

Materials for a Comparative Grammar of the **Dene-Caucasian (Sino-Caucasian)** Languages

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The Dene-Caucasian (or Sino-Caucasian) language macro-family is defined here as including the following language families: **Vasconic (Basque)**; **North Caucasian**; **Burushaski**; **Sino-Tibetan**; **Yeniseian**; and **Na-Dene**.¹

I. Phonology

Thanks to the pioneering work of S. A. STAROSTIN ([1982], [1984], *et seq.*) and S. L. NIKOLAYEV (1991), we can deduce some of the features of the DC phonological system. There was a threefold contrast of stops and other occlusives: (1) voiceless (aspirated): **T^h**; (2) (voiceless) glottalized: **T'**; and (3) voiced **D**. This pattern is best preserved in Caucasian and Na-Dene languages, and in Burushaski (where, however, the contrast is **T^h : T : D**.) In Basque the aspirated and glottalized forms have merged, leaving a twofold contrast: **T^h : D**. In Yeniseian there is also a twofold contrast, but the laryngeal features have reversed: **T^h** and **T'** merged as ***d**, while **D** became ***t** (in STAROSTIN's Proto-Yeniseian). In Sino-Tibetan the developments have been more complicated (see the correspondences proposed by STAROSTIN [1984, 1991]).³

To avoid duplicating STAROSTIN's extensive phonological tables covering the three original families of the classic Sino-Caucasian hypothesis (Caucasian, Sino-Tibetan, and Yeniseian), my emphasis here will be on the correspondences between Proto-Dene-Caucasian (PDC) and Basque.

The following etymologies exemplify the above correspondences. Languages are cited in the order: 1. **Vasconic (Basque)**; 2. **North Caucasian**; 3. **Burushaski**; 4. **Sino-Tibetan**; 5. **Yeniseian**; 6. **Na-Dene**.

¹ I have also suggested the inclusion of ancient **Sumerian** in the Dene-Caucasian family. Because of special difficulties of ancient, extinct languages, it will be omitted from the present discussion.

² In this paragraph **T^h** stands for any voiceless (aspirated) occlusive, **T'** for any glottalized occlusive, **D** for any voiced occlusive.

³ It appears that the presence (or absence) of prefixes in Sino-Tibetan has affected the correspondences of initial phonemes. To some extent this is also true in Basque.

Labials: In general, PDC **p* > Basque **p*; PDC **p̣* > Basque **b* (initial), **p* (medial); PDC **b* > Basque **b*.

PDC **p*:

- Basque **pinc* 'membrane (covering an egg or nut)'⁴ ~ Cauc: Proto-Lezgian **pinç*^w 'eyelash, feather' > Agul (Keren) *biçbiç* 'eyelash', *pinç* 'feather', Agul (Burshag) *pinç* 'eyelash' (cf. NCED 365) ~ Burushaski **phenVs* > (Y) -*phénas* 'brow, forehead hair', (H, N) -*phínis*, -*phínis* (sg.) 'a braid that lies on the ear', (pl.) 'head hair (only of women, close cropped)'
- Basque **puS-* > (B) *puspulu*, *puspulo* 'bubble', (B, G) *pusla*, *puslo*, (B) *puxilu* 'blisters'⁵ ~ Batsbi *puš* 'bump, lump', Dargwa (Kaitag) *puš-lik* 'bladder', (Akushi) *pušáɬ* 'bubble, bladder' < PNC **pāršwA* (NCED 868)
- Basque **apal* > (B, G) *apal* 'shelf' ~ Avar *epel* 'lid, cover', Inkhokhwari *apar* 'pole (for planking the ceiling)' < PEC **ʔapVʔV* 'pole; board, cover' (NCED 202)
- Basque **e-purdi* 'rump, buttocks' ~ Archi *pār̄ti* 'large intestine', Bezhta *pir̄ti* 'bladder, lung', etc. < PEC **pHVr̄twV* (NCED 871) ~ Burushaski **phaṭ* > (Y) *phaṭ* 'stomach (of fowl)', (H, N) -*phát* 'viscera (of fowl)' ~ PST **Pat* > Burmese *phat* 'to vomit', etc. (ST I: 98) ~ Na-Dene: (**wVt*)⁶ > Eyak *wət* 'vomit'; PAth **wəṭ* 'belly' > Kutchin *vad*, Kato -*bət*, Navajo -*bid*, etc.
- Basque **epel* 'lukewarm, tepid' ~ Yen: Kott *phal* ~ *fal*, Assan *pfól-tu* ~ *pal-tu* 'hot, warm' (cf. PY **ʔapV* SSEJ 182)
- PNC **p̣inçwǎ* 'resin, juice' > Dargwa *penç* 'resin', Lak *piç* 'dew, sweat', etc. (NCED 871) ~ Burushaski **phunc* 'dew' ~ PY **piʔt* 'glue' > Ket *hiʔt*, etc. (SSEJ 249)

PDC **p̣*:

- Basque **bilho* > (BN, Z) *bilho*, (AN, BN) *bilu*, *billo* 'hair, mane'⁷ ~ Cauc: Lak *pihulli* 'feather', Dargwa (Akushi) *paḥala* 'feather', Abkhaz *á-bra* 'mane', etc. < PNC **p̣VhVʔV* (NCED 879) ~ Burushaski **phol-* > *pholǵó* (Y), *phulyúuy* (H), *phuryúuy* (N) 'feather'

⁴ The claim of «Latin origin» ([TRASK 1995: 58]) is not credible. The semantic commonality of 'skin ~ fur ~ hair' is well attested. Cf. Ainu **kAp* 'skin, fur'; **ur* 'fur coat, skin, hair of body', etc.

⁵ There has probably been some influence from Romance (cf. Latin *pustula*).

⁶ Proto-Na-Dene had no labial stops, only the semi-vowel **w*.

⁷ Attempts have been made to derive this word from Latin *pilu-* 'hair', but this clearly would have become Basque **biru*. The cluster -*lh-* indicates native Basque origin. (See the discussion under **l*.)

- Basque *apo > (B) apo 'hoof' ~ Bezhta, Hunzib *apa* 'paw', Ubykh -*pa* (in *q̄ā-pá* 'hand'), etc. < PNC **HaṗV̄* (NCED 545) ~ PST **bějH* > Old Chinese 髀 **pe?*, **bē?* 'femur, haunch', Tibetan *d-pyi* 'hip, hip-bone', Lushai *phei* 'lower leg' (ST I: 2)
- Basque *apa > (AN, B, BN) *apa* 'kiss' ~ Chechen *oba*, *uba* 'kiss', Khinalug *pa* 'kiss', etc. < PNC **pā?V* (NCED 878)
- Basque *lape > (Z) *lape* 'shelter under the eaves of a shed' ~ PEC **λěpV̄* 'stone plate or shed' > Chechen *laba* 'shed; peak of cap', Avar *λeb* 'stone', etc. (NCED 777) ~ Burushaski **tápi* (H, N) *tápi* '(smaller) stone terrace'

PDC *b:

- Basque **bihar* 'tomorrow' ~ Rutul *biga* 'tomorrow', etc. < PEC **baga* 'morning, evening' (NCED 292) ~ PY **pVk-* 'morning' > Ket *hígem*, etc. (SSEJ 254)
- Basque **bisař* 'beard' ~ Hunzib *bilaz*-ba 'beard', Bezhta *bizal*-ba 'mustache', Agul *mužur* 'beard', etc. < PEC **bilžV* (NCED 303) ~ Burushaski **biš-ké* '(animal) hair, fur' ~ PY **pis* 'tail (of birds)' > Ket *hīs*, Kott *pis*, etc. (SSEJ 249)
- Basque **belhař* 'forehead' ~ Rutul *bäl* 'forehead', Tindi *bala* 'edge, end, corner', etc. < PEC **bġāthō* (NCED 285) ~ Burushaski *bal* 'wall' ~ ST: Tibetan *dpral* 'forehead' (< **d-r-pal?*)⁸
- Basque **beko* 'forehead' ~ PEC **běkwō* 'part of face, mouth' > Tsakhur *boḵ* 'muzzle', Chechen *baga* 'mouth', etc. (NCED 289) ~ Burushaski **buk* 'throat'
- Basque **habe* 'pillar, beam' ~ PEC **hwěbē* > Avar *hubí* 'post, pole, stem', Tsez *hibo* 'stick', etc. (NCED 497) ~ PY **?abVL-* (~ **habVL-*) 'stick, pole' > Ket *ábíλ* / *ābíλ*, Sym *ābí*⁹
- PEC **bñmtV̄* > Avar *mal* 'foot', Tsez *bula* 'hoof', etc. (NCED 307) ~ Burushaski **bumbla-* in (Y) *búmba-lten* 'ankle' [< **bumbla-lten* with dissimilation (?)] ~ PST **phöl* > Tibetan *bol* 'upper part of foot', etc. (ST I: 78) ~ PY **bul* > Ket *būλ* 'foot', etc. (SSEJ 213)
- PST **pāk* > Old Chinese 博 **pāk* 'wide, ample', etc. (ST I: 50) ~ Na-Dene: (**wVQ*) > Tlingit *wuq* 'wide, broad', Eyak *wəx* 'wide, broad'

Dentals: PDC **t*, **t'* > Basque **t*; PDC **d* > Basque **t* (initial), **d* (medial)

PDC *t:

- Basque **tu* 'to spit', **itoi* 'drop' ~ PEC **twəjV* 'spit, spittle' > Chechen *tuj*, etc. (NCED 994) ~ Burushaski *thu* 'to spit' ~ PST **thōj* 'spit', **thok*

⁸ S. A. STAROSTIN prefers to compare instead PST **PāH* 'cheek' (ST I: 93).

⁹ Forms taken from S. A. STAROSTIN's comparative Yeniseian database available online at <http://starling.rinet.ru>.

'saliva' (ST II: 163, 164) ~ PY **duK* > Kott *tuk* 'saliva' (SSEJ 224) ~ Na-Dene: Tlingit *tuχ* 'to spit'

- Basque **tini* 'summit, top' ~ Burushaski *-thán* 'point, summit, peak' ~ PST **tēŋH* 'top' > Tibetan *s-terŋ*, etc. (ST II: 121)
- Basque **toška* '(fine white) clay'¹⁰ ~ Hunzib *taç* 'bog', Chechen *ṭqarš* 'slush, mire', etc. < PEC **tŋiVrçwV* (NCED 992)
- Basque **-teř(e)* in (AN, G, L) *aus-ter*, (G) *aus-terre* 'ashes' ~ PEC **türV* 'dung, mud' > Akhwakh *tereti* 'ashes, dust', etc. (NCED 993) ~ Burushaski (Y) *thér*, (H) *ther*, (N) *ther-k* 'dirt' ~ PY **dəʔər₁* 'powder, dirt' > Kott *taran* 'dirt', etc. (SSEJ 220)
- Basque **bete* 'full' > (c) *bete*, (BN, Z) *bethe* ~ Chechen *butū* 'hard, tough', Kabardian *bəda* id., etc. < PNC **bVtV̄* (NCED 320) ~ Burushaski *buř* 'much, many'
- PST **dhāw* > Old Chinese 饕 **thāw* 'eat voraciously', etc. (ST II: 7); cf. Lepcha *tha* 'to eat' ~ Na-Dene: Haida *táa-* 'to eat'; PAth **ta-n-* > Kato *-tan* 'eat', etc.

PDC **t̥*:

- Basque **ti-*, **ti-pi* > (AN, L) *tipi* 'little, small', (B) *tintin* 'poquito, très peu', *-tilla* 'little' (diminutive suffix) ~ Avar *hiřina-b* 'small', Lezgi *ṭi-mil* 'few', Ubykh *ṭa* 'less, smaller', etc. < PNC **ṭiHV* / **HiřV* (NCED 1001) ~ PST **thē(-k)* (**thia(-k)*) > Lushai *tē* (*tēt*) 'be small, little', Midzhu *ka-tiy* 'small', etc. (ST II: 159) ~ Na-Dene: Haida *tam-* 'thin and rounded'; Chipewyan *-tànè* 'thin', Galice *is-t'ani* 'small', Navajo *-t'ā'i* 'thin (of cloth, skin, stone)', *-t'ūhí* 'little, tiny'
- Basque **toki* 'place, location' ~ Proto-Circassian **ṭak^w* 'place' > Adyge *ṭak^w*, etc. ([KUIPERS 1975])
- Basque **tanka* / **tinka* > (R, Z) *tanka*, (B) *tanga* 'drop (of liquid) / gota / goutte', (R) *tinka* 'a little (of liquid)' ~ Rutul *tank* 'drop', Avar *tink* 'drop', etc. < PNC **ṭHänkō* (NCED 1000) ~ PST **tēk* (**dēk*) > Old Chinese 滴 **tēk* 'drop', Tibetan *thig-s* 'a drop', etc. (ST II: 120)
- Basque **i-tain* > (R) *itain*, (BN, Z) *ithain* 'tick' ~ PNC **ṭaHnā* 'nit' > Akhwakh *t'ani*, Lak *t'u*, etc. (NCED 995)
- Basque **e-toři* > (AN, B, G, L) *etorri*, (L) *ethorri* 'to come', ('to adapt, get along', and other meanings in B, G) ~ Avar *tur-* 'to run away', Udi *t:ist:un* 'to run', etc. < PEC **-iřVr* (NCED 659) ~ PST **t(h)ür* > Tibetan *dur* 'to run', Lushai *tur* 'to urge, compel, hurry', etc. (ST II: 172)

¹⁰ The supposed derivation from Latin *tuscu-* 'unrefined, dissolute' ([TRASK 1995: 62]) is wildly improbable. By the accepted phonetic rules, *tuscu-* would become Basque **duzku*, not *toska*, and the meanings have even less in common. *Toska* is the fine white clay used to make porcelain.

