	*λǎj 'navel, centre'	
PEA *q'EsE ~ -s ^w -, -λ ^w - 'half, one of a pair'	*hāmçĚ 'half, middle'		*ʔaʔl 'half'
*wama 'edge' (< *q' ^w -)	*hqwěmV 'horn; head'	*khām 'bank, shore'	
*hE [negative stem]	*fiwV 'not (negative particle)'	[*Ha] 'negative particle'	
PEA *dE [negative stem]	*dV 'a negative particle'	*tǎ (~ d-) 'stop, prevent; prohibitive particle'	*ʔat / *ta- 'negative particle'
*q'V [negative particle]	*-k- ? 'negative / prohibitive'		
*k' ^w V [diminutive suffix]	*kĀ 'a suffix (diminutive or singulative)'		
PEA *q'V [locative postposition]	*-k- / *-g- 'some locative series'		

NUMERALS

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
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*di 'two'	*tqHwā 'two'	*KV	*xina 'two'
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PEOPLE

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
*λimV 'man, male'	*łiwŁĚ / *łiwłV̄ 'man, male'	[*łik 'testicle; glans penis']	
PEA *qE 'woman'	*qwānV 'woman'		*qVm- (~χ-) 'woman'
PEA *hAna ~ -r- 'mother'	*ʔānV(jV) mother	*nējH 'elder female relative'	
PEA *dA 'father' и *ta 'father'	*dājV / *dādājV 'father; mother'		
*kÉλ'E 'youth, nephew, young brother' (также PEA *qE 'child')	*qVlē (~ q̄-, -i) 'child, young one'		
*yaʒa, *yasa 'small'	*HVnsV 'small'		
PEA *čĚk'wE, *k'wEč'E ~ -s'- 'small'	*čākū / *čākū 'young (of animals), boy'		
PEA *dĚk'wi 'short'	*kHōtwV̄/ *kWHōtV̄ 'short; short-eared (hornless) animal'		*tu(?)K- 'short'
*śwAna 'old (person, animal); old age'	*śwānĭ 'year'	*nīŋ (s-) 'year'	*siŋ 'old, withered'
PEA *č'E 'master, god'	*bičē (~-ä-, -ī) 'moral experience; god'		
*sə (*sərV, *wVsərV ?) 'name'	*ʒwěrhĭ 'name'	*Cǎ 'name'	
*sE 'voice'	*jīšwǎ 'voice, song'	*śa 'sing'	
*ʔis'wV ~ n- 'call, summon'	*=čłwV 'to call, cry, sing'	*lō 'sing'	
*ʔAχa 'hear; (caus.) make hear, deceive'	*=łqĚ 'to know; to hear'		
PEA *č'Aq'E, *č'AGE 'hear'	*χVčV (~ x-) 'to hear' (нахско- хуьрр.-ур.)		
*č'wE 'good, well' и *ʒwi 'good, pleasant'	*ʔV(n)ʒV good	*ca 'great, big'	

