

**“Dene-Yeniseian” and the Rest of Dene-Caucasian:
Part 3: The Burusho-Yeniseian (Karasuk) Hypothesis
Part 4: Burusho-Dene¹**

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0. The recent interest in a possible genetic relationship between the Yeniseian languages of Siberia and the Na-Dene² (or AET) languages of North America is potentially a major breakthrough, with Edward Vajda’s work having convinced some mainstream historical linguists that there may indeed be a verifiable linguistic bridge between Asian and American peoples.³ My thesis in this paper is that this “Dene-Yeniseian” (D-Y) link indeed represents a valid genetic relationship, but also that to think of D-Y simply as a binary relationship is inadequate, since over the past eight decades some linguists have gradually been developing a hypothesis of a chronologically deeper and geographically wider (macro-)family, now known as Sino-Caucasian or Dene-Caucasian (DC).⁴ As I hope to show in what follows, there are many benefits to expanding the scope of our discussion to include earlier proposals that connect Yeniseian or Na-Dene (or both) to the other putative branches of Dene-Caucasian.⁵

Sydney Lamb (1959) has proposed some criteria that can be helpful in dealing with these kinds of hypotheses of linguistic classification. He distinguishes between ER (“established relationship”) classification (exemplified by Indo-European, Austronesian, Bantu – universally accepted classifications) and PT (“probable truth”) classifications (such as Nostratic, Dene-Caucasian, Khoisan).⁶ ER classifications can be characterized as “highly probable,” so much so that few if any historical linguists doubt their validity. PT classifications are fully accepted by some, provisionally accepted by others (for the lack of a better alternative), and flatly rejected by others who think there is not enough evidence for them.

¹ In a more comprehensive paper written for this conference, and privately circulated, I also discussed some other binary subsets of Dene-Caucasian, namely “Sino-Dene” (Sapir, et al.), and “Dene-Caucasian” (Nikolayev 1991). Due to the space constraints of this volume the current discussion is limited to the Burusho-Yeniseian subset, and a brief look at Burusho-Dene. The case for including Basque in Dene-Caucasian has been made in several of my other papers, e.g. Bengtson (1997b, 2003, 2005, 2008a, etc.), but is discussed here only in passing. Swadesh’s hypothesis of Basque-Dennean (Vascodene) should be mentioned. It was much more inclusive than any version of Dene-Caucasian, encompassing Basque, Caucasian, Ural-Altaic, Dravidian, Tibeto-Burman, Chinese, Austronesian, Japanese, Chukchi, Eskimo-Aleut, Wakashan, and Na-Dene (Swadesh 1960, 1971). Basque-Dennean was a predecessor of the recent “Borean” hypothesis (Fleming 1991, Gell-Mann et al. 2009).

² In this paper the term “Na-Dene” refers to Sapir’s original (1915) taxon, including Athabaskan, Tlingit, and Haida (plus Eyak, which was not well-known to Sapir). This is in agreement with Manaster Ramer (1996) and Enrico (2004) that although some parts of Sapir’s evidence for including Haida have been shown to be invalid, arguments for excluding Haida from Na-Dene are not sufficient to overturn Sapir’s classification. This position is also agreed to by Greenberg (e.g. Greenberg & Ruhlen 1992), Ruhlen (e.g. 1994b), and most emphatically by Pinnow (e.g. 1966, 1985, 2006b).

³ It should be remembered that the focus on “Dene-Yeniseian” (DY) was spearheaded by Merritt Ruhlen (1998a), though Ruhlen always viewed DY as a subset of the larger Dene-Caucasian (macro-)family: see Ruhlen (1996, 1998b, 2001a), Starostin & Ruhlen (1994).

⁴ Some rather vague hints of Dene-Caucasian can be traced back even farther, e.g. Hodgson (1853).

⁵ The author regards the following as firm members of DC: Vasconic (Basque), Caucasian ([North-]East and [North-]West, but not Kartvelian), Burushaski, Yeniseian, and Na-Dene. See Bengtson (2008a, 2008c), Starostin (2005b).

⁶ These examples are suggested by me (JDB), not by Lamb.

Somewhere between these extremes (ER and PT) Lamb suggests another type: PR (“probable relationship”) classification. Here would belong families such as Afro-Asiatic (Afrasian) and Niger-Congo, which are widely accepted among Africanists, even though there are no widely accepted sound correspondences for either family, and even grammatical evidence (in some sub-taxa) is rather meager. The corresponding level in Nichols’ terminology is “quasi-genetic” (e.g., Nichols 1993).⁷ See the discussions in Heine & Nurse (2000); and Lamb (2001).

As one who has been working on the PT relationship Dene-Caucasian (DC) for two decades, I welcome Edward Vajda’s recent call for mainstream and “long-ranger” linguists to put aside their traditional “lumper vs. splitter” mentalities, and do what anthropologists are supposed to do: objectively and fairly evaluate the evidence and produce the best possible explanation (Bengtson 2008c), always of course subject to rigorous testing:

It is best to reserve judgement on the position of Yeniseian among the world's language families until more work has been done on Dene-Yeniseian lexical parallels and until a broader assessment of S. Starostin's (1982) “Sino-Caucasian” proposal can be made in light of the full body of evidence accumulated so far ... (Vajda 2009).

Here I would like to contribute to this process by discussing some of the evidence for one of the binary subsets of DC, Burusho-Yeniseian, also known as “Karasuk.” It should be understood throughout that this binary subset, in my opinion, can only be more fully understood in the context of the older and deeper entity, “Dene-Caucasian.”

For the following exposition and discussion of evidence we are heavily indebted to the pioneering “Sino-Caucasianists” Bouda, Sapir, Shafer, Trombetti, Tailleur, Dulson, Toporov (and others), and to more recent researchers, most prominently the late Sergei A. Starostin. (See references.) The evidence sketched below includes both grammatical and lexical evidence.