- Basque **e-ten-* > (AN, B, G, L) *eten*, (BN, L, Z) *ethen* 'to break, cut' ~ PEC **-it̪V* 'to cut, divide' > Hunzib *-it̪-* 'to divide', Tsakhur *-et̪a-* 'to break', etc. (NCED 660) ~ PST **tū* (**t̪iw*) > Tibetan *r-do-s* 'to break, burst', etc. (ST II: 143); or cf. PST **tān* 'to cut' > Jingpo *dan*, Lushai *tan*, etc. (ST II: 115)
- Basque **guti* > (c) *guti*, (Z) *güti* 'few, little' ~ Lezgi *güf̪ü* 'narrow', Lak *kuʔa-* 'short', etc. < PNC **k̪Hə̃t̪wV̄* / **k̪wHə̃t̪V̄* (NCED 690) ~ Burushaski **khuʔ* 'short' ~ Na-Dene: Eyak *guʔ* 'very small, tiny'
- Basque **-te-* in *izter* (**i-s-te-r̄*)¹¹ 'thigh' ~ Chechen *t̪a* 'front leg (of animal)', Avar *het̪é / het̪* 'foot', etc. < PEC **t̪w̄ih̄V̄* ~ **h̄w̄it̪V̄* (NCED 1007) ~ Burushaski **húʔ-* 'foot' ~ PST **t̪əH* > Old Chinese 𠬞 **t̪əʔ* 'foot, heel' (ST II: 123) ~ Na-Dene: (**t̪a-*) > Haida *s-t̪áay*, *s-t̪a-* 'foot', *t̪aa-* 'to step'; Sarsi *-t̪ás*, *-t̪áz* 'to move one's own foot', etc.
- PNC **t̪ümhV* > Chechen *t̪um* 'kernel (of fruit, nut); marrow', etc. (NCED 1004) ~ Burushaski **tumá-* > (H, N) *tumáy* 'nutshell, stone (of fruit)', (Y) *tumá* 'shell (of nut, egg), fruit stone' ~ PST **[t̪]ümH* 'seed, fruit kernel' > Jingpo (*ə-*)*tum*, etc. (ST II: 149)
- PNC **t̪ā̃mV* 'wing' > Lak *t̪imu* 'feather', etc. (NCED 995) ~ PST **[t̪]ām* (**[t̪]ōm*) 'to carry on the shoulder' > Burmese *thamh*, etc. (ST II: 135) ~ Na-Dene: (**t̪aʔw*) > Haida *t̪áaʔwun* 'feather, plume'; Tlingit *t̪āw* 'long feather'; Eyak *t̪ah-ʔ* 'feather, leaf'; Navajo *t̪á*, *-t̪àʔ* 'feather', etc.
- PEC **-Vt̪wV* > Batsbi *-at̪-* 'to lie (around)', Bezhta *-ut̪-* 'to sleep', etc. (NCED 1035) ~ Na-Dene: Eyak *-t̪e / -t̪u* 'to be (thus)'; PAth **-t̪e-w* id. (KL 82)
- PST **t̪(r)ũH* (~**d̪(r)ũH*) 'knee, elbow' > Old Chinese 𠬞 **truʔ* 'wrist, elbow', Lepcha *k̪ə-thu* 'elbow', Miri lag-*du* 'elbow' (ST II: 142) ~ Na-Dene: Tlingit *t̪iy* 'elbow'

PDC **d̪*:

- Basque **odol* (**o-dol*) 'blood' ~ PST **t̪(h)əlH* 'meat, flesh' > Lushai *tāl* 'flesh, muscle', etc. (ST II: 158) ~ Na-Dene: (**deʔ*) > Eyak *deʔ* 'blood'; Chipewyan *d̪əʔ*, Navajo *d̪it̪* 'blood', etc.¹²
- Basque **udagara* (**u-dagara*)¹³ 'otter' ~ PEC **darq̪wV* > Andi *darq̪w̄a* 'weasel, marten', Lak *t̪:arq̪a* 'weasel, ermine' (NCED 399) ~ PY **t̪äχVr* 'otter' > Ket *ta:ʎ*, Kott *thēgār*, etc. (SSEJ 283)

¹¹ The elements **i-*, **-s-*, **-r̄* will be discussed below in the grammatical section.

¹² The semantic connection 'blood ~ flesh' is well known: cf. Russian *кровь* 'blood' ~ Greek *χρῆμα* 'flesh'.

¹³ This is probably the oldest variant (others being *ugadara* and the folk-etymologized *ugabere* 'water animal'). *u-* is either (*h*)*ur-* 'water' or, more likely, a fossilized class prefix.

- Basque **fodäi* > (BN, Z) *hodei*, (AN, B, G, R) *odei*, (B, G) *odai*, (B, R) *odoi* ‘cloud’ (also ‘thunder’ in B, G, AN, BN, R) ~ Dargwa (Akushi) *dq̄ɬ* ‘wind’, Archi *dī* ‘odor, scent’ < PEC **dwiHV* ‘wind’ (NCED 407)
- PEC **dānʔi* (~ -*ū*) > Avar *da* ‘gum’, Rutul *dan* ‘cheek’, etc. (NCED 398) ~ ST: Tibetan m-*dan* ‘cheek’¹⁴ ~ Na-Dene: **dāʔ* > Eyak *daʔ* ‘face’; Hupa *-daʔ* ‘mouth, lips’, Chipewyan *-dā*, *-dá* ‘lip, beak’, Navajo *-dààʔ* ‘lip, bill’
- Basque **tak-*, in (L) *takoin*, (B) *takoi* ‘heel (of a shoe)’ (lit. ‘back [of] foot’) ~ PNC **dHāqwĀ* > Rutul *daq* ‘back of head’, Ubykh *tʷəq* ‘neck’, etc. (NCED 399) ~ PST **tūk* ‘neck’ > Garo *gi-tok*, etc. (ST II: 148) ~ PY **tucV* > Ket *tū* ‘(upper) back’, Pumpokol *tuk* ‘back(wards)’ ~ Na-Dene: Tlingit *déx̣* ‘back’, *daỵ* ‘place behind one’, *-daχ* ‘from’; Navajo *dah* ‘off, down off’

Sibilant affricates: PDC had three series of sibilants, and of sibilant affricates: front or hissing (*s*, *c*, *č*, *ʒ*), palatal or hissing-hushing (*ś*, *ć*, *č̣*, *ʒ̣*), and back or hushing (*š*, *č̣̣*, *č̣̣̣*, *ʒ̣̣*). Basque, unlike its neighboring European tongues, has an analogous contrast among lamino-alveolar (*s*, *c*), apico-alveolar (*ś*, *č̣*), and palato-alveolar (*š*, *č̣̣*). (In Basque orthography these are *z*, *tz*; *s*, *ts*; and *x*, *tx*, respectively.) However, the present-day Basque series does not in every case correspond *etymologically* to the PDC series, since there has often been a kind of «crossover», *e. g.*, PDC **c*, **č* > Basque **ś*, (in some cases), and PDC **ž*, **ʒ̣* > Basque **s*. See below for particulars.¹⁵

PDC **c*: In association with labial vowels, PDC **c* and **č* > Basque apico-alveolars (**ś*, **č̣*), otherwise > Basque lamino-alveolars (**s*, **c*):

- Basque **śagu* ‘mouse’¹⁶ ~ PNC **cārgwī* > Adyge *cəγ^wa* ‘mouse’, Tsakhur *sok* ‘weasel’, etc. (NCED 322) ~ Burushaski **čargé* > (Y) *čargé* ‘flying squirrel’ ~ PST **srain(H)* > Old Chinese 鼯 **sren* ‘weasel’, etc. (ST IV: 105) ~ PY **saʔqa* ‘squirrel’ > Ket *saʔq*, Kott *šaga*, etc. (SSEJ 268) ~ Na-Dene: Haida

¹⁴ S. A. STAROSTIN prefers to compare instead PST **tāŋ(H)* > Old Chinese 掌 **taŋʔ* ‘palm of the hand’, Burmese *taŋ* ‘buttocks’ etc. (ST II: 117).

¹⁵ STAROSTIN ([1984, etc.]) reconstructs clusters (**st*, **sṭ*, **sd*, **št*) for apparent sibilant affricates that result in Yeniseian **t*. So in the etymologies involving Basque **ośo* ‘whole’, **baśo* ‘mountain’, **encun* ‘know’, **sikiro* ‘ram’, and others. As far as I can see, there is no difference between the Basque reflexes of PDC **st*, **sṭ*, **sd*, **št*, and those of **c*, **č̣*, **ž*, **č̣̣*.

¹⁶ The Basque initial **ś* is unexpected, unless by remote influence of the following *u*. Alternatively, the initial consonant may have been **č̣* (cf. Burushaski *čargé*), or altered by affective palatalization. Note the variations in the corresponding Athabaskan words.

tco ʔgɫ, Tlingit *calg* 'squirrel', Eyak *cətk*, PAtH **cəɫəx* ~ **čəɫəx* ~ **cVIɫuʒ* 'squirrel' > Ahtna *celes*, Mattole *tcxalis*, Carrier *colʒəs*, etc. (KL 108–109)¹⁷

- Basque **śušt(V)r(V)* 'root' > (B) *sustar*, (B, G) *sustrai* ~ Burushaski **cheréš* 'root' > (Y) *ceréš*, (H, N) *chiriš*, *-chiriš* ~ PY **čĩš*- 'root' > Ket *ti:ri*, Kott *ičičan*, etc. (SSEJ 217)
- Basque **baśo* 'woods, forest, wilderness', **baśa-* 'wild' ~ Akhwakh *beča* 'mountain', Tindi *besa* 'mountain', Archi *sob* 'mountain pasture', etc. < PEC **wīce* (NCED 1053) ~ Burushaski **bac* 'small terrace between mountains, grown with grass'
- Basque **hośin* 'deep place in a river; abyss; sea; whirlpool' ~ Tindi *hinc:i* 'spring', etc. < PEC **ʔwīncV* < **ʔwīcīnV* 'well, spring' (NCED 232) ~ PST **cēŋH* > Old Chinese 井 **ceŋ*? 'well', etc. (ST IV: 3) ~ PY **sin-* > Kott *šinan* 'spring', etc. (SSEJ 274)
- Basque **ícu* 'blind' > (c) *itsu*, (Z) *ütsü*, (R) *utsi* ~ PEC **-VcV* > Tindi *-ec:u-b* 'blind', Khwarshi *sajsu* 'dark', etc. (NCED 1017) ~ ? Na-Dene: Mattole *-coi* 'to be blind'
- Basque **a-seyari* > (c) *azeri*, (Z, R) *axeri* [ašeri], (AN, B, G) *azari*, (B) *azegari*, *azagari* 'fox'¹⁸ ~ Tindi *sari*, Akhwakh *šari*, Tsez *ziru*, Archi *s:ol* 'fox', etc. < PNC **chwōlē* < **cEhwōlē* 'fox, jackal' (NCED 324) ~ Burushaski **hal* 'fox'
- Basque **a-saro* > *azaro* (Sal) 'autumn', (c) 'November' ~ PNC **cōjwīhiV* > Tindi *c:ibar* 'winter', Khinalug *cuwa-ž* 'autumn', etc. (NCED 327) ~ cf. ST: Old Chinese 秋 **čhiw* 'autumn' ~ PY **sir*- > Ket *šīli* 'summer', etc. (SSEJ 275)
- Basque **hic* > (c) *hitz* 'word', *hitz egin* 'to speak, talk' ~ Chechen *-īc-* 'to tell', Khwarshi *-is-* 'to say, speak', etc. < PNC **-[i]mcŪ* (NCED 642) ~ Burushaski **-s-/*-ś-* 'to say (to someone)'

PDC **c:*

- Basque **śu* > (c) *su*, (Z) *sü* 'fire' ~ Lak *ču*, Ingush *çi*, Ubykh *mə-žá* 'fire', etc. < PNC **čǎj* 'fire' (NCED 354) ~ Burushaski **śi* > (H, N) *śi* 'fireplace, hearth' ~ cf. Na-Dene: Haida (SWANTON) *čaaʔano* 'fire'

¹⁷ KRAUSS and LEER regard the Haida, Tlingit, and Eyak words (also in Tsimshian) as diffusions from Athabaskan. They also seem to regard the PAtH words **cəɫəx* ~ **čəɫəx* ~ **cVIɫuʒ* as originally compounds with **ce-* 'rock' as the first element. But squirrels are associated with trees, not rocks, and the proposed remote cognates match well phonetically and semantically.

¹⁸ In light of this evidence, the attempt to derive the Basque word for 'fox' from a personal name *Asenariu* ([TRASK 1995: 19; 1997: 299]) hardly requires comment. Most pertinently, there is no trace of a nasal vowel in Zuberoan or Roncales. The archaic and quadrisyllabic Bizkaian forms (*azegari*, *azagari* < **a-seyari*) match very well with the archaic Caucasian form **cEhwōlē*.

- Basque **soin* > (c) *soin*, (Z) *suin*, *süñ*- 'shoulder, upper back', etc. ~ PEC **Hçwěj̄mǎ* 'leg bone' > Lezgi *çum* 'shin bone', etc. (NCED 555) ~ Burushaski **-śáŋ* 'limbs, body parts' ~ Na-Dene: PAth **cən* 'bone' > Hupa *cən*, Navajo *c̄in*, etc.; Eyak *čal* 'bone'
- Basque **ośo* > (c) *oso* 'whole, complete, entire; totally, very' ~ Chechen *-üz*-na 'full', Tindi *-eçu*-b 'full', Ubykh *ɣa-zá*, etc. < PNC **-fiōçV* 'full, fill' (NCED 525) ~ PST **chāŋ* > Tibetan *chaŋ* 'be complete, full', etc. (ST IV: 19) ~ PY **?ute* 'full' > Yug *ūt*, Kott *ūti*, etc. (SSEJ 201)
- Basque **a-čo* > (c) *atso* 'old woman', (Sal) 'grandmother' ~ Batsbi *ps̄tu* 'wife', Lak *c:u*- 'female', Ubykh *b-za* 'female', etc. < PNC **çwōjV* 'woman, female' (NCED 374)
- Basque **sama-ř* > *zamar* (AN, BN) 'fleece, shorn wool', (Z) 'shaggy mop of hair', (AN, BN, R, Z) 'animal hide used as raincoat by shepherds', etc.¹⁹ ~ PEC **çfiwěme* 'eyebrow' > Lezgi *r-çam*, Lak *çani*, etc. (NCED 364) ~ Burushaski **śe[m]* 'wool' > *śe*, pl. *śemiŋ* ~ PST **chām* 'hair (of head)' > Garo *mik-sam* 'eyebrow', Kanauri *cam* 'wool, fleece', etc. (ST IV: 19) ~ Yen: PY **cəŋe* 'hair' > Kott *heŋai*, etc. (SSEJ 213) ~ Na-Dene **cV̄(χ)* > Tlingit *s̄i* 'eyebrow'; Eyak *čā:χ* 'eyebrow'
- Basque **e-sagu-* > (c) *ezagu*-tu 'to know (a person)', *ezagun* 'evident, known'²⁰ ~ Avar *çex:é-* 'to search, ask', Ubykh *ɣya-* 'to ask', etc. < PNC **çEnχV(n)* 'to search, ask' (NCED 359)
- Basque **siho* > (BN, Z) *ziho*, (AN-Baztan) *zigo* 'fat, tallow' ~ Tindi *çin-łu-*, Dargwa *çerx-* 'fat' (adj) < PEC **çēnχwV* 'fat' (adj) (NCED 362)²¹
- Basque **encun* > (c) *entzun*, (Z) *entziun* 'to hear, listen' (B also 'to smell') ~ PNC **-āmçĔ* > Batsbi *-abç-* 'know, get to know', Dargwa *umç-es* 'to search', etc. (NCED 262) ~ Burushaski **-jēc-* > (H, N) *-yēc-*, (Y) *-yéc-* 'to see'
- Basque **i-hinc* > (L) *ihintz*, (BN, Sal, Z) *ihitz* 'dew' ~ PEC **xwřmçwī* > Lak *xunça* 'bog', Tindi *hic:u* 'bog, marsh', etc. (NCED 1065) ~ Burushaski

¹⁹ Basque *zamar* has many meanings depending on dialect. Out-comparison indicates that the meaning 'hair' is oldest, with specializations to 'wool', 'eyebrow', etc. Via the Basque diminutive form *txamar*, this is the ultimate source of Spanish *chamarra* 'wool, sheepskin, or leather jacket'.