*qiwV ~ *q ^w i'sit (pl.)'	*=i ^q wV 'to sit; to be'	*kǎ (~ g-, q-, G-, -t) 'sit, dwell'	*xu- 'to sit'
*tō 'lie prone, sleep'	*=V ^t wV 'to lie, to sleep' (WC *t ^w V 'to sit')	*tūŋ / *tūk 'sit, stay'	
*hEλα 'sleep'	*hēmλǎ 'dream' (также *=HVwλ ^ǎ n 'to sleep')	*mǎŋ (/ *mǎk) 'dream'	
*ʔa 'be in position, lie, sit'	*=eʔ(w)Vr 'to sit, be quiet'	*yēr [rather *ʔēr] 'prepare (food), feast'	
PEA *ʔVyA 'be in position/situation, happen; do'	*=ǎhwV(r) 'to do'	*q ^w [i]ǎj (~ *ʔ ^w -) 'make; divide, distribute'	*wVǔ- (~*b-) 'to do, make'
PEA *čA 'ill, sick, tired'	*ʔǎžĚ (~ -ǎ-, -ǎ-) 'to be ill, feel pain'	*žhaj 'illness, disease'	
PEA *qA 'come, go, move'	*=i ^χ wV (~ -q-) 'to go, to come, to enter'		
PEA *dE 'move through space (go, fly, fall) [plural]'	*=ǎtV 'move, go, come'	*tiǎ 'to go'	Kott. it- / ot- 'come'
*hāwa 'move, go (unseen or imperceptibly)'	*=VʔwV(r) 'to go, to come'		
*c ^w iñE 'flee, run to safety'	*=i ^λ wVn 'to run'	*loŋH (p-) 'run, jump'	
PEA *χAna ~ -r-, *χA 'in a hurry, quickly, fast'	*=arkV (~ -ǎ-, -ǎ-) 'to walk, to run' и *=ilqwǎ 'to run'	*kriǎ(H) (~g-, -ŋ) 'walk, go'	
PEA *q ^w E 'run, chase'	*=ilqwǎ 'to run'	{*loŋH (p-) 'run, jump'}	
*ž ^w A 'frightened, startled, shocked'	*hVmčV 'fear, fright; unpleasant emotion'		
PEA *ʔVyA 'go, walk, come'	*=VʔwV(r) 'to go, to come'		
*qaGV 'fall, alight, squat'	*=aqwV 'to fall, to lie; to get into'		*ʔa(?)q-ǎt- (~G-, -χ-) 'to sleep'
*χamazə, *χamasə 'itch, tickle'	*HVǔžVw- 'to itch, to hurt'		
*χα 'kill, fight'	*=ilqwV- (/ *ilχwV-) 'to die'	*k ^w ǎ (-t; ~ g ^w -, q ^w -, G ^w -) 'old, weak'	*ʔǎž- (~x-, -ž-) 'to be ill'

	(plur. subject), die out ' + *=ilq _w V- (/*=ilχ _w V-) 'to kill, slaughter'		
PEA *x ^w A 'eat'	*ʔik ^w Vn 'to eat'	*kōm(H) (~g-) 'hold in mouth'	
*ʔVriq'E 'swallow, carry in mouth'	*HēmGĀ 'to bite'	*k(h)ejH 'bite'	
PEA *cAλGa ~ c ^w -, λ ^w - 'hold in mouth, beak, clench between teeth'	*čalk ^w V-/*čalq ^w V- 'to chew, bite'	*čik ~ *ć(h)- 'bite'	
PEA *ʔAλ'a 'chew, bite'	*=iʔwVl 'to feed on, to eat; to bite'	*q(h) ^w iōr 'present of food; appetite'	*ʔir- (~x-) 'to eat'
PEA *G ^w Ec'i ~ -c ^w -, -λ ^w - 'gnaw'; *q'E ^w c'a ~ -c ^w -, -λ ^w - 'click, snap, bite' и PND *χAč'a, *χAša 'gnaw, chew, bite'; PEA *χAč'a, *χAša 'gnaw, chew, bite'	*qāčī (~ū) 'piece; bite, incision'	*qāt 'cut, cleave'	
PEA *x ^w A 'grow'	*=eg(w)V 'to grow'		
PEA *χA 'make, become'	*=HōqĒ 'to do, make; to be, become'		
*q ^w EGə, -a 'cough'	*qēʔV 'cough'	*ghāk 'cough'	*χα(?)χtVm 'cough'
*c ^w a 'change, distribute'	*=i ^c V (~-ä-) 'to sell, distribute'		