1. Burusho-Yeniseian (Karasuk): General Remarks

The hypothesis of a genetic relationship between the Burushaski language of Pakistan and the Yeniseian language family of Siberia was explored by several twentieth century scholars. For some early efforts see, e.g., Bouda (1950, 1957, 1964, 1968), Tailleur (1958, 1994), Dulson (1968), Toporov (1971). From a geographic standpoint this idea is quite plausible, since the homeland of the Yeniseian family once extended much farther south than the present territory of Ket. Toponyms indicate that Yeniseian speakers “once occupied a vast area of South Siberia and Inner Asia ... from at least northern Kazakhstan and the upper Irtysh watershed to the Altai-Sayan mountains and westward to the Angara River basin” (quote from Vajda 1998, based on Dulson 1959; see also Blažek 1995), placing them within some 800 miles of the present-day territory of Burushaski in the Hindu Kush.

⁷ I have to respectfully disagree with the idea that these relationships are “at a level ... deeper than the comparative method can reach” (Nichols 1993:73). While it is true that the comparison of modern languages separated by a time depth of ten or fifteen millennia may yield insufficient evidence of relatedness, it is usually possible to reconstruct intermediate parent languages, compare them, and thereby either find more convincing evidence for these deeper taxa, or information that will lead to the disconfirmation of the hypothesis. This is the Tower of Babel / Moscow School methodology, as typified by the late S.A. Starostin and colleagues (Bengtson 2008d).

The first to write about Burushaski in the context of Starostin’s Sino-Caucasian hypothesis (Caucasian + Sino-Tibetan + Yeniseian) was Ilia Peiros (1988). Since then see Bengtson (1997a, 2001, 2008a), Blažek & Bengtson (1995). S.A. Starostin made a large number of new Burushaski-Sino-Caucasian comparisons in the Tower of Babel database (TOB), and in some of his final compilations of Sino-Caucasian phonology and lexicon (Starostin 2005a, 2005b).

Recently the Burusho-Yeniseian relationship has been promoted by George van Driem under the name “Karasuk,” which van Driem identifies with the synonymous Bronze Age culture of Central Asia (van Driem 2001: 1184-1206). The linguistic evidence for “Karasuk” is quite abundant, but I view it as part of the evidence for the wider DC hypothesis.

2. Karasuk Personal Pronouns (1ps, 2ps)

Yeniseian languages and Burushaski share a number of unusual typological traits, among which are first person singular (1ps) and second person singular (2ps) pronouns with suppletive stems for direct and oblique forms. The 2ps forms of Yeniseian and Burushaski are clearly similar, with a direct stem of the type *(A)U* vs. an oblique stem of the type *K(U)*, while the first person singular forms are less obviously similar, but hypothetically relatable. According to S.A. Starostin these suppletive pronoun stems are inheritances from Proto-Sino-Caucasian, and similar suppletions are reconstructed for East Caucasian (Northeast Caucasian).⁸

Table 1: Karasuk personal pronouns.

		Yeniseian (Werner)	Yeniseian (Starostin)	Burushaski	Proto-DC (Starostin)
1 st person singular	direct	*ad(ə) / *ad̄(ə)	*ʔaʒ	*ǰa	*zV
	oblique		*b- / *ʔab- / *ŋ	*a-	*ŋV
2 nd person singular	direct	*əg(ə) / *ug(ə) ⁹	*ʔaw / *ʔu	*u-n	*wV
	oblique	*ukə	*kV- / *ʔVk- (*gV- / *ʔVg-)	*gu- / *go-	*xGV

⁸ Tuite (1998) cites these and other similarities between Caucasian and Burushaski (and Basque), but stops short of attributing them to genetic relationship. In my opinion these pronominal paradigms, along with a significant number of basic lexical parallels (e.g., Bur. **-ltur* ‘horn’ = Avar *λ:ar* ‘horn’; Bur. **huʧ* ‘foot’ = Avar *heʃ* ‘foot’; Bur. **huk* ‘dog’ = Avar *hoj* ‘dog’; Bur. **ɣunó* ‘seed’ = Avar *xon* ‘seed’, etc.) are more readily explained by genetic relationship than by borrowing (Bengtson 1997a).

⁹ S.A. Starostin disputed the existence of a velar in the direct form: “Werner 2, 318 - with an absolutely unacceptable reconstruction *əg(ə) / *ug(ə). All the above forms do not allow reconstructing any medial consonant of any kind, and the 2d p. plural Ket. *ᄃk(ŋ)*, Yug. *ɤkŋ / kɤkŋ* has a quite different, suppletive origin (see *kV- / *ʔVk-).” (TOB)

3. Karasuk Pronominal Affixes in the Verbal Template

The most obvious resemblance is the second-person singular morpheme, identical with the 2ps oblique morpheme, which is realized in transparently similar forms in Yeniseian and Burushaski.¹⁰

Burushaski (2ps verbal affix) *gú-/-kú-, gu-, gó-/-kó-, góo-/-kóo-*
 Yeniseian: Ket (2ps verbal affix) *k-, ku-*

Examples of 2ps markers:

Burushaski:	<i>du-kú-man-um-a</i>	‘thou wast born’ ¹¹
	<i>a-tú-ku-man-um-a</i>	‘thou wast not born’
	<i>go-γóy-am</i>	‘I will give thee’
Ket:	<i>u k-ansibet</i>	‘thou thinkest’
	<i>bu u da-ku-təŋ</i>	‘she sees thee’
Yug:	<i>du-k-tet</i>	‘he hits thee’

The same languages, according to Starostin, share common 1ps agreement markers, though their similarity has been obscured by phonetic changes. According to S.A. Starostin PDC initial **ŋ* changed to *0* or *h-* in Burushaski and initial **b* (via *(*ŋ- > *m-)* in Yeniseian, thus PDC 1sg. **ŋV* > Burushaski **a-/*á-*, Yeniseian initial **b-* / final **-ŋ* (Kott *-aŋ*).¹²

Examples of 1ps markers:

Burushaski:	<i>mo ja a-phús-u</i>	‘she tied me up’
	<i>je á-yan-um</i>	‘I fell asleep’
Yeniseian:		
Ket	<i>d-bo-k-b-i-taŋ</i>	‘he weds me’ (lit. ‘he-to-me-this-goes-around’)
Yug	<i>ba-ga:-b-de</i>	‘I hear’
Kott	<i>i-g-ej-aŋ</i>	‘I am born’

4. Karasuk Demonstrative Pronouns

The most striking parallels in demonstrative pronouns are those that have a base **ki-* in Yeniseian and Burushaski (with ablaut variant *kho-* in the latter):

- Ket (Pak, Sur) *kīdā* ‘this (m.) / *kida*⁶ ‘this’ (f., n.)
- Ket (southern) *kīr’* ‘this’ (m.) / *kīr’ε*⁶ ‘this’ (f., n.) / *kina*^{5,6} ‘these’

¹⁰ Except where otherwise indicated, Bur. forms are cited from the Hunza-Nager dialect.