²⁰ Some have sought to derive this word from Latin *sapere* (Spanish *saber*), but the initial prefix *e-* is characteristic of native Basque verbs, not loanwords.

²¹ NCED offers alternative reconstructions: **çēn.λV* or **çēnχwV*. The Basque form *ziho* < **šixo* allows us to choose the latter. Contra TRASK ([1995: 70]), there is no evidence for a «Pre-Basque» **zino*. The Zuberoan form is simply [šiho], with oral vowels. There could, of course, been a nasal vowel at some (very) early stage.

huş 'moisture (of field, ground)' (? loan < Tibetan or Balti) ~ cf. ST: PST **χŷ(s)* > Tibetan *hus* 'moisture, humidity', etc. (ST V: 180)

- Basque **haic* > (BN) *haitz*, (AN, G, L) *aitz*, (B, Z) *atx* [ač] 'rock, stone' ~ Avar *Һац*: 'stone', Chechen *hätt* 'avalanche', etc. < PNC **hāmVçö* (NCED 516) ~ cf. Na-Dene: Tlingit *ʔič* 'rock, stone, pebble'

PDC **з*: The Basque reflex is uniformly **s*.

- Basque **susen* > (c) *zuzen* 'straight, correct, right, honest' ~ PNC **HäzĚm* > Chechen *çena* 'clean, pure', Godoberi *çin-k'i* 'clean, pure', Abaza *b-zi* 'good', etc. (NCED 552) ~ Burushaski **sesin-* 'clean, clear' > (Y) *sésen-um*, *sesén-um*, (H, N) *sisín-um* ~ cf. ST: PST **chian* > Tibetan *chan-s* 'purified, clean', etc. (ST IV: 26)
- Basque **i-sar* > (c) *izar* 'star' ~ Tindi *c:aru*, Dargwa (Chirag) *zure*, Abaza *ja-č^wa*, etc. < PNC **zǝwǝhrī* 'star' (NCED 1098) ~ PST **ciar* (**cer*) > Bahing *tšyar* 'to shine', Garo *sāl* 'sun', etc. (ST IV: 5)
- Basque **sikiro* > (BN, L) *zikhiro*, (AN, G) *zikiro* 'castrated ram' ~ PNC **zǝkǝ* 'goat, kid' > Karata *ç:iker* 'kid', Lak *çuku* 'goat', etc. (NCED 1094) ~ Burushaski *cigír* (Y), *chigír* (N), *chiír* (H) '(she-)goat'²²
- Basque **sinagurī* 'ant'²³ > (L) *zinaurri*, (BN) *xinaurri* [šinaurī], (G) *txingurri* [činguřī], etc. ~ PNC **zHĚmVķĀ* 'ant' > Chechen *zingat*, Ubykh *žəng^wá*, etc. (NCED 1093)
- Basque **selai* > (c) *zelai* 'field, meadow' ~ PEC **zǝlV* > Avar *ç:or* 'plain', Rutul (Shin.) *dil* 'plain, plateau', etc. (NCED 1092)
- Basque **simi(n)c(a)* > (AN, BN) *zimitz*, (L) *zimintza* 'bedbug'²⁴ ~ Dargwa (Chirag) *zimizal* 'ant', Archi *çimiçala* 'butterfly', Abkhaz *a-máça* 'locust', etc. < PNC **mižĀ* / **zimižĀ* (NCED 823)
- Basque **sorhi* > (BN, L, Z) *zorhi*, (AN, B, R) *zori* 'ripe, to ripen; fortune, luck', etc., (B) *zoli* 'to mature, ripen; nimble, lively; omen'²⁵ ~ PNC **zǝtV* 'healthy,

²² Assimilation or dissimilation has been in play, since the expected reflex in Burushaski would be *s-*.

²³ TRASK ([1997: 296]) reconstructs **zinagurri*. *Xinaurri* and *txingurri* are diminutive palatalized forms of the original. Words such as (B) *iñurri*, (Z) *üñhürri* 'ant' are clearly of separate origin — at least as to the first element. Possibly several words have contaminated each other and merged. Cf. also (B, G) *txindurri* 'ant'.

²⁴ Vasco-Caucasian insect words are very similar between the languages, expressive, and cross-contaminating. Cf. also *zinaurri*, *tximitxa*, *koko*, *kukuso*.

²⁵ The multiple, seemingly unrelated, meanings in Basque (and there are others), may perhaps be clarified by the Caucasian etymology: a basis of 'healthy, whole', whence 'prosperity' in Hurrian, which is close to the Basque meaning 'luck, fortune'. What is healthy and whole is also mature (ripe), and one who is healthy is fortunate.

whole' > Lak *çullu-* 'healthy, whole', Dargwa (Tsudakhar) *zara-se* 'healthy, whole', Abkhaz *a-b-zá* 'alive, living', Hurrian *šawlə* 'health, prosperity', etc. (NCED 1095) ~ ? PST **cāj* (? **cāl*) > Burmese *chai* 'to save', etc. (ST IV: 1)

- PEC **ʒōnʔü* 'navel' > Chechen *çonga*, Khinalug *cum*, Dargwa *zu*, etc. (NCED 1096) ~ Burushaski **-sú[m]* > (Y) *-sú*, pl. *-súmu*, (H, N) *-súi*, pl. *-súimuc* 'navel, umbilical cord' ~ Na-Dene: Eyak *caʔ* 'umbilical cord'; Navajo *cééʔ* 'navel', etc.

PDC **č*: The Basque reflex is lamino-alveolar **s*.

- Basque **sursu-* > (AN) *zurzulo*, *zurzuil* 'nape' ~ Dargwa (Akushi) *surs* 'neck', Godoberi *çors:a* 'gullet', etc. < PEC **čwĩrsV* (NCED 337)
- Basque **a-hiNs-pa* > (c) *ahizpa*, (Z) [ãhi̯spa],²⁶ (B) *aizta* 'sister (of a woman)' ~ PNC **-ičĩ* 'sister, brother' > Bezhta *is* 'brother', *isi* 'sister', Dargwa (Akushi) *uzi* 'brother', *ruzi* 'sister', Adyge *šə* 'brother', etc. (NCED 669) ~ Burushaski **-çu* > (H, N) *'-ço*, (Y) *'-çu* 'sister (of a woman); brother (of a man); husband of a sister of a man' ~ PST **čəjH* > Old Chinese 姊 **čəjʔ* 'elder sister', Proto-Kuki-Chin **tsei* 'elder brother', etc. (ST IV: 47) ~ PY **b[i]s* 'brother' > Ket *bišeʔp*, Pumpokol *bič*, etc. (SSEJ 210)²⁷ ~ Na-Dene: PAth **-Vʒ-* 'brother/sister' in Hupa *-ŋ-ʔoʒ* 'older brother', *d-ehʒ* 'younger sister', Navajo *-d-èèʒi* 'younger sister, mother's sister, wife's sister', etc.
- Basque **asal* > (c) *azal*, (Z) *axal* [ášal] 'skin, bark, peel'²⁸ ~ Abaza *čwa* 'skin, bark', Budukh *šič* 'skin (of cattle)', Hurrian *ašçi* 'skin', etc. < PNC **ʔwārčwǎ* 'skin, color' (NCED 228)
- Basque **ise-* > (c) *izeba*, (BN-Aldude) *izea*, (B) *izeko* 'aunt'²⁹ ~ PEC **-ilčwī* 'girl, woman' > Chechen *d-ēca* 'paternal aunt', Lak *duš* 'daughter', Tsakhur *iči* 'girl', etc. (NCED 952)

(Cf. English *whole* ~ *hale* ~ *hail* ~ *heal* ~ *health*; Latin *salus* ~ *salvus*, etc.) The /h/ in the Basque word is mysterious, since NCED reconstructs no laryngeal in PNC. NCED also remarks that the /t/ in Dargwa is irregular: one expects /l/ < *t. No doubt the phonology needs more work on both sides.

²⁶ There is a mysterious nasalization in Zuberoan, which TRASK ([1995: 14]), following MICHELENA, reconstructs as **anizpa*. In any case, the element *-(h)iz-* is compared with Caucasian **-ičĩ*, etc. The element *-pa* is probably related to West Caucasian **pa* (as in Abkhaz *a-pá*, Abaza *pa* 'son' (CWC 63).

²⁷ PY **b[i]s* presumably incorporates a fossilized class prefix (**b-*): cf. Chechen *w-aša* 'brother', etc.

²⁸ This comparison assumes that *-l* is a suffix. Cf. similar endings in Basque *magal* 'lap' (*q.v.*), *sabel* 'belly' (*q.v.*). Roncalese has the mysterious form *kaxal*, with unexplained *k-*.

²⁹ For the element *-ba*, see the note to *ahizpa*. For the fossilized prefix *i-*, see the **Morphology** section, below.

- Basque **asal* 'shallow' ~ PNC * $\bar{V}l\acute{c}V$ 'short, narrow' (< * $\acute{c}V\bar{t}V$) > Andi -*očo-* 'short', etc. (NCED 1021) ~ Burushaski **śal* 'shallow' ~ PST * $\acute{z}h\bar{e}nH$ (~ -*tH*, -*rH*) 'shallow' > Old Chinese 淺 **chen?*, etc. (ST IV: 141)

PDC **č'*, **č'*: There is no difference between the Basque reflexes of PDC **č'* and those of PDC **č'* (see below for the latter). They are initial **č'* (orthographic *tx*), secondarily > **š* (orth. *x*) in some (eastern) dialects; medial **s* (orth. *z*); **ś* in the clusters /*śk*/ and /*śt*/ (orth. -*sk-*, -*st-*); final **c* (orth. -*tz*).

- Basque **čiki* > (AN, B, BN, G) *txiki* 'little'³⁰ ~ Dargwa (Chirag) *čiq^waj* 'few', Agul *čiq* 'few', etc. < PEC * $\acute{c}w\bar{a}qV$ (NCED 379)³¹ ~ Burushaski **čiki* > (Y) *čiki* 'small'
- Basque **čimiča* > (B, BN, G, R) *tximitxa* 'bedbug'³² ~ Tabasaran *čamč* 'fly', Lak *čimučali* 'butterfly', etc. PEC * $\acute{c}imV\acute{c}V$ (NCED 379) ~ Burushaski (N) *čumúuso* 'a maggot that eats wool'
- Basque **čahal* > (Z) *txahal*, (BN, L, Z) *xahal* [šahal], (B) *txaal* [čaal], (B, G) *txal* [čal], (BN) *xal* [šal], (R) *xāl* [šāl] 'calf' ~ Cauc: Andi *čora* 'heifer', Agul *luč* 'heifer', Chechen *ēsa* 'calf', etc. < PEC * $H\acute{c}w\bar{t}V$ / * $H\bar{t}\acute{c}w\bar{V}$ (NCED 556)
- Basque **čořu* > (B) *txorru* 'root of hair' ~ PEC * $\acute{c}hw\bar{r}V$ 'hair' > Hunzib *čur* 'women's hair', Archi *čari* 'hair', etc. (NCED 378) ~ ? cf. Burushaski (Y) -*čúyuyay* 'the first hair of infants', (N) -*čhóyurian*, (H) -*čhóquran* 'hair cut in a fringe on the forehead, forelock'³³
- Basque **i-sāřdi* > (c) *izerdi*, (B) *izardi* 'sweat', (AN, BN, R also) 'sap' ~ PEC * $\acute{c}āt\bar{w}V$ > Chechen *čij* 'blood', Avar *čágo-b* 'alive', etc. (NCED 376) ~ PY **sur* 'red, blood' > Ket *sūl* 'blood', etc. (SSEJ 278)³⁴
- Basque *(H)*isu* > (B, G) *izu* 'fright, horror' (G) 'fierce, bad-tempered' ~ Bezhta *hičo*, *hičö* 'fright', Lak *huč* 'fright', Abkhaz *á-mc* 'lie', etc. < PNC * $\bar{h}Vm\acute{c}V$ (NCED 504) ~ Burushaski **ús* (gán-) 'to be wild, frightful; to fear, be afraid'
- Basque **ar-śka* > (c) *aska*, (R) *arska* 'crib, manger, trough' ~ Ubykh *čaq^wá* 'basin, tureen', etc. < PNC * $\acute{c}āq\bar{w}ā$ / $\acute{c}āq\bar{w}ā$ (NCED 332) ~ Burushaski (Y) *čiq* 'sifting tray; a measure of grain' ~ PST * $[\acute{C}e]k^w$ 'ladle' (ST IV: 70) ~ Ket *śi?k* 'trough for dough' etc. (SSEJ 275) ~ Na-Dene: Eyak *čaak-ł* 'dipper', Navajo *čaa?* 'basket, plate', etc.

³⁰ Vasconic is the source of Spanish *chico*, *chica*, etc. See other words in this section > Spanish. Initial /*č*/ did not exist, of course, in Latin.

³¹ Cf. also PNC * $\acute{z}ik\bar{w}Ā$ 'short' > Chamalal *čiku-b* 'small, short', etc. (NCED 1108).

³² Vasconic > Spanish *chinche* 'bedbug', etc. See the foregoing note, and the note to *zimitz*.

³³ Burushaski words appear to be compounded with -*γúyay*, -*γóyay* 'hair'.

³⁴ For the semantic match of 'sweat ~ sap ~ blood', cf. Old English *swātan* 'to sweat' and also 'to bleed'.

- Basque **harc* > (c) *hartz, artz* 'bear', **hars-ko(i)n* 'badger'³⁵ ~ PEC **χHVr[č]V* > Chechen *χešt* 'otter', Dargwa *χ:arç* 'marten, squirrel', etc. (NCED 1073) ~ PY **χas* > Kott *hās* 'badger' (SSEJ 299) ~ Na-Dene: Haida *xúuc* 'brown bear'; Tlingit *xúc* 'brown bear'; Path **xVč* ~ **xVs* 'brown bear' > Tsetsaut *xɔ*, etc.³⁶

PDC **ž, *ẓ̌*: As with PDC **č, *č̣*, there is no difference between the Basque reflexes of PDC **ž* and **ẓ̌* (and **ẓ̌*). The reflexes are consistently lamino-alveolar: initial **s* (orth. *-z-*); medial **s* (orth. *-z-*) or **c* (orth. *-tz-*); final **c* (orth. *-tz*).