HOUSEHOLD

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
*χAra 'house'	*qālv 'house, hut'	*krā (~g-) 'house, palace'	
*ʔwAnV (< *q ^w -) 'house'	*GwinʔV (~-h-, -ʔ-) 'village; house'	*qīm (~ *q ^w im) 'house'	*χuʔŋ 'houses', secondarily χuʔ-s 'house'
*ʔišə 'string'	*rʔēcwV / *čwVrʔV 'string,	*r-sə 'sinew, tendon'	

	bow-string'		
*χi 'carry on back'; *χi-ri 'pack'	*=iχV 'to carry, bear'; r-[ã]χV 'load, burden'		*?eq- (~-χ-) 'to load (off)'
*xãžwi 'strength, work'	*çãqV 'strength, power'	*chăk 'hard, difficult'	*sa(?)kar- (~-g-, -G-) 'hard'
*dAžV 'fire rubbing sticks, firewood'	*dũčV 'wood, firewood'		
*λEs(w)č'wE 'board, plank; piece of firewood'	*jälčwV 'stick, branch; wedge, stake'		
*wiğšə 'stone; stone knife'	*mHōK(V)ćV 'flint'		
PEA *χEžwa, *χEža, *χEgwa 'hook, harpoon, spear (vb.)'	*GhVñVçā (~-ə) 'hook'		
*s ^w ak'wa, *s ^w agwa, *s ^w ax'wa 'shell, pot'	*lēqV 'a k. of vessel'		
*qAk'wE 'basket'	*qwāqwV (~ χw) 'trough; basket'	*guāk (~ *G-) 'a k. of receptacle'	*qək- (~-χ-) 'spoon'
PEA *qAt'a 'patch'	*dHeqV 'spot, patch'		
*čiχ'E, *č'wiχ'E, *š(w)iχ'E 'hook'	*čũkwV / *čũkV 'to be hooked, curved; hook'		
*š'E ~ s'- 'corner'	*mūrzwě 'corner, edge'		
*šwəx'ə 'whittle, shave, carve; knife'	*čwiķV 'knife'	*chīk ^w 'axe, chop, chisel'	*čok 'axe'
*xEŠE 'pole in trap'	*GHwälcV 'stick, board; bolt'		*qēž- (~-χ-) 'pole'
*g ^w Egš'E ~ -s'- 'point(ed), corner' (cf. PEA *q'A 'edge')	*kweķě (~-ă-, -i) 'edge, point, corner'	*kēk ^w (~ g-, q-, G-) ' limit'	
*tEk'wa 'dig out, clean out/off'	*HrīkV 'to bore, dig'	*ruak (k-) 'cavity'	*?uK- (~-x-) 'to dig'
*c ^w AK'E, *c ^w Ac'E 'sharp, (sharp) edge'	*çəqV (~ -ō-, -ě-) 'sharp'		*t[i](?)qəž- 'scraper, strickle'
*ca 'sharpen'	*füžwĀ 'sharp, to sharpen'		*?ete 'sharp'
*GAs'a 'rip, scratch'	*čVqV / *qVčV 'to		*ž[e](?)χV 'to shave'

и PEA *cEχa ~ c ^w -, λ ^w - 'cut, scrape flesh from skin'; *sEnχ ^{wE} ~ s ^w -, λ ^w - 'scrape, rake, draw a line'	scratch, rub' и *çax(w)V / *ccaχ(w)V 'to scrape, scratch'		
*χAšə 'curve'	*q̇wHěmçV 'hook, curved' (и *kīçwī 'hook, curved')		*kēc (~ g-, -ž) 'to bend'
PEA *nAq'E ~ r- 'strain, tense'	*=āGwV 'thick (of liquids)'	OC 厚 *gō? thick	*ha(?)GVÍ 'cloggy, sludgy'
PEA *tAč'a (?) 'become flat, collapse'	*HičĀn (~ -č-) 'to press, squeeze'		*žāj 'to knead, rub'

WEAVING

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
*λ'iwi 'tie, wrap, knit'	*=VλwE(n) (~ -λλ-) 'to bind, knit, plait'	*lām (~λ-) 'spin, wind'	
*dEz ^{wE} , *dEc ^{wE} 'twist, spin'	*=īzV 'to spin'		
*GimVc ^{wV} 'twist, squeeze, clasp'	*=HižĀ[m] 'to twist, bend, wind'		*?u?ž (~ x-) 'curved'
PEA *wEc'E ~ h ^w -, ? ^w -, -c ^w -, -λ ^w - 'weave'	*HrVčĒ 'to weave, plait'		
PEA *wEnc'a ~ h ^w -, ? ^w -; *wEnč ^w a 'round'	*?VwśVr 'to turn round, spin'		
PEA *χEλα 'wind, coil, tie (with rope)'	? *=ilχun 'to bind, tie'	*qhwił 'twist, wind'	
*?aG ^{wV} , *?aχ ^{wV} ~ n 'tie, weave'	*=iqār 'to weave'		
*qA 'sew'	*?irχwVr 'to sew'		