¹¹ Archaic English glosses are used to make clear that the pronouns are in the singular number.

¹² See Starostin (2005a) for details about the reflexes of PDC **ŋ*.

- Burushaski (Y) *khin*, *khené* ‘this’ (hm-class) / *khomó* (hf-class) / *gusé*, *khos* (x-class) / *guté*, *khot* (y-class) ‘this’
- Burushaski (N) *khin(é)* ‘this’ (h-class) / *khos(é)* (x-class) / *khot(é)* (y-class)

The same stem produces words for ‘here, hence, hither’:

- Ket *kiśéŋ* ‘here’, *kińíl* ‘hence’, *kīńiŋə¹*, *kińiŋə⁵* ‘hither’
- Burushaski (Y) *khít*, *kho*, *akhó* ‘here’, (*a*)*khólum* ‘hence’, *akhíta*, *kho*, *akhó(la)* ‘hither’
- Burushaski (H, N) *khíti*, *akhiile*, *khóle* ‘here’, *khítum*, *khitélum* ‘hence’, *khíti*, *khóle* ‘hither’

5. Karasuk Interrogative Pronouns

Yeniseian and Burushaski have some similar interrogative pronouns made up of the elements **bV* + **sV*:

Yeniseian: Ket *biśéŋ* / *biśaŋ* (< *biśa:ŋ³*) ‘where’, *bi-śśé* ‘who’ (masc.), *bε-śa* ‘who’ (fem.)

Burushaski: (Y) *bésa*, *bése* ‘why’, (H, N) *bésan* ‘what, which’, *bése* ‘why’

In Caucasian cf. Archi *basa* ‘when’, Lezgi, Agul *mus*, etc., ‘when’. In Na-Dene (with various initial segments) cf. Tlingit *waasá* ‘how’, *daasá* ‘what’, *guusúu*, *guusú* ‘where’. Cf. also Basque **no-is* ‘when’. The **sV* interrogative occurs independently throughout DC, e.g. Yug *assa* ‘what’, Ubykh *sa* ‘what’, Basque **se-r* ‘what’, Tibetan *su* ‘who’, etc.

Another DC interrogative element is seen in Ket *anet*, *ana* ‘who’, *anun* ‘how much’, *ań* ‘why’, Yug *anet* ‘who’; Burushaski (Y) *áne* ‘where’, *ána* ‘whither’. Cf. Basque **no-r* ‘who’, **no-n* ‘where’; Tabasaran *naʔan* ‘where’, etc.

6. The Karasuk Noun

6.1. *Class/gender*: Both Burushaski and Yeniseian have noun class systems based on oppositions between animate : inanimate, human : non-human, and masculine : feminine.

Table 2: Burushaski noun classes.¹³

class type	human		non-human	
class description	human-male	human-female	non-human animate (animals, countable objects)	inanimate (uncountable objects, mass nouns, abstractions)
class letter (Lorimer)	hm	hf	x	y
class number	I	II	III	IV
examples (H.-N.)	<i>hir</i> ‘man’ <i>-uy</i> ‘father’ <i>qhudáa</i> ‘God’	<i>gus</i> ‘woman’ <i>dasín</i> ‘girl’ <i>parí</i> ‘fairy’	<i>hagúr</i> ‘horse’ <i>báalt</i> ‘apple’ <i>-l-ćin</i> ‘eye’	<i>phu</i> ‘fire’ <i>ge</i> ‘snow’ <i>ćhap</i> ‘flesh’

¹³ “The difference between class III and IV nouns is not as straightforward as [implied in the table.] Many class IV nouns are countable (and take class-specific plural endings), ... while some abstract nouns are class III ... ‘trees’ are IV, but their ‘fruits’ are III.” (B. Tikkanen, pc.)

Table 3: Yeniseian noun classes (Werner 1994).

class type	animate		inanimate
class description	animate-male	animate-female	inanimate
class number	I	II	III
examples (Ket)	<i>hi:γ</i> ‘man’ <i>o:p</i> ‘father’ <i>e:s</i> ‘God’ <i>qaj</i> ‘elk’ <i>uś</i> ‘birch tree’ <i>qi:p</i> ‘moon’	<i>qi:m</i> ‘woman’ <i>qo:j</i> ‘aunt’ <i>Tɔtam</i> ‘female spirit’ <i>saʔq</i> ‘squirrel’ <i>bɔʔba</i> ‘mushroom’ <i>hu:</i> ‘heart’	<i>tuleń</i> ‘moss’ <i>bu:ʔ</i> ‘foot’ <i>u:ʔ</i> ‘water’ <i>śi:</i> ‘night’

In both Burushaski and Yeniseian noun classes are pervasive in pronoun, noun, and verb forms and paradigms. (See for example the demonstrative pronouns, above.)

6.2. Noun plural endings

The Yeniseian languages and Burushaski are known for having a multitude of noun plural endings. Ket, Yug, and Kott have more than 20 possible plural endings, and Burushaski has more than 30.