- Basque **sul / *sur* > (c) *zur*, (B-Arratia, Orozko) *zul* 'wood, timber, lumber' ~ Andi *žala* 'branch, rod', Avar *žul* 'broom, besom', Tsakhur *žol* 'sheaf', etc. < PEC **žw[ě]h̄* (NCED 1103)
- Basque **hasi* 'to grow, swell; to grow, cultivate, bring up; seed; semen' > (BN, L, Z) *hazi*, (B, G, AN, R) *azi* ~ Avar *-iž-* 'to grow', Dargwa (Akushi) *=uz-* 'to grow', etc. < PEC **=VžV* (NCED 1038) ~ Burushaski **-úša-* 'to nourish, grow' > (H, N) *-úša-*
- Karata *žale* 'mane', Lak *zulū* 'nap, pile', etc. < PEC **žāth̄* (NCED 1101) ~ Burushaski **žal-* / **žal-* > (H, N) *jaláalimij* 'long hair (of people)', *jaléi, jalii* 'beard (of goat)'; (Y) *jaláš* 'hairy, hirsute' (*j* = [ž], *j* = retroflex affricate)
- Basque **bisař* 'beard', etc. (See above, under PDC **b*)

PDC **č*: The Basque reflexes are uniformly apico-alveolar (**š, *č*).

- Basque **solho / *sorho* > (AN, L, Z) *sorho* 'meadow', (G) *soro* 'field', (B) *solo* 'field (prepared for sowing)'³⁷ ~ PEC **čHätu* > Lak *šglu* 'earth, ground', Ingush *čil* 'ashes, dust', Tsakhur *žil* 'earth, floor', etc. (NCED 342)
- Basque **šale / *šare* > (c) *sare*, (B) *sale* 'net, grill, grate, stockade, manger'³⁸ ~ Avar *čali* 'fence, enclosure', Rutul *čal* 'enclosure for milking sheep', etc. < PEC **čiatē* (NCED 343) ~ cf. Yen: PY **čol-* > Ket *tōl* 'wicker hurdle' (SSEJ 287)
- Basque **aršto* > (c) *asto*, (R) *arsto* 'donkey' ~ Ubykh *čada*, Proto-Abkhazian **čada* 'donkey' (CWC, p. 314) ~ Burushaski **čhardV* > (H, N) *čhardá*, (Y) *čardé* 'stallion'

³⁵ This word has many variants: (Z) *harzkú, hazkú*, (R) *azkoĩ*, (L) *azkuin*, (BN) *azkoin*, (AN, L) *azkona*, (AN, B, G) *azkonar*, etc. It seems to be a compound of *hartz* + **ko(i)n*, the latter of which may be cognate with Yeniseian **kūñ* 'wolverine' (SSEJ 242, [BENGTON 1998c]).

³⁶ Na-Dene **x* for expected **χ*: influenced by cultural factors (taboo, etc.)?

³⁷ I consider the form *sorho* (with the cluster *-rh-*) to be native Basque, in contrast to *zoru* 'ground, floor' < Latin *solu(m)*.

³⁸ AZKUE defines Bizkaian *sale* more precisely as «Estacada puesto delante de pesebre para que los animales solo pueden asomar el morro.»

- Basque **lašto* > *lasto* (AN, B, G) 'straw (of wheat, barley, rye)', (B) 'straw of maize', (R) 'straw (of oats, maize, barley)' ~ PEC **ḷačā* 'leaf; a kind of plant' > Akhwakh *ḷača* 'a kind of edible plant', Budukh *qəç* 'straw', etc.
- Basque **e-uči* > *eutsi* (B) 'to take', (AN, B, G) 'to take hold, seize, grasp' ~ Dargwa =*uč-* 'to gather, collect', Avar =*ač:-* 'to carry', Kabardian *ša-n* 'to take, carry', etc. < PNC **-āčwV̄* (NCED 253) ~ ? Burushaski **sú-* 'to bring, fetch' ~ PST **ČōH* > Old Chinese 取 **cho?* 'to take', etc. (ST IV: 72) PY **?ūs-* 'to hold, hold back' > Ket *us-qot*, etc. (SSEJ 202)
- PEC **čōwq̄* > Udi *čax* 'cold, ice', etc. (NCED 346) ~ Burushaski **čhayúr-* 'cold, coldness' ~ PST **chik* 'cold' > Lushai *sik*, etc. (ST IV: 28) ~ PY **čəg-* 'icy crust on snow' > Kott *šāk, šā, šāg*, etc. (SSEJ 216)
- PEC **čāčwV*³⁹ > Dargwa *čiči-k'an* 'small stone', etc. (NCED 382) ~ Burushaski **čhiš* 'mountain, hill' ~ PY **čiʔs* 'stone' (SSEJ 217) ~ Na-Dene: Eyak *či-š* 'beach, sand bank, gravel bank, sand, gravel'

PDC **č*: The Basque reflexes are the same as for PDC **č* (see above).

- Basque **čori* / **čol-* > (c) *txori* [čori] ~ (AN, BN, L, Z) *xori* [šori] 'bird'⁴⁰ ~ Chamalal *čor* 'bird', etc. < PEC **čHwīlV* (NCED 388) ~ ST: Tibetan m-*čhil-pa* 'sparrow' ~ PY **?VčilV* 'bird' > Kott *nenā-šili*, etc. (SSEJ 204)
- Basque **ččaink-* > (BN, Z) *txainku* [čájŋkü], (BN, L) *xanku* [šanŋkü], (G) *txan-keŋ* [čanŋket] 'lame' ~ PEC **čānkV* > Rutul, Tsakhur *čanŋ* 'trap'⁴¹ (NCED 384) ~ Burushaski **čanŋú* > (H, N) *čanŋú*, (Y) *čanŋú* 'lame, crippled'
- Basque **čehume* > (c) *txeme* [čeme], (R) *xeme* [šeme], (BN) *xehume*, (Z) *xehüne* 'demi-empan / span of thumb and index finger' ~ Dargwa (Chirag) *čim* 'span', Lezgi *čib* 'span', etc. < PNC **čwimhV* (NCED 391)⁴² ~ cf. PST **sūm* (**Čūm*) > Jingpo *žum* 'the length of two hand-breadths, with thumb extended between', Lushai *sūm* 'a measurement equal to twice the length of the closed fist', etc. (ST IV: 123)
- Basque **fauso* > (c) *hauzo*, *auzo*, (Z) *áizo* 'neighbor' ~ Chechen *hāša* 'guest', Ubykh *p-čā* 'guest', etc. < PNC **HVčwĚ* (NCED 612) ~ Burushaski **aúsi-* > (Y) *aísin*, (H, N) *oósin* 'guest'

³⁹ PEC **čāčwV* (appears to be assimilated) < **čāčwV* ?

⁴⁰ We find this straightforward etymology more plausible than the convoluted derivation proposed by MICHELENA (see [TRASK 1997: 296]).

⁴¹ A trap cripples that which it catches.

⁴² NCED 392 notes: «The original meaning ... was probably 'span between the thumb and the small finger' ... Outside the Andian area ... **čwimhV* obtained first the meaning 'span (in general)', and sometimes ... the meaning 'span between the thumb and the fore-finger'.»

- PEC *čwǫhǫli > Avar č:^wad 'ash tree', Rutul čul 'willow' (NCED 394) ~ PST *čVł 'a kind of bamboo' > Lushai čāl, etc. (ST IV: 56) ~ Na-Dene: Tlingit čáal 'willow'
- Basque *aško, *aški > (c) asko 'many, much', aski 'enough' ~ Kabardian -šx^wa 'big', Lak čǧ-u- 'many', etc. < PNC *čHəqwV (NCED 386) ~ Burushaski *sóq- > (H, N, Y) sóq-um 'wide, broad' ~ cf. ST: PST *čök 'enough' > Tibetan čhog, etc. (ST IV: 52)
- Basque *hoc > (c) hotz, (B, G, AN, R) otz 'cold' ~ Hinukh -očču 'cold', Chechen ša 'ice', Ubykh čə 'cold', etc. < PNC *(r)HEčwV / *čwE(r)HV 'cold' (NCED 393)⁴³

PDC *č: There is no difference between the Basque reflexes of PDC *č and *č (and *č). (See above).

- Basque *suma- > (c) zumar 'English elm (*Ulmus procera*)', (Z) zünhar 'elm', (G) zumaldi 'grove' ~ PEC *šfǫmV > Hunzib šumal 'bushes', Lezgi žum 'quince', etc. (NCED 1107) ~ Burushaski juú ~ ju (< *žū < *žum-) 'apricot' ~ cf. Yen: PY *[š]am- 'berry' > Kott čamar šulpi 'cranberries', etc. (SSEJ 308)
- Basque *sil-haga 'stake, fence' ~ PEC *žilV (~ -ē-, -ā-, -t-) > Tsez želi (~ -i-) 'wattle fence', Ingush žel 'sheep-fold', etc. (NCED 1108) ~ Burushaski (H, N) joóli 'milk filter woven out of twigs' ~ PST *žiarH (*žerH) > Lushai čhiar 'barn, granary', etc. (ST IV: 137)
- Basque *sul/r > (c) zur, (B-Arratia, Orozko) zul 'wood, timber, lumber' ~ Andi žala 'branch, rod', Avar žul 'broom, besom', Tsakhur žol 'sheaf', etc. < PEC *žw[ē]ḥ (NCED 1103)
- Basque *sohar > (c) zo(h)ar 'clear (sky, weather), to clear' ~ PEC *HužV-n 'to clear up (of weather)' > Udi muč:ur 'clear sky', etc. (NCED 611) ~ Burushaski *čāη 'to clear (of sky)', *čān 'to half-clear (of sky)', *žāη 'to stop (raining)' ~ PST *Čāj > Burmese 'to stop (rain or sound), to clear (weather)', etc. (ST IV: 71) ~ PY *žēč- (*žēč-) 'clear (of weather)' (SSEJ 189)
- Basque *Haice > (R) atze 'tree', (BN, Z) -tze (suffix in tree names) ~ PNC *Hā(r)žwī > Karata ežela 'pine tree', Khwarshi aža 'tree', etc. (NCED 549) ~ PY *ži? > Ket žiže, diže 'tree trunk', Kott či (SSEJ 310)
- Basque *hasi 'to grow, swell; to grow, cultivate, bring up; seed; semen' > (BN, L, Z) hazi, (B, G, AN, R) azi ~ Avar -iž- 'to grow', Dargwa (Akushi) =uz- 'to grow', etc. < PEC *=VžV (NCED 1038) ~ Burushaski *-úša- 'to nourish, grow' > (H, N) -úša-

⁴³ PNC reconstruction slightly modified (*r* in parentheses): «It is not quite clear whether *r*- ... should be treated as a former class prefix or as part of the root.» ([NCED: 394]). There is no /r/ in the Basque word, so I would favor the former option.

Lateral affricates: The original phonemes are well preserved in Na-Dene languages and some Caucasian languages (especially Avar-Andian and Tsezian). In Basque and Burushaski the reflexes are conditioned depending on initial, medial, or final position. Initially all DC lateral affricates become Basque *l-*, Burushaski *t-/d-*. Medially they become Basque *-řd-*, Burushaski *-lt-/-ld-* (*-lj-* before *-i*). Finally they become *-l* in both languages. In Sino-Tibetan we find laterals **ʃ* or **l* initially, velars **k* (~ **ŋ*) finally. In Yeniseian the pattern is initial glide **j* versus medial or final liquid (PDC **ʃ* > **l* or **ʃ*; PDC **l* > **r*), or uvular (PDC **ʃ* > **χ*).

PDC **ʃ*:

- Basque **limuri* > (Z) *limuri* 'humid, slippery' ~ PEC **ʃHwemV* 'liquid' > Avar *ʃ:amí-ja-b*, etc. (NCED 768) ~ PST **ʃüm* > Lushai *tlum* 'to draw in, go in, sink', etc. (ST III: 79) ~ Na-Dene: PEA **ʃeʃ* > Navajo *-ʃèèh, ʃééʔ* 'wet object moves', etc.
- Basque **lisun* > *lizun* (c) 'moldy, musty, mustiness', (AN, B, G) 'dirty, untidy' ~ PEC **ʃwilçwV* 'dirt; bog, marsh' > Andi *ʃenç:u* 'bog, marsh', etc. (NCED 770) ~ cf. Na-Dene: Eyak *ʃick, ʃack* 'dirt, dust'; Sarsi *-ʃi:z* '(be) swampy', Chipewyan *-ʃés* 'mud', Navajo *-ʃiš* 'mud, clay', etc.
- Basque **leřa* 'slipping, sliding; to slip, slide' ~ PEC **ʃVʃV(r)* 'to crawl' > Karata *ʃ:or-*, etc. (NCED 224) ~ Na-Dene: Haida (Alaskan) *ʃuuʔúŋ* 'to crawl'; Tlingit *ʃux* 'to creep, crawl'
- Basque **VřdV* > (B) *erdu* 'come!, come ye!', (Z) *orde-zü* 'go!' ~ PNC **-řrʃŰ* 'to go, walk, enter' > Archi *a-ʃi-* 'to come', Lak *ulu* 'let's go!', etc. (NCED 422)
- Basque **b-ařdin* 'the same, equal, even, smooth' > (c) *berdin, bardin* ~ PEC **-ařwVn* 'to resemble, similar' > Avar *r-eʃ:-in* 'to be similar, resemble', Khwarshi *-ař-* 'similar, alike', etc. (NCED 261) ~ PST **ʃóm* (**T-lóm*) > Old Chinese 同 **ʃōŋ* 'to be the same, join, unite', etc. (ST III: 74)
- Basque **a-řdař* > **adař* > (c) *adar* 'horn' ~ PEC **ʃwřV* > Avar *ʃ:ar* 'horn', etc. (NCED 771) ~ Burushaski **ltúr* > (H) *-ltúr*, (Y) *tur* 'horn'
- PEC **-iřwV-n* > Avar *ʃ:u-t-* 'to run (away)', etc. (NCED 639) ~ PST **ʃăj(H)* 'to run, gallop' > Old Burmese *p-lij* 'to run', etc. (ST II: 56) ~ Na-Dene: PAth **ʃa-χ* (d) > Chipewyan *-ʃà, -ʃá* 'to move fast, run', etc.