ENVIRONMENT

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
*swa 'luminary (sun, moon); south'	*zwhārī / *zwhārī (~ -ē) 'star'	*cer (~-iə-) 'shine, sunshine'	
*qä 'day, dawn'	*HwīqV 'day'		*xi?-G, *xi-Ga 'day'
*χ'ama 'fire, burn'	*=īkwVmV 'to		

	burn, set on fire'		
PEA *q ^w EnE ~ -r- 'fire'	*kwǎnhV (/ *hǎkwānV) 'light, torch'	OC 光 *k ^w āṅ 'light'	*gəʔn- 'light'
PEA *š ^w Exa 'shine, bright, white'	*ćakwV- 'white, yellow'		*täʔk-
*q ^w əsE, *G ^w əs'E 'cloud'	*ʔāmsa (~ -ə, -i) 'sky, cloud; soul, breath; god'	{*siā 'live, breathe'}	*ʔes 'God, sky'
*x ^w iλ'i 'blow, breathe; tangle, mess (blowing)'	*λwǎʔV 'wind, to blow'	*lij (*lūj) 'wind, breeze'	*jul- (~ ʔ-, x-) 'whirlwind, wind'
*yAχza 'ice, snow'	*jāmzǎ 'snow'		
*šəχ ^w a 'frost, hoar- frost'	*šax(w)V 'dew, hoar-frost'		
PEA *q'E 'cool'	*=HīGĀ 'to freeze, get cold, be benumbed'	*Kja(j)H 'thick (of fluids), congealed'	*qo (~χ-) 'ice'
PEA *χAya 'cold wind, winter'	*=HǎχwV 'to get cold, freeze'		
PEA *λAwi 'cold, freeze; ice, frost, hail, icicle, glacier'	*mhēlǎe 'cold'		
*š ^w āmi 'summer; autumn (> north wind)'	*cōjwǎlfV 'autumn, winter (rainy season)'	OC 秋 *čhiw 'autumn'	*sir ₁ - 'summer'
*ca 'stone, rock, mountain'	*hēmVcō (~ ʔ-, -z-) 'stone'		
*cEmi 'strong, hard'	*cēbV (/ *cēpV) (~ -ā-) 'big stone; hard'		
*ta 'water'	*=VṭwV 'to pour, soak'	*tujH 'water'	*ʔut- (~ x-) 'wet'
*t'Ara 'soak' (и *λ'Et'i 'pour, scatter')	*=itVl 'to drip, drop, pour; wet'		
*häna, *hāna 'water (current), river'	*xǎnhǎ 'water'	*χiw(s) 'water, moisture'	*ʔä(?)ń (~x-) 'wave'
*ʔ ^w arE 'lake'	*hwiri 'lake, pond'	*ri(a)j 'water'	*xur ₁ 'water'
*xArə 'pour, stream'	*HVqVr 'to drink; to pour, flow'	*G(h)ör (~ χ-, ʔ-) 'soak, leak'	
*diwš'i ~ s' 'mucus, soot'	*tḥVrēwV 'dirt; bog'		
*tEwt'E 'mud,	*tēmtV 'dirt, dust'		