In Yeniseian, however, the most common plural endings are *-n* and *-ŋ*. There is a tendency for *-n* to be used with animate nouns, and *-ŋ* with inanimate, with some exceptions (see [4] below). In Burushaski animate nouns may have a variety of plural suffixes, and inanimate (IV or y class) plural suffixes contain the velar nasal /ŋ/ with various vocalic and consonantal onsets. In the following examples the Burushaski words are inanimate (IV or y class) and the Ket words are inanimate (III class):

(6.2.1) Bur. *jek / PY *ʔiG

Burushaski (Y) <i>-yék</i> ‘name’	pl. <i>-yékiŋ, -yékićiŋ</i>
Burushaski (H, N) <i>-ík</i> ‘name’	pl. <i>-ikićiŋ</i>
Yeniseian (Ket) <i>ī</i> ‘name’	pl. <i>εʔŋ</i>
Yeniseian (Kott) <i>ix, īx</i> ‘name’	pl. <i>īkŋ / ekŋ / eäkŋ</i>

(6.2.2) Bur. *phuiŋ / PY *p[u]jm-

Burushaski (Y) <i>-phuiŋ</i> ‘shoulder, nape’	pl. <i>-phuiŋćiŋ</i>
Burushaski (H) <i>-phóiŋ</i> ‘shoulder’	pl. <i>-phóiŋćiŋ</i>
Burushaski (N) <i>-phóiŋ</i> ‘shoulder’	pl. <i>-phóiŋićaŋ</i>
Yeniseian (Kott) <i>fuimur, *phuimur</i> ‘neck’	pl. <i>phuimuraŋ</i>

(6.2.3) Bur. *cherés / PY *čĩž-

Burushaski (Y) <i>cerés</i> ‘root’	pl. <i>ceréhaŋ</i>
Burushaski (H, N) <i>chirís</i> ‘root’	pl. <i>chiráaŋ</i>
Yeniseian (Ket) <i>ti:ʔi</i> ‘root’	pl. <i>tīreŋ</i>
Yeniseian (Yug) <i>ti:ʔí</i> ‘root’	pl. <i>tidiŋ</i>

(6.2.4) Bur. *-ren / PY *řcn

Burushaski (Y) <i>-rén</i> ‘hand’	pl. <i>-réiŋ, -réiŋciŋ</i>
Burushaski (H) <i>-riiŋ</i> ‘hand’	pl. <i>-riiŋciŋ</i>
Burushaski (N) <i>-riiŋ</i> ‘hand’	pl. <i>-riiŋcaŋ</i>
Yeniseian (Ket) <i>láj-at</i> ‘hand’	pl. <i>láj-en</i>

In the last example the appearance of *-en* rather than *-eŋ* in Ket is due to the complementary distribution of plural suffixes in words ending in nasals, *i.e.*, nouns ending in *-n* take the ending *-ŋ* regardless of class, and nouns ending in *-ŋ* take the ending *-n* (Werner 1994). For the respective lexical comparisons, see below (Table 8).

7. The Karasuk Verb

The similarity of the Yeniseian and Burushaski verb templates, with extensive prefixing, and the contrast of these with verbal morphology in surrounding languages, is well known. Compare the following tables.

Table 4: Yeniseian (Ket) finite verb template (G. S. Starostin 2002).

prefix position	-7	-6	-5	-4	-3	-2	-1	Ø
function	AGT	MOD	DAT	PVERB	THEME	TENSE	OBJ	VERB
	subject agentive	lexical	OBJ		conj.	tense / aspect	direct	verb stem

Table 5: Proto-Yeniseian verb template (G.S. Starostin 2002).

prefix position	-5	-4	-3	-2	-1	Ø	+1	+2
function	preverb or first lexical root	OBJ	core OBJ	theme (conj.)	tense / aspect	VERB root	plural of subj.	SUBJ

Table 6: Proto-Yeniseian verb template (Vajda 2009).

morphemes outside the phonological verb	P4	P3	P2	P1	base
verbal complements (adverb, object NP, etc.)	thematic consonant, including shape prefix, incorporated body part noun	3p. animacy marker <i>?d</i> - anim. <i>b</i> - inan.	tense, mood, aspect marker combination: <i>s/i/a</i> or <i>o + l</i> or <i>n</i>	1/2p subject agr., stative prefix <i>jə</i> , or imperative prefix Ket <i>d</i> -, Yugh <i>d</i> -, Kott <i>č</i> - before vowel-initial base	

Table 7: Burushaski verb template (Tikkanen 1995, Berger 1998).

prefix position	-4	-3	-2	-1	Ø	+1	+2	+3	+4	+5	+6
function	NEG	D	PRON	CAUS	VERB	PL.SBJ.	DUR	1sgSBJ	AP/ NON- FIN/ MODAL	SBJ	Q
	negative marker	subject version	pronominal prefix (person/class)	causativity/valence	verb stem	plural marker					

These similarities are typological, but they could be of genetic origin, as Vajda proposes for the similarities of Yeniseian and Na-Dene (or AET) verbal templates. We have already seen (above) that apparent cognate pronominal affixes are common to Yeniseian and Burushaski. Other possible cognate affixes are discussed in my comparative grammar of DC languages (Bengtson 2008a).

8. Karasuk Lexicon

The following table displays some of the possible cognates shared by Yeniseian and Burushaski. As such it ignores possible cognates shared by either language/family with Basque, Caucasian, Sino-Tibetan, and Na-Dene.

Table 8: Karasuk lexical comparisons.

	Proto-Yeniseian (Starostin)	Burushaski
ax	*čok	*ćák ¹⁴
back	*suga / *ʔuska ¹⁵	*-sqa ¹⁶
berry	*baʔr ₁ in / *banir ₁ ¹⁷	*mar ¹⁸
bitter	*qVqVr-	*vaqá-
branch (conifer)	*qoʔn-	*qin ¹⁹
bright, white	*puʔr ²⁰	*bur- ²¹
callus, nail	*ʔur ₁ aj ²²	*-úrV ²³
cheek, jaw	*binč- ²⁴	*melç ²⁵

¹⁴ 'pick-ax'.

¹⁵ 'back' (adv.), 'back home, back to point of origin'.

¹⁶ 'on one's back', bound morpheme with pronominal affixes, e.g. *á-sqa* 'on my back'.

¹⁷ 'bird cherry'.