PDC **ʃ*:

- Basque **lokV-* > (B, G) *loki*, (R) *lokun, lokune* 'temple (of head)' ~ PEC **ʃarqwě* > Khwarshi *ʃoqo* 'forehead', Avar *ʃayúr* 'cap', etc. (NCED 775) ~ cf. ST: PST **[ʃ]ěk^w* > Tibetan *ltag* 'back part of the neck, nape; back', etc. (ST III: 62) ~ Na-Dene: PAth **ʃaχ* > Navajo *ʃàh* 'temples', etc.
- Basque **lirain* > (B, G, L) *lirain* 'slender, svelte, lithe' ('esbelto [de personas y animales]') ~ PNC **-iřiV* 'thin' > Avar *teréna-b*, Khinalug *ķir* 'thin',

- etc. (NCED 639) ~ Burushaski (H, N) *tharén-um* 'narrow, tight (of clothes)' ~ cf. Na-Dene: Haida *ḵa-* 'thin, flat object'
- Basque **leřo* > (c) *lerro* 'line, file, row' ~ PEC **ḵwār(h)ǎ* 'boundary' > Avar *ḵ:er* 'garden bed, terrace, row, rank', Dargwa *jara* 'furrow', etc. (NCED 782)
 - Basque **lahar* > (BN, L) *lahar*, (AN, B, G) *laar*, (AN, G) *lar*, (Z) *nahar*, (Sal) *naar*, (R) *nar* 'bramble, creeping plant' ~ PNC **ḵwǎřV* 'leaf' > Andi *ḵoli*, Dargwa *ka* 'leaf', etc. (NCED 784) ~ PST **ḵā(k)* 'leaf' > Mikir *lo*, Magari *hla*, etc. (ST III: 57)
 - Basque **lařto* 'straw', etc. (see above, under PDC **č*)
 - Basque **erđi* > (c) *erđi* 'half, middle' ~ PNC **=ǎḵĚ* 'half, middle' > Bezhta *=aḵo* 'middle', *=aḵo-kos* 'half', etc. (NCED 412) ~ PST **ḵǎj* 'navel, center' > Tibetan *lte* 'navel, center', etc. (ST III: 56) ~ PY **ǎa(?)l* 'half' > Ket *d-aḵa*, etc. (SSEJ 178)
 - Basque **arđac* 'axle' (*ehun-ardatz* 'spindle') ~ PEC **ǎnḵV* 'spindle, pivot' > Bezhta *aḵ* 'spindle', Agul (Burshag) *harḵil* 'pivot of a spindle', etc. (NCED 236); cf. also PEC **ǎḵwǎř* 'handle' > Avar *řorḵ:*, etc. (NCED 238)
 - PNC **Hḵǎñü* 'bottom' > Bezhta *ǎḵo*, Avar *řínu*, etc. (NCED 590) ~ Burushaski (H) *táno* 'rectum' ~ PST **[lj]ǎŋ* > Lushai *thlan* 'lower, down, west', etc. (ST III: 30) ~ Na-Dene: Haida *s-ḵa-wul* 'rectum'; Navajo *-ḵááh* 'bottom', *-ḵàà?* 'buttocks'
 - Avar *ḵ:an* 'groin', Agul *k:un* 'ankle', etc. < PEC **ḵwVnřV* (NCED 785) ~ Burushaski **ltén* 'bone' > (H, N) *-ltín*, (Y) *ten* 'bone', *búmba-lten* 'ankle' ~ Na-Dene: **ḵěH* > Hupa *-ḵeh* 'crotch', Chipewyan *-ḵé* 'between the legs of', Navajo *ḵěh*, *-ḵěh* 'crotch', etc.

PDC **ḵ:*

- Basque **lařu* > (c) *larru*, (B) *narru* 'skin, hide, leather' ~ Dargwa (Akushi) *guli* 'skin, sheepskin', Avar *ḵ:er* 'color' (< '*skin') < PNC **ḵǎli* (NCED 789) ~ Burushaski **tar-* > (H, N, Y) *tar-ín* 'skin bag'⁴⁴
- Basque **laři* > (B) *larri* 'sadness, anxiety, anguish; sad, anxious, worried', etc. ~ Chechen *lúra* 'severe, dangerous', Bezhta *=iḵaro* 'hard', etc. < PNC **ḵwěřV* 'hard, severe, stern' (NCED 792)
- Basque **u-řdail* > *urdail* (AN, B, G, L) 'stomach', (B) 'abomasum', (B, G) 'womb, uterus'⁴⁵ ~ PEC **=řarḵV* 'stomach, abomasum, rennet' > Tindi

⁴⁴ Assimilation and dissimilation are probably at play in this etymology. (? PDC **lori* ~ **leru* > Bsq **lařu*, PNC **ḵǎli*, Bur **tar-*.)

⁴⁵ Caucasian has **=řarḵV*, so assimilation or dissimilation is assumed. Lak *č:arlu* 'kidney' requires metathesis (< PEC **=řarḵV*), and assimilation would produce PEC **=řarḵV*,

b-*eλ:u*, Archi b-*aλ*, etc. (NCED 670) ~ Burushaski *-*úl* 'abdomen, bowels' ~ PST **λǝw* (**T-lǝw*) 'belly, stomach' > Tibetan *lto*, etc. (ST III: 77) ~ cf. Na-Dene: Haida s-*láan* 'intestines'

- Basque **i-sār̥di* 'blood', etc. (see above, under PDC **č*)
- PEC **=iłV* 'to put' > Bezhta *g=il-*, etc. (NCED 641) ~ PST **λuaH* > Lushai *tlo?* 'to do', etc. (ST II: 78) ~ Na-Dene: Haida s-*λο* 'to put inside, arrange', -*λο* 'motion in a vehicle'
- PNC **ŁārV* 'hare' > Ingush *lerg*, etc. (NCED 788) ~ Burushaski **tur-* (in *tur-cún* ~ *tur-sún* 'marmot') ~ Na-Dene: PEA **λu·n?* > Eyak *łū·*-*diyahs* 'mouse', Navajo *łóó?* 'prairie dog', etc.

Velars: The Basque reflexes are clear: PDC **k* > Bsq **h*, PDC **k* > Bsq **k*, PDC **g* > Bsq **g*.

PDC **k*:

- Basque **hac*, **be-hac* 'finger, paw, thumb, toe', etc. ~ Avar *k^wač* 'paw', Dargwa *kača*, *k^wač(a)* 'paw', etc. < PNC **k^wǎnVčē* ~ cf. Na-Dene: P^Ath **-keč* 'claw' > Hupa *-keč*, Mattole *-čēłx*, etc.
- Basque **haundi* > (c) *handi*, (BN, L) *haundi*, (B, G) *aundi* 'great, big, large' ~ Proto-Circassian **k^{hw}a(n)də* 'much, many' > Adyge *k^{hw}andə*, Kabardian *k^wad* (Kuipers 1975)
- Basque **hüri* > (BN, L, Z) *hiri*, (BN, R) *iri*, (B, G) *uri* 'village, city' ~ PNC **kitū* > Avar *kulí* 'farmstead' Abkhaz a-*kála* 'hut', etc. (NCED 692) ~ cf. ST: PST **g(h)ual* > Tibetan *khul* 'domain, province, district', etc. (ST V: 24)
- Basque **hon* 'good' > (c) *on*, (BN, Z) *hun* ~ PEC **=iḱwVn* /**=inḱwV* > Urartian *gunə* 'right (not left), true', Avar *k^warána-b* 'right' (< **k^wVnV-r-*), Chechen *dika* 'good', etc. (NCED 643)
- Basque **har-* > (BN, L, Z) *har-tu*, (AN, B, G) *ar-tu* 'to take, receive' ~ Archi *kar-* 'to take with, provide, deliver', Abkhaz a-*ga-rá* 'to bring, carry', etc. < PNC **=ikĀr* (NCED 632) ~ PST **g(h)ūr* > Tibetan *khur* 'burden, load', *ākhur* 'to carry, convey', etc. (ST V: 25)
- PST **kīw* > Tibetan s-*gu*-stegs 'elbow, angle' (cf. *khyu* 'elbow'), Lushai *kiu* 'elbow', etc. (ST V: 55) ~ Na-Dene: Haida s-*kyúu-* 'on one's shoulder'; Tlingit *kìy* 'knee'

close to the Basque form. The Basque word also has the fossilized class prefix *u-* (see **Morphology**, below).

PDC *k:

- Basque **kankano* > (B) *kankano* 'large fruitstone, kernel, almond' ~ PNC **ḱVrḱV(-nV)* > Avar *ḱorḱónu* 'grape, berry', Abkhaz *a-ḱaḱán* 'nut', etc. (NCED 730) ~ Burushaski (N) *khakháayo* 'walnut (in the shell)⁴⁶ ~ Na-Dene: Haida *KáanKaay* ~ *KáanKaan* 'unripe berries', Navajo *-kóóʔ* 'seed, pit'
- Basque **kako* > (AN, B, G, R) *kako*, (Z) *khako* 'hook', (B) 'clothes hanger, clothes hook', etc.⁴⁷ ~ Tabasaran *ḱaḱ* 'top, edge; point, tip', Abkhaz *a-ḱ^wáḱ* 'corner', etc. < PNC **ḱwěḱě* (NCED 733)
- Basque **ke*, **e-ke*, **kino* > (c) *ke* 'smoke', (BN, L, Z) *khe*, (AN, R) *eke*, (B) *ke / kei-* 'smoke'; (BN, L) *k(h)ino* 'bad odor', (Z) *khíño* 'bad taste' ~ PNC **ḱwǎnhV* 'smoke' > Andi *ḱ:ʷoj* 'smoke', Bezhta *qo*, Udi *k:uin* 'smoke', Lak *ḱuw* 'soot', etc. (NCED 738) ~ PST **ghiw* > Burmese *khawh* 'smoke', Lushai *mei-khu*, etc. (ST V: 21) ~ PY **gi(?)ŋ* > Kott *kin* 'smell' (SSEJ 228)
- Basque **u-s-ki* > (c) *uzki* 'anus'⁴⁸ ~ ST: Tibetan *s-kyi-ša* 'anus' ~ Na-Dene: Haida *s-ḱyáaw* 'tail'; Tlingit *kí* 'rump, buttocks'
- PEC **ḱwēmṭi* 'lip' > Avar *ḱ^wet*, etc. (NCED 733) ~ PST **kham* (**khām*) > Lushai *kham* 'mouth', etc. (ST V: 87) ~ Na-Dene: Haida (Skidegate) *kú:da* 'lip'
- PEC **ḱalčwi* > Chechen *ḱuž* 'forelock, tuft of hair', Tabasaran *ḱarč* 'horn, plait, woman's hair', etc. (NCED 723) ~ Na-Dene: Haida (A) *skyaac*, (M) *skyaaz*, (S) *skü'dji* 'eyebrow'; Tlingit *xíisi* 'matted hair'
- PNC **ḱwíčĚ* > Dargwa *ḱač* 'spleen', Adyge *ḱ^wač* 'entrails, intestines', etc. (NCED 735) ~ PY **kič* > Ket *kít* 'meat', etc. (SSEJ 238) ~ Na-Dene: Haida *kíic* 'abdomen, belly, stomach'
- Basque **beko* 'forehead', etc. (see above, under PDC **b*)
- Basque **toki* 'place', etc. (see above, under PDC **t*)

PDC *g:

- Basque **gal-* 'to lose, get lost; spoil, be spoiled', etc. ~ PEC **igwVt* 'to lose, get lost; steal' > Tsakhur *a-g^wal-* 'to get lost', etc. (NCED 630) ~ PST **koj* (? **kol*) > Burmese *kwaj* 'to conceal', etc. (ST V: 59)
- Basque **goše* > (c) *gose* 'hunger, hungry' ~ PNC **gašē* 'hunger' > Lak *k:a-ši*, Rutul *gaš*, etc. (NCED 431) ~ Na-Dene: Galice *gas* 'become hungry'

⁴⁶ Unaspirated *k* is the expected reflex: this word has apparently been altered by phonosymbolic forces.

⁴⁷ The relationship of this word to (BN, L, Z) *gak(h)o* 'key' is uncertain. The latter could represent dissimilation of *k(h)ako*, or an original unassimilated form (if PNC **ḱwěḱě* is < **gwěḱě*).

⁴⁸ See below (DC morphology) for analysis of the fossilized prefixes *u-* and *-z-*.

- Basque **e-guř* > (c) *egur* 'firewood' ~ PEC **gōrV* > Tsez *giri* 'pole', Udi *gor, gorgor* 'pole', etc. (NCED 440) ~ ST: ? Tibetan *m-khar* 'pole, stick'
- PEC **gātV* > Tsezi *gilu* 'pole', Batsbi *gal* 'birch-tree', etc. (NCED 429) ~ Burushaski **gal* 'bridge; steps, cross-beams' ~ PST **kāt* > Tibetan *m-gal* 'billet of wood', Old Chinese 干 **kān* 'pole', etc. (ST V: 45) ~ PY **gɔʔl* 'stump' > Sym *kɔʔl*, etc. (SSEJ 228)
- PEC **gōnzi* (~ *-e*) > Dargwa *ganzi* 'ladder', Lezgi *gür:el* 'door jamb, door post', etc. (NCED 439) ~ Burushaski *ganc* 'spindle; neck of sitar' ~ Na-Dene: Haida *gáac* 'house post', Eyak *gaʔc* 'ladder'

Uvulars: The Basque reflexes are PDC **q* > Bsq **k*, PDC **q̣* > Bsq **k*, PDC **g* > Bsq **g*.

PDC **q*:

- Basque *(*e*)-*ken-* > (c) *ken-du*, (Z) *khen-t*, (AN-Aezk.) *eken*, (AN, BN) *eken-du* 'to take away, remove; go away, leave' ~ Tindi *q:an-* 'to snatch, take away', Khinalug *-aq:in-* 'to hold, keep, catch', etc. < PEC **HVqVn-* (NCED 615)
- Basque **e-kař-* > (c) *ekarri*, (Z) *ekhar* 'to bring' ~ Archi *χa-* 'to drag, carry', Andi *q:ur-d-* 'to pull, drag', etc. < PNC **-HīqV(r)* (NCED 575)
- Basque **kola* in (BN) *gar-kola*, (BN, Sal) *gar-khora* 'nape' ~ PEC **qHwōtwV* > Tindi *χolu* 'back of the head', Lezgi *χew* 'collar', etc. (NCED 894) ~ PST [**Kal*] > Tibetan *m-gal* 'jaw', Magari *gal* 'cheek', etc. (ST V: 111) ~ PY **χol* 'cheek' > Ket *qɔʔet*, Kott *hōl*, etc. (SSEJ 302) ~ Na-Dene: Haida *qúl* 'forehead', Eyak *l-quhʔ* 'cheek'⁴⁹
- Basque **muku-ř* > (B) *mukur* 'trunk, base of tree', (Z) *mũkhür* 'très grosse bûche'⁵⁰ ~ PEC **mhōqwe* 'oak-tree' > Tsakhur *moq*, Avar *mik:*, etc. (NCED 811) ~ cf. ST: Old Chinese 木 **mhōk* 'tree, wood'
- PEC **qVdV* 'brisket' > Avar *me-héd*, Bezhta *γade* (NCED 897) ~ Burushaski **qVt-* > (H) *-qat*, (N) *-qhat*, (Y) *-qet-aran* 'armpit' ~ ST: Tibetan *s-ked-pa* 'waist' ~ PY **qot-* > Ket *Imbat qpta* 'ahead, forward', etc. (SSEJ 263) ~ Na-Dene: Haida (S) *s-qōt*, (A) *s-qūt* 'armpit'; Tlingit *χèt* 'chest, breast'; Navajo *-γid* 'breastbone'
- Cauc: Udi *qoš* 'behind', etc. < PEC **-VqV* (NCED 1026) ~ Burushaski **-qhás* > *-qhásin* (H, N) 'hind end, arse', *-xášan* (Y) 'female sex organ'

⁴⁹ Metonymy (semantic «migration») is common in body-part words. Cf. the set beginning with Basque *loki* 'temple' (under PDC **ʔ*). An accepted Indo-European etymology includes Sanskrit *kakṣa-* 'armpit', Latin *coxa* 'hip', Irish *coss* 'foot' (!).