shavings'			
*λ'is ^w a 'trash, dirt' и PEA *c'Eλ'i ~ *c ^w -, λ ^w - 'dirt, glue'	*λwilçwV 'dirt; slough, marsh'		
*λāχ ^w žV 'soil, mud, clay' и PEA *λ'Ežə, *λEžə 'clay (white, blue); slush, soft wet snow; swamp'	*lujžV 'clay'		
PEA *λims ^w i ~ s ^w , s 'dirt, mold'	*lōmVžī (~ -ē) 'dirt, earth'		
*ž ^w əwna, *žəwna 'muddy water, menstrual blood'	*çĀwnV 'dirt, dungwash; urine'	? *[ch]iŋ 'moist; soak'	*siñ- 'dirt'
*š'āxi ~ s'- 'dust, sand, ashes, particles of dirt'	*šaxwA (~ š-, -ə-) 'dust, mould' + *čHīqwĀ (~ *č-, - G-) 'dung, ordure, dirt'		
*ž ^w Ewχ'ə 'pitch, gum'			*žik (~-g,-χ) 'resin, gum' (+ Bur *ćiki 'musk (from the navel of a mountain goat')
*s'ä 'clay, alluvial silt'	*čĤēpī (/b-) 'slime, clay; to plaster'	? *čāp 'join, connect'	
*xAk'a 'dry'	*GwiGwVr- 'dry, to dry' (or *=iGwĀr 'dry, to dry')	*g(h)jāk 'dry; coated, caked'	*qV[?G]i- 'dry'
*qimiχ'sV 'hole, sore'	*qHwaçi 'hole, hollow'		*qīž- (~χ-) 'to dig'
*q ^w Erə 'den'	*kHwērV 'hole, pit, ravine'		*g[a](?)r 'cunnus'
*χ'imci 'sour, stinking'	*fmVjčwĀ 'sour'	*[žh]um 'salt'	
*wEmx ^(w) a ~ ? ^w -, h ^w - 'stinking; currants' и *nix ^w i 'nose, smell'	*HmīfwV 'smell, odour; cry; an odorous grass'		*bej 'wind'
PEA *g ^w Eχc'V (?) 'dirty, sticky' и *GEq'sa 'dirt, soot,	*GožV 'green colour; dirt'; *qānVçwV 'dirt';		*qe?s 'sand, sandy shore'

earwax'	*čHǎq̄wǎ (~ *č-, -G-) 'dung, ordure, dirt'		
PEA *χE 'point, end'	*=ǎf ^w V 'edge, point; face'		

ANIMALS AND PLANTS

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
*GAGə 'animal, mammal'	*bHVrgǎ 'a beast of prey'	OC *prāk	
*k ^w E ^d i 'breed, animal's young'	*k ^w ǎrnV young (of an animal)	*kruŋ 'be born; plant'	
*G ^w ǎža 'wolf'	*g ^w ǎžē 'bitch, dog'		
*k ^w ǎLE 'to bark'	*Helq ^w ǎ 'to bark'		
*č ^w ǎnǎsi, *nǎsǎč ^w i 'fur-bearing animals (otter, wolverine, muskrat)'	*č ^w ǎn [?] V (~ -f-)'game, wild animal'		
*čE, *čEžE 'mouse, vole'	*jVc ^w ǎ 'mouse'	*jū(s) (/ -n) 'a k. of small animal (hare, rabbit, rat)'	*jūta 'mouse'
*s'ə ^w lǎk ^w E, *c'ə ^w lǎx ^w E 'squirrel'	*cǎrg ^w ǎ (~ -ǎ, -ā) 'weasel, marten'	*sreŋ(H) 'a k. of small animal (weasel, squirrel, mongoose)'	*sa [?] qa 'squirrel'
*k ^w ič ^w i, *k ^w iči, *g ^w iči 'mink [американская норка], marten' и PEA *χV[r]Aša 'marten'	*f ^w Vlǎžǎ 'marten, weasel; hedgehog' и *χHVr[č]V 'marten; otter'		*χa(?)s (~k-) 'badger'
*Gaχa 'hare'	*G ^w ǎr [?] e 'hare'	*qh ^w ǎr (~*G ^w -) 'a k. of small animal (badger, ground-rat)'	
*c'ik ^w i, *c'izik ^w i 'bird (small singing - generic)' и *šix ^w i 'robin [странствующий дрозд (Turdus migratorius)]'	*šakV / *šakV (~ *š-) 'a k. of small bird' и *žǎq ^w V 'a k. of small bird'	OC *shiak 'magpie'	
*g ^w išx ^w i, *χišx ^w i 'blue jay (Cyanocitta	*wiqVśV / *wiśχV 'a bird or animal of		