¹⁸ H. *mar-gún* 'white grape', N. *mar mán-* 'to pick mulberries'.

¹⁹ 'large dry juniper stem'.

²⁰ 'clear (of weather)'.

²¹ 'white'.

²² 'callosity'.

²³ 'fingernail'.

²⁴ 'chin, cheek'.

²⁵ 'jaw'.

	Proto-Yeniseian (Starostin)	Burushaski
cold, snow	*beʔč ²⁶	*bič ²⁷
dawn, light	*gəʔn ²⁸	*gon ²⁹
die, kill	*qɔ ³⁰	*va ³¹
dry	*qV[(ʔ)G]i-	*qaq ³²
dung	*poʔq	*bavé-iŋ
eat	*sī-	*ši / *ʃi / *ʃu
egg	*jeʔŋ / *jɔʔŋ	*tiŋán
fat	*giʔd	*git ³³
female	*pā(ʔ)ŋ-	*behé ³⁴
finger	*bes ³⁵	*meʃ ³⁶
foot, leg	*bul-	*búmbal-ten ³⁷
fur, tail	*pis ³⁸	*biś-ké ³⁹
guilt, shame	*saq- / *ʔasq ⁴⁰	*ʃiqár ⁴¹
guts, marrow	*piʔi ⁴²	*bal ⁴³
hair	*bəjbul ⁴⁴	*bup(h)úr ⁴⁵
hand	*fɔŋ	*-reŋ
hot	*ʔapV ⁴⁶	*phu ⁴⁷
husband, bridegroom	*ʔil(V)s ⁴⁸	*hilés ⁴⁹

²⁶ ‘snow (falling in flakes)’.

²⁷ ‘cold’ (n.)

²⁸ ‘light’.

²⁹ ‘dawn’.

³⁰ ‘to die’.

³¹ ‘to be exhausted, tired; (with *s*-prefix) ‘to kill’.

³² ‘dry, hungry’.

³³ ‘intestines with inner fat’.

³⁴ ‘female (of taboo animals)’.

³⁵ Ket. *bəs-taq*₅ ‘index finger’. The second part is **təʔq* ‘finger’.

³⁶ ‘finger, toe’.

³⁷ ‘ankle’ (compound with **lten* ‘bone’) < **bumbla-lten* or **bumbal-lten* (cf. PNC **bǝmǝlǝ* ‘hoof, foot’).

³⁸ ‘tail (of a bird)’.

³⁹ ‘fur, hair’.

⁴⁰ ‘guilt(y)’.

⁴¹ ‘shame’.

⁴² ‘guts, intestines’.

⁴³ ‘marrow; kernel of walnut’.

⁴⁴ ‘braid (of hair)’.

⁴⁵ ‘down, fine wool’.

⁴⁶ ‘heat; sweat’.

⁴⁷ ‘fire’.

⁴⁸ Pumpokol *ils-et* ‘husband’, *ils-em* ‘wife’.

⁴⁹ ‘young unmarried man’ (i.e., “bridegroom material”). Cf. Cauc: Avar *ros*: ‘husband’; Tsezi *is-lu* ‘male’; Lak *las* ‘husband’, Archi *as* id., etc.; cf. Basque **es-* in **es-kon-* ‘to marry’, **es-tai* ‘wedding’ (with loss of *-l-*, as in Tsezi *is-* and Archi *as*).

	Proto-Yeniseian (Starostin)	Burushaski
ice, cold	*čəG- ⁵⁰	*čəx-úr- ⁵¹
knee, shank	*baɾt- ⁵²	*bácin ⁵³
know, see	*ʔVt- ⁵⁴	*-jéc- ⁵⁵
leaf	*jəpe	*tap
liver	*seŋ	*-sán ⁵⁶
many, all	*ʔōn- ⁵⁷	*jōn ⁵⁸
mud, clay	*təʔq-	*toq
name	*ʔiG (-x)	*jek
neck ₁	*p[ul]jm-	*phuiŋ ⁵⁹
neck ₂	*kəqənt- ⁶⁰	*qoqó ⁶¹
not	*-pun ⁶²	*be
path, road	*gāŋ	*gan
resin, dew	*piʔt ⁶³	*phunc ⁶⁴
root	*čič̣-	*cherəş
salt	*čəʔ	*şáo ⁶⁵
sit	*-Vs- ⁶⁶	*b-as-, *ōs- ⁶⁷
speak ₁	*ʔas- / *ʔes- ⁶⁸	*-s-, *sen- ⁶⁹
speak ₂	*bar ₁ (-r-) ⁷⁰	*bar ⁷¹
stand (up)	*ta- / *pa-ta-	*ca-
stone	*čič̣is	*čhiş ⁷²
swell	*piʔŋ ⁷³	*phān-

⁵⁰ ‘crust on snow’.

⁵¹ ‘cold’ (adj.).

⁵² ‘knee’.

⁵³ ‘shank, hind leg above the hock’.

⁵⁴ ‘to know’.

⁵⁵ ‘to see.’

⁵⁶ ‘spleen’.

⁵⁷ ‘many’.

⁵⁸ ‘all’.

⁵⁹ Y. *-phúin* ‘nape of neck’; H., N. *-phóin* ‘shoulder’.

⁶⁰ ‘neck, collar’.

⁶¹ ‘crop; goiter’.

⁶² ‘without, -less’ (suffix).

⁶³ ‘glue’ < ‘*resin’.

⁶⁴ ‘dew’: the semantic range is seen in Caucasian: Karata *bic* ‘i’ ‘resin’; Lak. *pic* ‘dew; perspiration’, etc.

⁶⁵ ‘oversalted’.

⁶⁶ ‘to be, sit’.

⁶⁷ ‘to sit down, sit still; to put (down), place’.

⁶⁸ ‘to shout, call’.

⁶⁹ ‘to say’.

⁷⁰ ‘to pray’.

⁷¹ ‘speech, word’.

⁷² ‘mountain, hill’.