⁵⁰ See **Morphology**, below, for the fossilized ending *-r*.

- PEC **qwV-* 'egg' > Avar *χo-nó*, Udi *qoq-la*, etc. (NCED 905–906) ~ PST **Qo(w)H* 'egg' > Tibetan *s-go-ŋa* 'egg(s), spawn', Burmese *uʔegg'*, etc. (ST V: 171) ~ Na-Dene: Haida (M) *qaw* '(bird) egg'
- PEC **qwīti* > Lak *qʷit'* 'Adam's apple; beak', Kryz *χulut'* (< **χut'*-ul) 'larynx', etc. (NCED 905) ~ Burushaski **qhát* > (H, N) *-qhát*, (Y) *-xát, -xat* 'mouth'
- Basque **kaiku* > (AN, B, G, L) *kaiku* 'wooden bowl (used for milking sheep)⁵¹ PEC **qwāqwV̄* > Avar *heh* 'basket', Lezgi *χʷax* 'trough', etc. (NCED 899) ~ PST **guāk* > Garo *khok* 'basket', etc. (ST V: 16) ~ PY **qək-* 'spoon' > Ket *qəkt(a)*, etc. (SSEJ 259) ~ Na-Dene: Haida *qikw* 'basket', Tlingit *qákw* 'basket'⁵²
- Basque **tak-* 'heel', etc. (see above, under PDC **d*)
- Basque **asko, *aski* 'many, much; enough', etc. (see above, under PDC **č*)

PDC **q̄*:

- Basque **kerac* > (AN) *kerats* 'stench', (Z) *kharats* 'bitter, sour', (R) *karats* 'bitter', (BN) *karats* 'stench' ~ PNC **q̄ēfilV* > Archi *qala* 'bitter', Ubykh *qáqá* 'sweet', etc. (NCED 912) ~ Burushaski **yaqá-* > (Y) *qaqá-m*, (H, N) *yaqáy(-um)* 'bitter' ~ PST **ghāH* 'bitter' > Burmese *khah*, etc. (ST V: 18) ~ PY **qVqVr* > Ket *qōlīŋ* 'bitter', etc. (SSEJ 266)
- Basque **kel/dař* > (c) *kedar*, (Z) *khedárre*, (BN, L) *kelder*, (G) *kelar*, (R) *gedar* 'soot' ~ Akhwakh *q̄:ēʔa* 'soot', Lak *q̄it* 'soot; flour dust', etc. < PEC **q̄idV* (NCED 927) ~ Na-Dene: Haida *gayt / gayt'áa* 'ashes'; Tlingit *kélt'* '(wood) ashes'
- Basque **koč/č* > (c) *kokots*, (BN, L) *kokotz*, (B) *okotz* '(point of) chin; snout (of animal)' ~ PEC **q̄āčř* > Lak *q̄aç* 'bite; mouth', Rutul, Tsakhur *q̄aç* 'chin', etc. (NCED 907) ~ Na-Dene: Tlingit *χás* 'jaw', Eyak *l-q̄aʔč* 'jaw, angle of jaw'
- Basque **u-kondo* > (L) *ukhondo*, (AN-Baztan, B, Sal) *ukondo*, (BN-Aldude) *ukhundo* 'elbow'⁵³ ~ PEC **q̄HwəntV* > Lezgi *q̄ünt* 'elbow', Hinukh *qontu* 'knee', etc. (NCED 925) ~ cf. ST: Tibetan *s-gyid-pa* 'knee-joint, knee-hollow, calf' ~ PY **g[i]d* > Ket *uł-git* 'elbow', etc. (SSEJ 227) ~ Na-Dene: Eyak *cuhd* ~ *guʔd* ~ *gūhd* 'knee'; PAth **-G(w)ut* > Hupa *-goʔ*, Navajo *-gòd* 'knee'

⁵¹ Contra the supposition that *kaiku* comes from Latin *caucu-*, a very obscure word for 'drinking vessel' ([TRASK 1995: 48]). More likely this is an old Dene-Caucasian word preserved by the Basque shepherds for this lowly but basic use.

⁵² The Yeniseian and Na-Dene words suggest original **qVk-*, with progressive assimilation in Caucasian and regressive assimilation in Sino-Tibetan.

⁵³ AZKUE cites an archaic Bizkaian form, *ukaondo*, which appears to be influenced by the obscure word *uk(h)o* 'forearm' (used by the 17th-century writer OIHENART). I think *uk(h)ondo* is the continuation of the most widespread Dene-Caucasian word for 'knee/elbow'. See **Morphology**, below, for the fossilized prefix *u-*.

- Basque **a-kain* > (G) *akain*, *akain̄*, *akaña*, (B) *akan* '(large) tick'⁵⁴ ~ Cauc: Chechen *γēnig* 'louse', Dargwa *q̄i* 'nit', etc. < PEC **q̄ān?V* (NCED 911) ~ Burushaski *khin* (H, N), *khen* (Y) 'flea' ~ cf. ST: PST **kin* 'ant' (ST V: 55)
- Basque **e-aki-n* > (c) *jakin* 'to know (a fact)/ savoir' (< **e-aki-n*)⁵⁵ ~ Akhwakh *=eḡ-* 'to know', Khwarshi *=iḡ-* 'to know', Dargwa *=aḡ-* / *=iḡ-* 'to hear', etc. < PNC **-iḡE* 'to know, hear' (NCED 646) ~ Burushaski **-ki-* 'to learn'
- Basque (AN, BN, L) *kaillu* [kai̯lu] 'rind, bark, crust, peel' ~ PEC **q̄wā-tV* > Akhwakh *q̄oli* 'crust, rind', etc. (NCED 931) ~ Na-Dene: Haida *q̄at* 'skin'; Sarsi *-kāt* 'hide', Navajo *-kaṭ* 'leather'⁵⁶
- Basque **o-ski* > (c) *oski* 'shoe' ~ PEC **q̄HwōšwV* (~ **šwōḡHwV*) > Dargwa (Akushi) *q̄qš* 'foot, leg', Tabasaran *šaq̄^w* 'heel', etc. (NCED 926) ~ Burushaski *šoḡ* 'sole of shoe' ~ Na-Dene: Haida *st'a-q̄usii* 'heel'; Tlingit *q̄os* ~ *χus* 'foot'; Eyak *-q̄a-š* 'foot', *-q̄e:s* 'ankle'
- PEC **q̄Hwač̣i* > Lezgi *q̄üč̣* 'armpit', Chamalal *q̄:uča* 'vagina', etc. (NCED 922) ~ Burushaski (Y) *quš* 'armpit (of clothing)' ~ Na-Dene: [*q̄eHṣ̌*] > Chipewyan -(n)-*k̄ēs̄i* 'armpit', Hupa *-q̄ehṣ̌-*, etc. (Go 116)
- PEC **q̄HwVIV* > Tsez *q̄^wala* 'ankle', Lezgi *q̄ül* 'foot, kick', etc. (NCED 927) ~ Na-Dene: Haida (M) *q̄uluu* 'knee'
- PEC **q̄ar[H]V* > Akhwakh *=aci-q̄a* '(first) cousin', Rutul *ču-χud*-did 'stepfather', etc. (NCED 909) ~ PST **K^wrij* > Burmese *khriwiyh*-ma 'daughter-in-law, son's wife', Jingpo *khri* 'paternal aunt's daughter, sister's children, son-in-law' (ST V: 132) ~ PY **qar(ɣ)* 'grandchild' > Ket *qal*, Yug *xarɔx*, etc. (SSEJ 256) ~ Na-Dene: [**q̄e'y*] > Hupa *-q̄eey* 'brother-in-law', Galice *-keeyoo* id., Navajo *-k̄éi* 'kindred, relatives', etc. (Go 116)
- PEC **q̄ām[s]V* 'cartilage, gristle' > Dargwa *q̄ams*, Tabasaran *q̄ašq̄aš*, etc. (NCED 908) ~ Na-Dene: Eyak *q̄ahš* 'bone'
- PY **q̄qante* > Ket *q̄:t* 'hunger', Arin *q̄ogat* 'hungry', etc. (SSEJ 265) ~ Na-Dene: Haida (A) *q̄ut* '(be) hungry', *q̄udaal* 'famine', *q̄ut'áan̄* 'to beg for food', (S) *q̄ud* 'hungry'
- Basque **u-dagara* 'otter', etc. (see above, under PDC **d*)

PDC **g*:

- Basque **gogor̄* > (c) *gogor* 'hard; durable; rigid' ~ PEC **ḡwērV* 'stone' > Khwarshi *γur*, etc. (NCED 467) ~ Burushaski (Y) *γoró*, (H, N) *γuró* 'stones' ~ PST **Kor* > Tibetan *gor* 'stone(s), rubble', etc. (ST V: 121)

⁵⁴ See **Morphology**, below, for the fossilized prefix *a-*.

⁵⁵ [MICHELENA 1961: 119].

⁵⁶ The expected reflex in Sarsi and Navajo would be *k̄*. Unexplained.

- Basque **agoř*, **egaři* > (c) *agor* 'dry', *egarri* 'thirst'⁵⁷ ~ PNC **-iġwĀr* 'dry, to dry' > Avar *aq;:w̄arab*, etc. (NCED 631) ~ Burushaski (N) *qharáo* 'dried up' ~ PST **kār* 'dry' > Old Chinese 乾 **kār*, etc. (ST V: 50) ~ PY **qor*, **qV[G]i-* 'dry' > Kott *šī-gal*, Arin *qoja*, etc. (SSEJ 265) ~ Na-Dene: Tlingit *-q̄wan* 'to dry (salmon)'; PAth **caŋ* 'dry' > Ingalik *-caŋ* 'dry', Navajo *-gàn*, etc.
- Basque **gīlc* > (c) *giltz*, *giltza* 'key; joint'⁵⁸ ~ Hunzib *bōši* 'bar, (door-)bolt', Lak *q:iča* '(door-)bolt', etc. < PEC **ġHwālċV* (NCED 459) ~ PY **qēž* > S. Ket *qer* 'pole', etc. (SSEJ 258)
- Basque **gune* > (BN, L, R) *gune*, (Z) *güne*, (AN, B, G) *une* 'place, space, interval, point'⁵⁹ ~ PNC **ġwin?V* > Bezhta *qun* 'farmstead', Kabardian *wəna* 'house', etc. (NCED 471) ~ cf. ST: PST **qīm* 'house' > Tibetan *khyim*, etc. (ST V: 154) ~ Na-Dene: [**qin* ~ **qun*] 'house' > Chipewyan *kū-é* ~ *kī-é*, Navajo *kìn*, etc.
- Basque **goř-* > (c) *gorri* 'red; incandescent', *gor-din* 'raw'⁶⁰, *gorringo* 'yolk of egg' ~ Burushaski (N) *gir* 'water that flows from a wound' ~ Na-Dene: Haida (S) *gai*, (A) *ŷáy* 'blood', *sŷit* (*s-ŷi-t*) 'to be red' (cf. Basque *gorri-t* 'become red'); Tlingit *-ce* / *-gi* 'bright, shining'; PAth **-caŋ* 'white' > Navajo *-gàì*, etc.⁶¹
- Basque **hogeì* > (c) *hogeì*, *ogeì*, (BN, L) *hogoi* '20' ~ PEC **ġǎ* '20' > Dargwa *ȷa-*, Khinalug *q̄a(n)*, etc. (NCED 456) ~ PY **?e?k* 'twenty' > Ket *ε?k*, etc. (SSEJ 186)
- PNC **nHřwġĀ* / **ġHwřnĀ* > Ubykh *naq* 'armpit', Archi *qun* 'shoulder', etc. (NCED 853) ~ ST: Old Chinese 肩 **kēn* 'shoulder' ~ PY **ken-* > Kott *hēnar* 'shoulder', Arin *qinan* 'arm', etc. (SSEJ 236) ~ Na-Dene: PAth **-gà* 'nə? 'arm' > Mattole *-ga'n-ə?*, Navajo *-gààn* 'arm; foreleg (of animal); limb (of tree)', Hupa *gan-tag* 'shoulders', etc. (Go 116, KL 140)

⁵⁷ Basque has several words for 'dry', depending on the referent. In Zuberoan *agor* applies only to sources and streams of water, *ütsal* (*q.v.*) to aliments and terrain, *eihar* to the human body, animals, and vegetation, and *idor* to dryness in general ([LARRASQUET 1939]). In Bizkaian *legor* or *idor* apply to vegetation, *igar* to animals and bones ([AZKUE 1905]). See also [TRASK 1995: 13].

⁵⁸ Possibly *giltz* 'key' and *giltz* 'joint' are homonyms, of distinct origins. If so, it is 'key' that belongs with PEC **ġHwālċV*.

⁵⁹ See the discussion by Trask (1995: 36). AN, B, G *une* possibly via an intermediate form **bune*.

⁶⁰ The relation of 'raw ~ blood' as in English *raw* (< *hræw*), cognate with Russian *кровь* 'blood', Greek *χρῆμας* 'flesh', etc.

⁶¹ There is no **r* in Proto-Na-Dene. PDC initial **r* became PND **d* (see under PDC **r*), and in other positions it became a nasal (*n*) or glide (*j*). Here we posit PDC **ġVr(i)* 'blood, red' > PND **gaj*.

- PEC **ḡwōrʒe* 'hare' > Hunzib *qi*, Budukh *q:ur*, etc. (NCED 472) ~ PST **qh^wār* > Old Chinese 豨 **whār* 'badger', Jingpo *mə-gan* 'a species of ground rat', etc. (ST V: 167) ~ Na-Dene: Eyak *gəχ* 'rabbit'; PAtH **gaχ* 'rabbit' > Slave *gah*, Navajo *gàh*, etc.