stelleri), gray jay (Perisoreus canadensis)'	prey'		
*Ga, *GaGa 'crow, raven'	*ġHwāyV 'raven, crow, jackdaw'		
*qə, *qəqV, *q'əq'V 'waterfowl (merganser, red-necked grebe)'	*ġērēq̄wV 'crane'	OC 鶴 *g(h)āk ^w 'crane'	
*čA 'hawk'	*čwām?V̄ / *?ār- čwām?V̄ 'eagle'	LB *dzwan 'hawk, kite'	
PEA *č'Ewšt'E 'maggots, eggs of blowfly'	*čVrčV / *čVrčV 'lizard; snake, worm'		
*ča, *čaš'a 'salmon, trout'	*čHārV 'fish'	{*žhVr 'rain'}	
*λEq'wi, *λ'EGwi 'salmon, fish (generic)'	*mHilaGwV / *GHwimalV (~ -t-) 'worm'	*lōḡH / *lōk [if < *m-lōḡH / -k] 'worm, maggot'	
*G ^w əma, *wəma 'maggot, worm'	*GHwōpV 'a k. of worm or reptile'		
PEA *χEwχE, *GEwGE 'insect, worm'	*ġāwq̄(w)i 'moth; worm'		
PEA *nEsE ~ r-, -s ^w -, - λ ^w - 'tree (generic), spruce, pine'	*rašwē 'tree, wood' [и *fiwmīččē 'a coniferous tree']		
*?AsE 'tree'	*?īrcV 'stick, wood'		
*č ^w Aλ'E, *č'Aλ'E 'willow'	*čwhēli (~ -ŋ-, -t-) 'a k. of foliage tree (willow/ash-tree)'	*səl 'willow/oak'	
PEA *?AλE 'boughs with needles, branches'	*?ātV 'branch'	*jəl (/r) 'sprout, branch'	*?u?lan (~ x-, j-) 'rod, twig'
*čiwri 'knot, limb, branch'	*čhwērə 'hair; switch, long branch'		
PEA *χAya 'stump of tree, roots'	*Gwīr?i (~ -h-, -ō-) 'root, stalk; leaf'	*q ^w rā 'flower; beard (on spikes)'	
*čEwrə 'grass (generic)'	*čwirV 'a k. of fruit'		*sa?r ₁ 'tobacco'
*λ'ət'E 'cranberry'	*ładV 'a k. of berry'		

PEA *q ^w Aλ'a, *q ^w Aλ'a 'salmonberry, cloudberry (Rubus sp.)'	*kāhIV 'a k. of berry'		
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BODY PARTS