	Proto-Yeniseian (Starostin)	Burushaski
tasty	*piʔr ₁ - ⁷⁴	*babár- ⁷⁵
tree	*ʔi-pVl ⁷⁶	*phal-c ⁷⁷
what	*ʔa(ʔ)s- / *sV(ʔ)- ⁷⁸	*-sa- / *-se ⁷⁹
water	*xur ₁	*hur- ⁸⁰
wind	*bej	*méj-aŋ ⁸¹
woman	*qVm	*yen- ⁸²

8.1. Karasuk Phonological Notes

It is soon apparent that there are some recurrent matches even in this limited sample of vocabulary. For example:

Yen. <i>p</i>	= Bur. <i>b</i>	‘bright, dung, female, fur, guts, not, tasty’
Yen. <i>q</i>	= Bur. <i>q</i>	‘bitter, branch, dry, guilt, mud, neck2’
Yen. <i>s</i>	= Bur. <i>s, ʃ</i> ⁸³	‘back, eat, finger, guilt, husband, liver, sit, speak1, stone, what’
Yen. <i>a</i>	= Bur. <i>a</i>	‘back, berry, knee, path, speak2’
Yen. <i>u</i>	= Bur. <i>u</i>	‘bright, callus, foot, hair, neck, water’

Some of the compared lexemes exhibit multiple correspondences, e.g. three points of correspondence in ‘berry, cold, foot, knee’, two in ‘cheek, finger, liver, neck, resin, wind’, etc. These multiple points of correspondence are additional evidence that the correspondences are real and not random.

The full list of recurrent matches (two or more examples) is as follows:

Table 9: Karasuk recurrent phonological matches

Yen.	Bur.	Examples	Proto-DC (S.A. Starostin)
b	m	berry, cheek, finger, wind	*Hm, *mH
b	b	cold, foot, hair, knee, speak2	*ḅ
p	ph, p ⁸⁴	hot, leaf, neck, resin, swell, tree	*p

⁷³ ‘to swell; tumor’.

⁷⁴ ‘sweet’.

⁷⁵ ‘sharp-tasting, hot, pungent.’

⁷⁶ ‘aspen tree’.

⁷⁷ ‘a kind of poplar tree’.

⁷⁸ interrogative stem, e.g. Yug *assa* ‘what’, Kott. *šina, šena* id.

⁷⁹ (in compound pronouns) > Y. *bé-sa, bé-se* ‘why’, H., N. *bé-sa-n* ‘what, which’, *bé-se* ‘why’.

⁸⁰ In words like *hur-tá* ‘wet’, *hurúginas* ‘wave, stream, whirlpool’, etc.

⁸¹ ‘snowstorm’.

⁸² Y. *yen-deṣ*, H., N. *jeniṣ* ‘queen’.

⁸³ retroflex *ʃ* secondary in proximity of certain consonants or vowels.

⁸⁴ *p* in final position

p	b	bright, dung, female, fur, guts, not, tasty	*b
g	g	dawn, fat, path	*kw
q	q	bitter, branch, dry, guilt, mud, neck2	*xkw, *xq, *xG (merger)
q	ɣ	bitter, die, dung, woman	*qw
ŋ	ŋ	egg, hand	*ŋ
ŋ	n	liver, path, swell	*ŋw
j	t, t ⁸⁵	egg, leaf	*ʎ
ʔ	j	know, many, name	*j
n	n	dawn, many	*n
l	l	foot, husband, tree	*l
r ₁	r	berry, callus, speak2, tasty, water	*r
s	s, s ⁸⁶	back, eat, finger, guilt, husband, liver, sit, speak1, stone, what	*s, *c, *ç, *ć (merger of several phonemes)
t	c	knee, know, resin, stand	*st, *st̥
č	ć(h), ç ⁸⁷	ax, cheek, cold, ice, stone	*č, *ć
a	a	back, berry, knee, path, speak2, stand	*a
e	e	finger, wind	*e
ə	a	ice, leaf, salt	*ä
əʔ	o	dawn, mud	
eʔ	i	cold, egg	
i	i	fat, stone	*i
i	e	cheek, name, root	
i	i	fur, husband	*i
u	u	bright, callus, foot, hair, neck, water	

See Starostin (2005a) for details of Sino-Caucasian phonology, which is still (as he acknowledged) in its infancy.

9. Burusho-Dene

Finally, I am including some direct comparisons between Burushaski and Na-Dene. To my knowledge nobody has done a serious comparison of just these two families. On a purely typological level the similarities between Burushaski and Na-Dene are just as conspicuous as those between Yeniseian and Na-Dene, and between Burushaski and Yeniseian (cf. Werner 2004). All these languages share the heavily prefixing templatic verbal structure discussed above

⁸⁵ t̥ in Bur. 'egg' conditioned by following ŋ. This unusual correspondence (*j ~ *t̥) is traced back to DC laterals (see Starostin 2005a).

⁸⁶ retroflex s secondary in proximity of certain consonants or vowels.

⁸⁷ retroflex ç secondary in proximity of certain consonants or vowels.

as common to Burushaski and Yeniseian, and by Vajda and Werner as common to Yeniseian and Na-Dene. Compare the Na-Dene verbal template with those cited above (Tables 4-7):

Table 10: Na-Dene verbal template (Krauss 1965):⁸⁸

prefix position	-4	-3	-2	-1	Ø	(+1, +2)
function	modal	aspect	pronoun	classifier	stem	(suffixes)

A salient similarity between the Burushaski and Na-Dene verbal templates is the prefix position immediately before the verb stem (denoted here as -1), which is filled in both families by valence-changing prefixes. In Burushaski this prefix is the transitive marker *-s-* (“Das Transitivzeichen”: Berger 1998 I: 125-126). For example, (H., N.) *balíu-* / *-wáal-* ‘to be lost’ becomes *-s-pal-* ‘to lose’ with the transitive marker. According to Anderson (forthcoming) the transitive marker (which he calls causative/benefactive/affective) can have several allomorphs, including *-as-*, *-s-*, *-a-*, and vowel length. This is reminiscent of Athabascan, where allomorphs (sandhi variants) of the valence-changing prefixes are well known (see, e.g., Rice 2000). I think the Burushaski *-(a)s-* is probably cognate with the Na-Dene (PAET) “S- thematic and valence-increasing prefix” (Leer 2008), as well as the well-known *-s-* causative of Tibetan and other ST languages. The presence of valence-changing prefixes in the -1 position in other DC languages, including West Caucasian and Basque (Bengtson 2008a: 106-107), indicates that this is an original and diagnostic DC feature.