Laryngeals: The PDC laryngeals result in Basque **h*, **h̥*, or \emptyset . The rules of conditioning are not yet clear.

PDC **ʔ*:

- Basque **aṛ* > (c) *ar* 'male' ~ PEC **ʔirλwV* 'male' > Ingush *ärh* 'ungelt', etc. (NCED 210) ~ Burushaski **hir* 'man, male'
- Basque **e-oan* > (c) *joan* 'to go' (root *-oa-*) ~ PNC **=VʔwV-* 'to go' > Karata *=oʔan-*, etc. (NCED 1016) ~ PST **ʔ^wä* 'to go' > Burmese *s-wah*, etc. (ST V: 11) ~ PY **hejVη* > Kott *hejaη* 'to go, ride', etc. (SSEJ 231)
- Basque **fionda-r̄* > (B, G) *ondar* 'sand', (AN) *ondar* 'bottom', (BN) *hondar* 'bottom', (L) *hondar* 'sand, bottom', (Z) *undar* 'remnant, residue'⁶² ~ PEC **ʔantV* > Tsez *atu* 'dirt, mud', Khinalug *ant* 'earth, ground' (NCED 201)
- PEC **ʔätV* 'branch' > Tindi *hala*, etc. (NCED 242) ~ PST **jāl* 'sprout, branch' > Tibetan *yal-ga* 'branch, bough' (ST IV: 82) ~ PY **ʔul-an* 'twig' > Ket *ulan*, etc. (SSEJ 200) ~ Na-Dene: Eyak *ʔa-t* 'bough, limb, branch (of conifer)'; PAtH **ʔi-t* > Hupa *ʔit* 'pine boughs', Navajo *ʔit* 'evergreen boughs', etc.
- Basque **apal* 'shelf', etc. (see above, under PDC **p*)

PDC **h* / **h̥*:

- Basque **huin* > (Z) *hiin* 'marrow, brain', (L) *huiñ*, *fuiñ* 'marrow, pith', (B) *un* 'marrow, pith', etc. ~ PEC **hwēʔnV* > Akhwakh *hini* 'blood', Avar *han* 'meat', etc. (NCED 496) ~ Burushaski (Y) *huní* 'stone (of fruit)' ~ PST **ʔ^wij* 'blood' > Magari *hyu*, Mikir *vi* (ST V: 12)⁶³
- Basque **haga* > (c) *haga*, *aga* 'long pole, rod' ~ PEC **hāk^wV* > Karata *hak^wa* 'branch', etc. (NCED 485) ~ PY **ʔəqe* 'branch' > Kott *ogé*, etc. (SSEJ 192)

⁶² There may be contamination with *ondo* 'side; residue' and *hondo* 'bottom' (? < Spanish *hondo* < Latin *fundu-*). See **Morphology**, below, for the fossilized ending *-r*.

⁶³ Basque words of the type *mun* 'marrow, brain' are apparently of separate origin (cf. PEC **māhⁿū* 'brain, head' NCED 797). The semantic series 'blood ~ flesh ~ marrow ~ brain ~ kernel' is well documented. Cf., in Dravidian, Malayalam *niṇam* 'coagulated blood', Tamil *nīṇam* 'fat, flesh, serum', and Kannada *neṇa* 'fat, marrow'.

- Basque **hur* > (c) *ur*, (Z) *hur* 'water' ~ PEC **fɪwɪV* > Avar *ɬor* 'river', Lezgi *hüil* 'sea, liquid', etc. (NCED 537) ~ ? Burushaski *hur* 'wooden water conduit, gutter'
- Basque **nahi* > (c) *nahi*, *nai* 'will, willingness, desire, wish' ~ PEC **?nVhV* > Lak *nih* 'fright', Lezgi *neh* 'vicious, sinful', etc. (NCED 216) ~ cf. Na-Dene: PAtH **-ne* 'mind' > Navajo *-ni?* 'mind', *-ní* (in *ʔóó-ní* 'jealousy, grudge', *yí-ní* 'worry, lonesomeness'), etc.
- Basque **hař* > (c) *har*, *ar*, (R) *ār* 'worm' ~ ? PEC **fiabarV* 'worm' > Avar *ħapára*, etc. (NCED 508) ~ Burushaski (H, N) *har* 'Kornwurm'
- PEC **fiwām̄gV* > Tindi *hing^war* 'window', Kryz *ɬag* 'niche in wall, roof orifice', etc. (NCED 535) ~ Burushaski **hiŋ* 'door, gate', *hiŋ-baltar* 'entrance to a village (serves as gathering place)'
- PNC **h[ā]ʔa* > Andi *hal* 'steam', Udi *el-mux* 'soul, spirit', etc. (NCED 485) ~ PST **lā* 'spirit' > Tibetan *lha* 'the gods', etc. (ST III: 2) ~ Na-Dene: Haida (S, M) *χoaʔ* 'steam'
- Basque **habe* 'pillar, beam', etc. (see above, under PDC **b*)
- Basque **haic* 'rock, stone', etc. (see above, under PDC **c*)
- Basque **hauso* 'neighbor', etc. (see above, under PDC **č*)

Fricatives: Proto-Dene-Caucasian probably had several fricatives corresponding to most of the positions of the occlusives: **s*, **š*, **ʒ*, **x*, **χ*. There are some indications that these fricatives may have had voiced allophones. (Cf. the conditions in Proto-Athabaskan, *e. g.* [KRAUSS & LEER 1981].) For some examples of reflexes:

PDC **s* / **z*: Generally, PDC **s* > Basque **s* (lamino-alveolar):

- Basque **sain* > (c) *zain*, *zaiñ*, (Z) *zañ* [šãñ] 'nerve, blood vessel, root' ~ PEC **sēhmV* > Chamalal *s:ē* 'sinew, muscle', Chechen *sam-g* 'sausage', Dargwa *ɬems* 'muscle', etc. (NCED 959) ~ PST **(r-)sā* > Old Chinese 絲 **sə* 'silk, thread', Jingpo *lə-sa* 'tendon, sinew', etc. (ST IV: 96)⁶⁴
- Basque **bi-si* > (c) *bizi* 'life, alive'⁶⁵ ~ Lak *s:iħ* 'breath, vapor', Chechen *sa* 'soul', etc. < PNC **sīHwV* (NCED 961) ~ PST **sij(H)* > Old Chinese 死 **sij?* 'to die; death', etc. (ST IV: 102) ~ Na-Dene: Tlingit *sa*, *sen* 'to breathe, blow'; Eyak *sih* 'to die'⁶⁶

⁶⁴ See the note to Burushaski **-so[m]* 'kidney', etc., below.

⁶⁵ An instance of the fossilized prefix *bi-/be-* (see under comparative **morphology**).

⁶⁶ «The semantic developments 'to breathe' > 'get tired' ... > 'die' are quite usual.» (NCED 961). Cf. Russian *душа* [*dušá*] 'mind, soul, spirit' : *душумь* [*dušít*] 'to smother'.

- Basque **se-* > (c) *zer* 'what?', *zein* 'which?', etc. ~ PNC **šāj* > Ingush *se* 'what?', Ubykh *sa* 'what?', etc. (NCED 958) ~ Burushaski **-sa-* / **-se-* > bé-*sa-n* 'what, which?', bé-*se* 'why?' ~ PST **su* 'who?' (ST IV: 108); Lepcha *sā-re* 'which, what?', *sā-ba* 'where?', etc. ~ PY **?as-* / **sV-* (interrogative stem) > Ket *ásés* 'what?', etc. (SSEJ 182) ~ Na-Dene: Haida *gú-su* 'what?', *us* (yes-or-no question marker); Tlingit *dà-sa* 'what?', *sa* (interrogative particle), etc.
- PEC **šīnǝ* > Lak *s:an* 'foreleg, paw, pad', Udi *sun* 'elbow', etc. (NCED 963) ~ Burushaski (H, N) *-súsun*, (Y) *-sésen* 'elbow' ~ PST **sēn* > Tibetan *sen* 'fingernail, toenail', etc. (ST IV: 99)
- Burushaski **así[m]* > (Y) *asúmun* 'star', (H) *asíi* 'star', *asíimuc* 'stars' ~ PST **sēŋ* 'star' > Old Chinese 星 **sēŋ*, Hruso *li-tsoŋ* 'star', etc. ~ Na-Dene: PAth **səŋ?* 'star' > Ahtna *son?*, Carrier *səm*, Navajo *sô?*, etc. ([BENGTSON 1994: 219, 226])
- Burushaski **-so[m]* 'kidney' > (H, N) *-so* (pl. *-somuc*) ~ PST **siam* > Old Chinese 心 **səm* 'heart', Lepcha *a-sóm* 'spirit, breath', Tibetan *sem(s)* 'soul', *sem(s)* 'to think', etc. (ST IV: 100) ~ Na-Dene: Haida *-sij* 'to wish'; PAth **zín* 'to think, feel' > Sarsi *-zìin*, Galice *-san*, Mattole *-siin*, *-siin?*, *-siil*, Navajo *-zìn*, etc. ([BENGTSON 1994: 221])⁶⁷

PDC **š* / **ž*: Generally, PDC **š* > Basque **ś* (apico-alveolar):

- Basque **śíc* > (B, G) *sits* 'moth' ~ PEC **šwěžV* 'a kind of biting insect' > Lak *suč* 'tick', Rutul *šwät* 'midge, mosquito' etc. (NCED 988)
- Basque **e-Sne* > Basque (B, BN, G, R, Z) *ezne*, (B, BN, G, L) *esne* 'milk' ~ PEC **šām?V* > Tindi *š:ū* 'milk', Chechen *šin* 'udder', etc. (NCED 982) ~ Burushaski *šij* 'milk, proceeds of milk'⁶⁸
- Basque **soři* > (c) *zorri* 'louse'⁶⁹ ~ PEC **šārī* 'worm' > Lezgi *šar*, etc. (NCED 982) ~ Burushaski **širi* 'locust' ~ PST **śar* 'louse' > Rgyarung *sar*, etc. (ST IV: 115)
- Basque **-śa-* / **-śo* (elements denoting kinship, as in *o-sa-ba* 'uncle', *gura-so* 'parent', *alaba-so* 'granddaughter', etc PNC **-šwĚ* > Andi *w-ošo* 'son', *j-oši* 'daughter', etc. (NCED 671) ~ Burushaski (Y) *-is* 'young (of animals); child (of humans)', (H, N) *-s-k(o)* 'young (of animals); (jokingly) human child' ~ Na-Dene: Eyak *yahš* '(woman's) child'; PAth

⁶⁷ S. A. STAROSTIN prefers to merge this etymology with Basque **sain*, etc. (see above).

⁶⁸ With secondary retroflex [š] conditioned by following velar nasal.

⁶⁹ Basque **ś* is expected here. Affective palatalization, or depalatalization, has probably been at play.

*-*ya*ž^wə 'little; (woman's) child' > Navajo -*yáží* 'child, little one', -*yááž* 'baby', *yááš* 'little one'

- Basque **bešo* > (c) *beso* 'arm' ~ Chechen *biši* 'hand (of a child)', Tsez *baša* 'finger' < PEC **wűšV* (or **bűšV*) (NCED 315)
- Basque **puS-* 'bubble', etc. (see above, under PDC **p*)
- Basque **goše* 'hunger, hungry', etc. (see above, under PDC **g*)

PDC **ɬ*: Basque **-lh-* between vowels (preserved only in northern Bsq); **l-* initially.

- Basque **i-lhinti* > (c) *ilindi*, (Z) *ilhinti* 'firebrand, ember' ~ PEC **λwɪndV* > Andi *ɬudi* 'firewood', etc. (NCED 764) ~ Na-Dene: Eyak *ɬid* ~ *ɬad* 'dead wood, dry wood'; Chipewyan -*ɬir*, -*ɬàr*, -*ɬir*, -*ɬiy* 'to dry (leaves, bark, grass, etc. in the sun or by fire)'⁷⁰
- Basque **e-lhu-r̄* > (BN, L) *elhur*, (Z) *élhür*, (AN, G, R) *elur*, (B) *erur*, (B) *edur* 'snow'⁷¹ ~ PEC **λiwV* 'snow' > Chechen *lō*, etc. (NCED 684) ~ Na-Dene: PAtH **ɬu* > Kato *loo* 'frost', Navajo *ń-ló* 'hail'; Eyak *ɬa* 'glacier'
- Basque **VlhV* > (c) *olo*, (Z) *olho* [ólho] 'oats'; cf. (BN, Z) *olha*, (Z) *alho*, (B) *alo* 'wild oats' ~ Cauc: PNC **λwřwV* 'millet' > Rutul *xiw* 'bread', Lak *š^wa* 'mown crops', etc. (NCED 763)
- Basque **lance-r̄* (BN, Z) *lantzer* 'drizzle, fine and minute rain' ~ PEC **λǎ[m]çV* 'to sift, filter' > Chechen *litt* 'to filter', Bezhta *ɬacari* 'sieve', etc. (NCED 758)
- Basque **lirde* > (AN, B) *lerde*, (G) *lirdi*, *lerde* 'drivel, saliva' ~ PEC **λwirdi* > Agul *furd* 'manure', Avar *x^werd* 'pus', etc. (NCED 763) ~ Burushaski *γit* 'slime' ~ PST **Iřt* > Tibetan *lud* 'phlegm, mucus; manure, dung', etc. (ST III: 51) ~ Na-Dene: PAtH **ɬu* > Kutchin *ɬid* 'scar', Navajo *ɬóód* 'sore', etc.⁷²
- Basque **luse* > (c) *luze* 'long (time or things)' ~ Burushaski **γusán-um* 'long, far, tall' ~ PST **lu* 'long, far' > Old Chinese 悠 **lhu* 'far away', Burmese *lu* 'disproportionately tall', etc. (ST III: 144; **lu* < **luh* < **lus*)

⁷⁰ These words are all associated with fire making and its attendant materials. Cf. the note by TRASK ([1995: 41]).

⁷¹ Basque -*r* is a relic of the DC plural ending (see below).

⁷² This and the next two etymologies confirm the unusual development of PDC **ɬ* > Burushaski *γ* = [ɣ] (voiced uvular fricative). For typology, cf. Old Armenian *uuunη* [*ast^hɬ*] > (present day) [*ast^hɣ*] 'star', etc.