Na-Dene	North Caucasian	Sino-Tibetan	Yenisseian
*λiyínə ~ λ- 'bloody meat, sappy wood	*λĒwnV (~ λ-, x-) 'internal fat; blood'	*λiāŋ (? ~ -m) 'heart'	
*diλE 'blood, pitch'	*rāλĭ 'meat, flesh'	*rək 'intestine'	*rēli 'blood water'
*tEχ ^w E 'heart; beat (of heart)'	*jērķwĭ 'heart'	*ʔrəŋ // *ʔrək 'breast'	*tə(?)ga 'breast'
*λ ^w ə, *λ ^w əni 'head'	*wēnλV 'head'	*lūH 'head'	
*ša 'head, horn'	*bĭnšwV 'horn'		
*da 'forehead, face, shiplap'	*ʔēndū 'forehead' (+*fīwōmdV 'head, brain')	*thō (~ dh-, -əw) 'head'	
*t'a, *ta 'forehead, face, shiplap'	*nHātV 'forehead, face'		
PEA *dA 'mouth (exterior), orifice'	*dānʔī (~-ū) 'cheek; gum'	{*tāŋ(H) (~d-) 'palm of hand; buttock'}	
*λ ^w a 'mouth (interior)'	*HλəIV (~-ō-) 'mouth; jaw'		*jīl- (~x-, ʔ-) 'gills'
*χ'aš'E ~ -s'- 'jaw'	*χinčV 'cheek; jaw'		
*λ'āwt'i 'tongue'	*λānpV 'lip'	*λep 'tongue, lick'	*ʔalVp (~-l-, -r ₁ -, -b) 'tongue'
*wəš'E, *wəšE 'cheek'	*wīse (~-a) 'cheek; southern slope'		
*waGa 'eye'	? *wīmqV 'witness; true'	*mjVĭk 'eye'	*ʔəqa- (~-χ-) 'to be visible'
*rə 'face; eye (in comp.)'	*ʔwīlʔi 'eye'		*de-s 'eye'
*s'āri 'eyebrow'	*čīIV (~çç-, -t-) 'eyelash (in comp.)'		
*dEχ ^w E 'thorax, back'	*dHāqwĀ 'back of head, neck'	*tūk 'neck'	*tuGV (~ -ū-) 'back, behind'
PEA *šĒk ^w E 'body excluding extremities, torso, chest, belly'	*čōrχV 'body'		
*šix ^w E 'side, lateral	*HīšiwV(-ĭ) 'side'		

appendix'			
*λAg ^w E 'part of fish above tail, air bladder'	*lĕGwV (~ r-) 'urinary bladder' (и *fnōrk ^w V 'urine, urinary bladder')	{*nĕk ^w 'filth, dirt'}	
*x ^w EdE 'breast, chest'	*qVdV (~ χχ-) 'brisket'		*qot- (~χ-) 'in front, before'
*HI[a]λV 'breast; back'	PEA *χ ^w Eλa 'collarbone, breastbone'		
PEA *wA, *wAwa 'breast (female); milk'	*babV 'mother'		
*ġäq'ə 'trachea, (wind)pipe, throat'	*qāqari / *qāraqi 'throat'	(Tib. m-gur 'throat, neck'); *Krōŋ	*gə(ʔ)n ^k əf 'Adam's apple, throat'
*ġ ^w Enži, -č'- 'gristle' и *q'inq'sə ~ -χ'- 'scab; gristle'	*qām[s]V 'cartilage, gristle'		
PEA *c'A ~ c' ^w -, λ' ^w - 'umbilical cord'	*zōn'ū 'navel'		
PEA *q' ^w Emi ~ -ŋ ^w - 'fish-eggs, roe'	*k ^u nHV 'kidney'	*gjVnH (~ G-) 'kidney'	
*ġ ^w iši 'vagina'	*kħəlčV (~ -h-, -č-) 'hole; vulva'		*gV(ʔ)ns- 'testiculi; penis'
*č'Ēk' ^w i 'interior part; intestines'	*kwičĚ / *čikwĚ 'spleen; intestine(s)'		
*č' ^w Aχ'V 'fish kidney; rennet'	*qwičV / *čiqwV (~ä-) 'spleen; small intestine'		
*χ'E 'foot, track'	*qHwVIV (~-t-) 'heel; ankle'		*χə(ʔ)IV[č]iG ^z hoofə
*Gi 'forearm, foreleg'	*qil'pi 'elbow; arm, wing' (также *q ^w [ā]t'V 'arm; bosom, armpit')	*kh ^w ēr (~ gh ^w -) 'fist, hollow of hand with fingers bent'	*gVʔVr ?? (*gVx-) 'hand'
PEA *GE ⁿ a ~ -r- 'arm; foreleg'	*nH ^w GĀ / *GHwñĀ 'arm, shoulder; armpit'	OC 肩 *kēn 'shoulder'	*ke(ʔ)n- 'shoulder joint'
*qi 'foot'	*GĕbV (~ *β-, -w-) 'foot'	*k(h)ap 'fork of legs'	*qoʔp (~χ-, -ə-) 'part of leg'
*χ ^w Es'E 'leg, knuckle'	*gwīzV 'part of leg'		*ka(ʔ)ssad (~ ā) 'foot sole'
*χ' ^w āk'E 'carcass of	*qām ^q (w)ă (~ -ă)	{*kūk 'bend'}	