In noun morphology we can point to the pervasiveness of noun classification in both families, though realized in quite different ways in the present-day languages. Burushaski nouns are divided into those with alienable possession and a smaller group with inalienable possession that require a pronominal prefix. The latter are customarily cited, as in Athabascan, with an initial hyphen indicating that a pronominal prefix is obligatory. As in Athabascan, most of these inalienably possessed nouns are body parts and kin terms. For example, Bur. **-sájŋ* ‘limbs’ occurs as *a-sájŋ* ‘my limbs’, *gu-sájŋ* ‘thy limbs’, etc. There are some doublets such as Bur.(N) *baŋoó* ‘stomach (of fowl)’, which is alienable, vs. **-phát* ‘gizzard, stomach (of fowl)’, which is inalienable (Berger 1998 I: 44-46). (Cf. Athabascan **-wǎł* ‘belly, stomach’.) Pronominal possessive prefixes are found in West Caucasian, some Sino-Tibetan languages, and Yeniseian, as well as in Burushaski and some Na-Dene languages, and must reflect at least a DC “drift” (in Sapir’s sense) if not the original proto-language (Bengtson 2008a: 94-95).

Some Burusho-Dene lexical comparisons are cited in Table 11. A few of them, as far as I know, are restricted to Burushaski and Na-Dene (e.g., ‘hair’, ‘foam’), though in the future they may be found in other DC languages. Others (e.g., ‘star’, ‘limb’) are known to occur in other DC languages. In either case, I interpret these isoglosses as archaisms rather than indications that there is a special closeness between Burushaski and Na-Dene.

⁸⁸ For a much more elaborate Proto-Na-Dene template, see Pinnow (1985, Heft 46, p. 5ff.).

Table 11: Burusho-Dene lexical comparisons

	Burushaski	Na-Dene	other / notes
star	*a-sí[m]- ⁸⁹	PA *səŋ ^{w?} ⁹⁰	PST *sēŋ SCCG 21
hair	*yoy ⁹¹	PPA *χa ⁹²	
foam	*yaş	PPA *χ ^{w?} áš ⁹³	
sand	*sau	PA *sa·x ~ *sa·y ⁹⁴	PST *srāj, PNC *swüre, etc. SCCG 192
limb, bone	*-śáj ⁹⁵	PA *cən ⁹⁶	PST *[ǰ]eŋ, PNC *Hçwējn ð, etc. SCCG 66
conifer tree	*gaśí ⁹⁷	Hu gaW ⁹⁸	
house	*ha[k] / *yak ⁹⁹	PPA *yəχd ¹⁰⁰	PNC *ʔwəlq̄wě ‘roof’, etc. SCCG 262
wood (for building)	*yaşk ¹⁰¹	E gəšk ¹⁰²	
slope, bank ¹⁰³	*chiş ¹⁰⁴	E čī·š-(g) ¹⁰⁵	PY *čīʔs ‘stone’, etc.
earth	*tik ¹⁰⁶	TI χéχk ^w ¹⁰⁷	
full	*hek ¹⁰⁸	TI heek [hik]	

⁸⁹ Y. *asúmun, asúmen*, H., N. *asií*, pl. *asiímuc*.

⁹⁰ Ahtna *sonʔ*, Tanaina *sən ~ səm ~ sim*, Carrier *səm*, Hu *cənʔ*, Mattole *ciŋ*, Wailaki *saŋʔ*, Nav. *sōʔ*, etc. (KL 65).

⁹¹ H., N. *γuyáŋ*, Y. *γoyáŋ* (pl.) ‘hair (of head)’.

⁹² PA *-γa-ʔ ‘hair, fur’, E -χuʔ ‘fur, (body) hair’, TI -χαʔw ‘fur’, H *cəw* ‘hair, fur, bird plumage’. Na-Dene etymology by Ruhlen (1994b), seconded by Enrico (2004: 256, no. 76); cf. Leer (1993: 60).

⁹³ ‘hubbub, boiling noise’ (Leer 1993: 27); cf. Tututni -γoš ‘foam’, Dene Suline -γ^{w?}òs ‘foam, bubble’, -l-γ^{w?}ùs ‘to be boiling’, etc.

⁹⁴ Slave *θáh*, Kato *sai*, Dene-Suline *θài*, Nav. *sái*, etc. ‘sand’, Hu. -sa-yʔ ‘seeds’ (G 112); cf. Haida (M) *sī*, (A) *síi* ‘large collection of small identical objects’ (classifier in various movement verbs) (Enrico 2004: 250, no. 34).

⁹⁵ H., N. ‘limbs, body parts’ (‘Glieder, Körperteile’).

⁹⁶ ‘bone’; cf. E *čəl / čəlīh* ‘bone’, TI *śáʔn* ‘limb (of body)’ (Leer 1993: 24-25).

⁹⁷ H., N. ‘fir, spruce, pine [Tanne, Fichte]’, Y. ‘pine, fir [Kiefer, Föhre]’.

⁹⁸ Hu. ‘yew’, *gaW-koh* ‘redwood’ (‘big yew’), Tututni *gəščo* id., Kato *gac* ‘yew’ (G 116).

⁹⁹ Y., H., N. *ha* ‘house’, pl. *hakičan*; H., N. -yák ‘dwelling place’.

¹⁰⁰ Cf. E *yahd* ‘house’, TI *hid* id.

¹⁰¹ H., N. ‘rod, switch, withe, wattle, wire, thread [Rute, Gerte; Draht]’, Y. ‘branches, twigs [Zweige]’,

¹⁰² ‘post, pole, tent-pole, mooring post, forked pole as support, support pole (leaning or vertical)’; *lə-gəšk-l* ‘totem-pole’ (Krauss 1970: 313)..