small game, fish bones, gills'	'knee, leg-bone'		
*χ ^w əš ^v ~ -s'- 'foot, hand, forepaw'	*kHwanš ^v (~-ě-, -ō-, -ś-) 'foot, leg'		*kiʔs (~g-) 'foot, leg'
*čEq'E 'nail, hoof'	*čV[1]k ^v V 'hoof, foot'	*ćok / *ćoŋ 'foot'	
*g ^w Enši 'thumb' и PEA *k ^w Enš'ə ~ -č'- (?) 'thumb'	*kăsi (~-ə, -a) 'finger'		
*χEz ^w E 'shoulder, upper arm'	*qărçw ^v 'shoulder, arm'		
*dEχ ^w E 'outer side of foot up to the anklebone, calf'	*tHălq ^w V / *q̇q ^w Hăl ^t V 'part of leg'	*dēk 'hoof; kick'	
*q ^w əŁV 'side, flank'	*Gw[ũ]tō (~-ǎ) 'side'		*χolab 'side, half'
PEA *G ^w E(n)dE 'knee'	*q̇wHəntV 'knee; elbow'	*kūt 'bone, bone of hand'	*g[i](?)d 'elbow, joint; to bend'
PEA *G ^w Eg ^(w) a 'joint(s)'	*kă[1]k ^v V 'joint, knee, shin'	*kăŋ / *kăk (r-) 'leg, foot'	
PEA *λAra 'hand, upper leg'	*λōrə (/ *rōλə) 'hand, hand-bone'		
PEA *q ^w Aša 'boned carcass, bones with meat; stiffen'	*kōça (~-e) 'a k. of bone'		
PEA *c ^w AnGE, λ'- 'bark, hide' (также PND *c ^w əχk'i 'body, inside of skin')	*zānk ^w V 'skin'	*CVk 'skin, bark'	*tuŋ (~-ū-) 'skin for making belts'
PEA *λAñE ~ -ŋ- 'bark (tree), strong rawhide'	*tēʔwni (~-ʔ-) 'skin (of an animal)'	Tib. lwa-ba 'skin of wild animal'	*dāñ- 'bast, willow bark'
PEA *qAŁa 'skin, bark'	*GōŁV 'skin, wineskin; sheath'		
PEA *G ^w Ec'i ~ -c ^w -, -λ ^w - 'scales'	*Gělčw ^v 'skin' и *qHăcwa (~-e) 'skin'		*χăʔz 'upper clothes'
*s ^w əs'E 'fish skin'	*λwājçā (~-ǎ) 'skin, bark'		
*čwīžE 'hair, fur, tinder'	*čōlči (~-e) 'fringe, hair-lock'		
*χəwra 'hair'	*kăwrV 'hair'	*ră (*k-ră) 'hair'	
*t'awa 'feather'	*t'āmV 'wing' < *t'āmV	*[t]ām	

* λ A χ a 'grease, greasy, moldy'	* $\lambda\check{e}n(H)V$ (~ λ -) 'fat, butter'	? OC 油 * Lu 'oil'	
*GA χ 'a 'stout, fat' + PEA * χ 'E χ a ~ q'- 'fat (n., adj.)'	* $\hbar\bar{a}n\hbar V$ 'fat (adj.)'		
* χ i 'oil, grease'	* $\chi w\check{i}l\text{?}i$ (~ - t -, - f -, - e)		
* $\chi i\lambda^{wE}$ 'pus, semen, viscous matter, foam'	* $\lambda w\check{e}[n]\chi V$ 'pus; snot'	* $li\eta$ (~-ai η) (p-) 'pus, abscess'	
* $ti\bar{x}^{wE}$, * $ti\chi^{wE}$ 'spit, saliva'	* $tw\text{?}jV$ 'spit, spittle'	* $th\bar{o}j$ 'spit, spittle'	