¹⁰³ For semantics, cf. Eng. *barrow*, Ger. *Berg* ‘hill, mountain’, cognate with Rus. *берег* ‘shore, beach’.

¹⁰⁴ ‘mountain, hill [Berg, Hügel]’.

¹⁰⁵ ‘sand, gravel; sand-bank, sandy beach, gravel beach’ (Krauss 1970: 186).

¹⁰⁶ ‘earth, ground; rust’. Bur. initial *-t-, medial *-lt-, are regular correspondences to PDC lateral affricates.

¹⁰⁷ ‘soil’; cf. *χátk* ‘land, earth’ (Pinnow 1966: 147, no. 284).

¹⁰⁸ Y. *hek*, H., N. *hik* ‘full’.

10. Conclusions

Out of the various subsets of DC, Burusho-Yeniseian or Karasuk is supported by an ample and balanced combination of lexical and morphological evidence, equaling or surpassing (in my opinion) the evidence for Dene-Yeniseian. Basic lexical parallels such as ‘eat, egg, hand, name’ (Table 8), exhibiting recurrent phonological correspondences (Table 9), stand alongside some convincing morphological paradigms, e.g., suppletive pronouns (Table 1), pronominal affixes (Section 3), inanimate plural affix **-ŋ*, etc.(6.2), and more. These core elements bear witness to a period of common development (probably also including Proto-Caucasian) after the initial dispersals of the outlying DC peoples. The following is an ethnogenetic scenario that has been developing within recent years among DC researchers:

Proto-Dene-Caucasian (PDC) was spoken by a loose confederation of clans or bands in Central Eurasia at least ten millennia ago.¹⁰⁹ The cultural vocabulary recovered from PDC indicates an Upper-Paleolithic (pre-agricultural) stage of culture (Blažek & Bengtson 1995: 41-43). A contingent of these clans or bands struck out to the northeast, some eventually entering the North American continent and becoming the Proto-Na-Dene speakers.¹¹⁰ Another detachment settled in the Himalayan region, becoming the Sino-Tibetans (Tibeto-Burmans). The bands that remained in communication continued to evolve together, solidifying the core DC components of noun classification, suppletive personal pronouns, and templatic verbal paradigms.¹¹¹ Early in this process some populations headed west, some eventually giving rise to the Basque language.¹¹² The remaining DC speakers in the “core” area continued their common linguistic evolution, eventually disintegrating into the populations that became the North Caucasians, Burushos, and Yeniseians.

Based on the evidence discussed here, there is no special taxonomic relationship between Yeniseian and Na-Dene, apart from their common membership in a DC macrofamily. Focusing *only* on Dene-Yeniseian, to the exclusion of what we consider other DC language families, can only lead to incomplete and therefore distorted results. Therefore it is suggested here that all linguists interested in the external connections of the Na-Dene and Yeniseian languages heed Ed Vajda’s call for “a broader assessment of S. Starostin's (1982) ‘Sino-Caucasian’ proposal” so as to arrive at a more comprehensive view of Eurasian and American prehistory.

¹⁰⁹ “[T]he divergence of the three subgroups of the ‘Sino-Caucasian’ family may be dated very approximately at about the 8th or 9th millennium B.C.” (Starostin 1991: 40). A more recent glottochronological date for Proto-Sino-Caucasian is 10 KYA (Gell-Mann et al. 2009: 22-23). The inclusion of Na-Dene would make these dates even earlier.

¹¹⁰ We must of course assume that some of the bands dispersed from this hypothetical confederation were lost to history, either by outright extinction, or more often by ethnic assimilations and mergers, losing their original tongue.

¹¹¹ There are also some “core” lexical elements, e.g. ‘blood’ (PNC **čāŁwV*, PY **sur*); ‘eye’ (PNC **ʔwīłʔi*, Bur. **Łlci*, **il-*, PY **de-s-* < **le-*), ‘foot’ (PNC **t̥wīhīV̄ / *fīhītwV̄*, Bur. **hut̥*), ‘full’ (PNC **=fōçV*, PY **ʔute*), ‘husband, bridegroom’ (PNC **jalšV*, Bur. **(h)=ilés*, PY **ʔil(V)s*), ‘knife, sickle’ (PNC **wēnsĔ*, Bur. **bisár-*), ‘pine, resin’ (PNC **bhīnkwV* ‘pine tree’, Bur. **baŋ* ‘resin, gum’), ‘resin, dew’ (PNC **pīnçwĀ*, Bur. **phunc* ‘dew’, PY **piʔt* ‘glue’), etc.

¹¹² I am in general agreement with René Lafon (1949) that Upper Paleolithic populations already in place in Europe adopted Vasconic speech from an immigrant group that carried a Neolithic culture complex, including founder crops (Bengtson 2001). The Basque people as a genetic population are very ancient, but their DC speech could be a relatively recent acquisition, just as other Vasconic speakers in Gascony adopted Gaulish, and later the Vulgar Latin that became Gascon, and finally standard French.

Abbreviations

Languages/dialects:

Bur : Burushaski; **DC** : Dene-Caucasian; **E** : Eyak; **H** : Hunza (Burushaski); **Hu** : Hupa; **N** : Nager, Nagar (Burushaski); **Nav** : Navajo; **ND** : Na-Dene (Haida, Tlingit, Eyak-Athabaskan); **PA** : Proto-Athabaskan; **PAET** : Proto-Athabaskan-Eyak-Tlingit; **PDC** : Proto-Dene-Caucasian; **PNC** : Proto-(North) Caucasian; **PPA** : Pre-Proto-Athabaskan; **PST** : Proto-Sino-Tibetan; **PY** : Proto-Yeniseian; **TI** : Tlingit; **Y** : Yasin (Burushaski) = “Werchikwar”

Sources:

ANLC : Alaska Native Language Center; **G** : Golla (1964); **KL** : Krauss & Leer (1981); **SCCG** : Sino-Caucasian Comparative Glossary (Starostin 2005b); **TOB** : Tower of Babel: Etymological Databases (Starostin, et al.)

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