PDC *x / *ɣ: > Basque *h, *g:

- Basque *ar-han > (c) *aran*, (BN, Z) *arhan* 'plum, sloe' ~ Avar *géni* 'pear', Hunzib *hī*, etc. < PEC *ɣōnʔV 'pear' (NCED 475) ~ Burushaski *ɣáin* 'grapes' ~ Tibetan *r-gun* 'vine, grape', etc. (ST V: 153)
- Basque *heño > (c) *erro*, (Z) *herro* 'root (of tree, plant, tooth)', also (B, G, AN, L) 'teat (of udder)' ~ Avar *rix* 'vein, blood vessel', Lak *x:ʷa* 'sinew, tendon, string', etc. < PNC *xwiʔrV (NCED 1064)
- Basque *belha-r̄ > (BN, L, Z) *belhar* '(first mowing of) hay', (AN, G, L) *belar* 'grass, hay', (B, G) *berar*, (B) *bedar* 'grass, hay' ~ Lezgi *werg* 'nettle', Archi *urki* 'burdock', etc. < PEC *uelyV (NCED 1013)
- Basque *eṛgi > (c) *ergi* 'steer, young ox, bull calf' ~ Avar *rexé-d* 'cattle, herd', Chechen *dāχni* 'cattle', Abkhaz *á-raχʷ* 'cattle', etc. < PNC *rVxwV 'cattle' (NCED 956)
- Basque *u-hin > (L) *uhin* 'wave' ~ PEC *xǎnfiñ 'water' > Chechen *χi*, Andi *ʔ:en*, Tsakhur *xan*, etc. (NCED 1060) ~ Na-Dene: Haida (A) *ǎnǎ* 'water, river', (S) *ganλ* 'fresh water'; Tlingit *hín* 'water, river'; Eyak *χā* 'to melt'; PAth *-ɣe:n > Navajo *γíih*, *γíiʔ*, *γíh* 'melt (snow, ice)', etc.
- PEC *xwōlhV > Lak *xu* 'bosom, cut (of dress), collar', Rutul *xili* 'armpit', etc. (NCED 1065) ~ Burushaski *hál-mun 'ribs' > (Y) *-hálmun*, (H, N) *-yaálmun* ~ Na-Dene: Haida (S) *χil*, (A) *híl* 'neck'; PAth *-ɣʷu:l 'windpipe, trachea' > Hupa *-wol*, Chipewyan *-ɣùl*, etc.
- Basque *i-hinc 'dew', etc. (see above, under PDC *c)

PDC *x / *ɣ: > Basque *h, *g (same reflexes as for PDC *x / *ɣ):

- Basque *a-ho > (BN, L, Z) *aho*, (AN, B, G, R) *ago*, *ao*, (B) *abo* 'mouth' ~ PNC *xwi- in *xwim(V)pV 'mouthful' > Khinalug *χob*, etc. (NCED 1082) ~ PST *khʷə(H) > Old Chinese 𠂔 *khōʔ 'mouth' (ST V: 107) ~ PY *χowe 'mouth' > Yug *xo*, etc. (SSEJ 302) ~ Na-Dene: *χUʔ 'tooth' > Tlingit *ʔúχ*, Eyak *χu-ʔ*, Navajo *-γòòʔ* 'tooth'
- Basque *hari, hal- 'thread' > (c) *hari*, *hal*, (*ari*, *al-*)⁷³ ~ PEC *χātV > Tsez *χe-ro* 'sinew', Chechen *χal* 'thread', etc. (NCED 1067) ~ Na-Dene: Eyak *χeht* 'rope, cord, twine, string; to tie'
- Basque *o-he > (BN, L, Z) *ohe*, (BN-Aldude, Baigorri) *ofe*, (B, G, L) *oge*, etc. 'bed' ~ Tabasaran *aχin* 'bed' (cf. *aχ-* 'to sleep'), Agul *aχun* 'mattress' (cf. *aχa-* 'to sleep'), etc. < PNC *=aχVr 'to fall, lie' (NCED 273)

⁷³ This is one of several Basque words that have *-r-* in free form, but *-l-* in combinatory form as first element in a compound ([TRASK 1997: 188ff.]). The latter form (*hal-*) reflects the earlier stage, as attested in Caucasian and Na-Dene.

- Basque **(H)oři* 'leaf' > (B) *orri* 'leaf (of a tree)', (G) *orri* 'leaf (of maize, cabbage, lettuce)' ~ Avar *χ:oró* 'tops (of plants)', Agul *χar* 'meadow', etc. < PEC **χērǎ* (NCED 1070)
- Cauc: Botlikh *γadaru* 'stream, brook', Lak *qtara* 'mountain stream', etc. < PEC **bHwadVrV* (NCED 478) ~ Burushaski (Y) *γónderes*, *γondoles* 'Wasser, das über viele Steine fließt'
- Basque **e-sagu-* 'to know', etc. (see above, under PDC **č*)
- Basque **harc* 'bear', etc. (see above, under PDC **č*)

Resonants: Proto-Dene-Caucasian also had resonants and glides, e. g. **m*, **n*, **r*, **l*, **w*, **j*. Some examples of reflexes are as follows:

PDC **m*:

- Basque **muga* > (c) *muga* 'border, limit, frontier' ~ Chechen *moya* 'line, row', Avar *muq*: 'line', etc. < PEC **mörqwǎ* (NCED 831)
- Basque **mihí* > (BN, L, Z) *mihí*, (G) *mii*, (B) *min* 'tongue' ~ Tindi *mic:i* 'tongue', Andi *miç:i*, Tabasaran *melz*, Ubykh *bža*, etc. < PNC **mēlčǐ* 'tongue' (NCED 802)
- Basque **miko* > (BN, L) *miko* 'a little, a little bit' ~ Chamalal *miku-b* 'small', Rutul *muk-di* 'young', etc. < PEC **miḳwV* (NCED 821)
- Basque **muin* > (G) *muin*, *muĩñ*, (L) *muin* 'marrow, sap', BN *muin* 'marrow, brain', etc. ~ Akhwakh *mina* 'head', Udi *mḡ* 'brain, marrow', etc. < PEC **mǎhnū* 'brain, head' (NCED 797) ~ PST **nūH* / **nūk* 'brain' > Old Chinese 腦 **nū?*, Burmese *uh-hnauk*, etc. (STII: 45) ~ PY **dɔʔŋ* 'brain' > Ket *dɔʔŋ*, Kott *-nan* (SSEJ 223).
- PEC **wimqV* '(eye-)witness' > Chechen *baq* 'true', Dargwa *biq-ri* 'witness' (NCED 1050) ~ PST **mjǎk* 'eye' > Old Chinese 目 **muk*, Tibetan *mig*, Mo-shang *mak*, etc. (ST I: 31) ~ Na-Dene: Tlingit *wàc* (*wàq*) 'eye'; PAtH **-n(ə)-we-g-* > Ingalik *-mag*; Navajo *-náá?* 'eye', etc. ([BENGTON 1994: 216])
- PNC **mfiǎčǐ* 'edge' > Lak *miç* 'tip, point', etc. (NCED 813) ~ Burushaski *muś* 'end, side, border' ~ PST **māt* > Old Chinese 末 **māt* 'end, tip' (ST I: 15) ~ Na-Dene: PAtH **wəs* 'riverbank' > Hupa *mis*, Navajo *bis*, etc.
- PNC **mHōK(V)čV* 'flint' > Chechen *mōqaz*, Lak *nuwča*, etc. (NCED 818) ~ Na-Dene: Tlingit *wé-gš* 'knife'; Eyak *wé-gš-g*; PAtH **we-š^(w)* 'knife' > Tainaina *váš*, Navajo *bééš*, etc. (KL 106)⁷⁴
- PST **mǎH* (**mǎk*) 'war, army' > Tibetan *d-mag* 'army, host, war', Burmese *mak* 'soldier, war', etc. (ST I: 16) ~ Na-Dene: PAtH **-wà-g* >

⁷⁴ Because the Dene-Caucasian proto-language dates to the Paleolithic, 'knife' here must originally have denoted a stone knife rather than metal knife.

Ingalik *nə-vaχ* 'war', *-maχ* 'to struggle, wrestle', Mattole *-bah, -bay* 'to go to war', Navajo *-bààγ* 'war', etc. ([BENGTSON 1994: 223])

- Basque **sama-* 'fleece', etc. (see above, under PDC *c)
- Basque **čehume* 'demi-empan', etc. (see above, under PDC *č)
- Basque **limuri* 'slippery', etc. (see above, under PDC *λ)
- Basque **suma-* 'elm', etc. (see above, under PDC *ž)
- Basque **muku-ř* 'trunk', etc. (see above, under PDC *q)

PDC *n:

- Basque **negu* > (c) *negu* 'winter' ~ PNC **bwin?V = *γwin?V* > Chechen *ŋa / ŋāna-* 'winter', Lak *γ^{wi}- / γin-* 'summer', etc. (NCED 482) ~ PST **G(h)ün* > Tibetan *d-gun* 'winter', etc. (ST V: 34) ~ cf. Na-Dene: Haida *qín-at* 'summer', *qín-λel* 'spring'
- Basque **niga-* > (B) *negar* 'tears, rennet', (Z) *nigar* 'tears', (AN, L) *negal* 'skin rash', etc. ~ Dargwa *nerγ* 'tear', Chechen *not'qa* 'pus', etc. < PEC **něwqū* (NCED 848) ~ Burushaski (H) *nagéi*, (N) *magéi* 'boil, ulcer' ~ PST **nōk / *nōη* 'pus' > Tibetan *r-nag* ~ *s-nag*, etc. (ST II: 40) ~ PY **dɔkŋ* 'pus' > Ket *dɔʔŋ*, Kott *takŋ* (SSEJ 223)
- PEC **nHēmdV* > Andi *nidu* 'eyebrow, eyelash', Lak *nint:a-bak* 'forehead', etc. (NCED 853) ~ Na-Dene: PAth **-ne'n?* 'face' > Ahtna *-ne'n?*, Hupa *-nən?*, etc.
- Basque **nahi* 'will, willingness, desire', etc. (see above, under PDC *h)
- Basque **i-tain* 'tick', etc. (see above, under PDC *t)

PDC *r: Generally, PDC *r > Basque *ř (orthographic rr):

- Basque **e-řeka* > (c) *erreka* 'ravine, rivulet, arroyo' ~ Tindi *re:k:a* 'gorge, ravine', etc. < PNC **riřwǎ* (NCED 953) ~ ? PY **ři(?)K-* or **li(?)K-* 'mountain' > Kott *řix* 'mountain', *khē-lēg* 'mountain ridge'⁷⁵
- Basque **heři* > (c) *herri, erri* 'country, town, inhabited place, people' ~ PNC **řwǎhri* > Lak *gra-l* 'army, troops', Abaza *rə* 'army, troops', Hurrian *χūr-adə* 'warrior', etc. (NCED 249) ~ cf. ST: PST **rāH* > Old Chinese 虜 **r(h)ā?* 'captive', Tibetan *dgra* (d-g-*ra*) 'enemy, foe', etc. (ST II: 52) ~ PY **har-* > Kott *ari n-git* 'slave', Assan *xáran-get* 'servant', Arin *ar, ara* 'Arin (ethnonym)', etc. (SSEJ 230)
- Basque **haři* > (c) *harri, arri* 'stone, rock' ~ PEC **χHěřχV* 'small stone, gravel' > Akhwakh *χaχi* 'road metal', Lezgi *χirχem* 'road gravel', etc. (NCED 1073)
- Basque **e-řbi* > (c) *erbi* 'hare', (B) *erbi-ñude* 'weasel' (**g^{wi} > bi*) ~ PNC **riřwǎ* 'weasel, mouse' > Tindi *re.ř:u* 'weasel', etc. (NCED 951) ~ PST [**ruak*] 'rat' > Burmese *k-rwak*, etc. (ST II: 100)

⁷⁵ See the discussion in S. A. STAROSTIN's comparative Yeniseian available online at <http://starling.rinet.ru>.

- Tsez *riṭ* 'butter', Avar *rax* 'milk', etc. < PNC **rḥǎλwǎ* (NCED 949) ~ Burushaski **diltar* 'buttermilk' ~ PST **rjǎk* 'thick fluid, liquid grease' > Lushai *sa-hriak* 'oil, grease', etc. (ST II: 87)
- PNC **fɾeλwě* 'bone' > Hunzib *λora*, Agul *irk*;, etc. (NCED 528) ~ PST **rāk* / **rāŋ* 'bone' > Burmese *khraŋ*, etc. (ST II:60) ~ Yeniseian: PY **ʔuλ-a3* 'rib' > Ket *uλet* 'rib', etc. (SSEJ 200) ~ Na-Dene: Eyak *de-ṭ* 'spine, backbone, spinal column'
- PST **rěk* 'pheasant' > Tibetan *s-reg-pa* 'pheasant, partridge', etc. (ST II: 65) ~ Na-Dene: PAtH **dax* 'grouse, spruce hen' > Ahtna *dex*, Navajo *dih*, etc. ([BENGTON 1994: 219])
- Basque **adaṛ* 'horn', etc. (see above, under PDC **λ*)
- Basque **e-guṛ* 'firewood', etc. (see above, under PDC **g*)
- Basque **agoṛ*, **egaṛi* 'dry, thirst', etc. (see above, under PDC **G*)
- Basque **gogoṛ* 'hard', etc. (see above, under PDC **G*)
- Basque **haṛ* 'worm', etc. (see above, under PDC **h*)

PDC **l ~ ṭ*:

- Basque **leka* 'bean pod, husk' ~ Chechen *lag* 'fruit-stone' Khinalug *li* / *liki* 'grain', etc. < PNC **lēkV* (NCED 744)
- Basque **lami-* > (AN, BN, R) *lamika-tu*, (BN) *lamizka-tu* 'to lick' ~ Andi *lam-* 'to lick', Dargwa (Akushi) *limçi-k'es* 'to lick', etc. < PEC **tamV* (NCED 754) ~ PST [**lem*] 'tongue' > Bahing *liam*, Kanauri *lem* 'lick', etc. (ST III: 16)
- Basque **e-uli* 'fly' (insect) > (c) *euli*, (AN, BN, L) *uli*, (G) *elbi*, (R) *éllu*, (Z) *ülü*, etc. ~ ? Cauc: Archi *hiliku*, *hilku* 'fly', *nisin-hiliku* 'bug' ~ Burushaski **haúlal-* > (Y) *haúlal* 'butterfly, moth', (H, N) *hoólas* id.
- Basque **elhe* > (c) *elhe*, *ele* 'word, conversation, story' ~ PEC **lēHwV* > Inkhokwari *loje* 'word, sound, voice', Dargwa *luṣi* 'number' (NCED 744) ~ PST **lō* 'sing' > Old Chinese 謠 **law* 'sing, song', etc. (ST III: 30) ~ Na-Dene: PAtH **-li* 'to sing' > Kato *le?*, etc.
- Basque **siülhio* > (c) *zulo* 'hole, cave', *sudur-zulo* 'nostril', *ipurt-zulo* 'anus', (G) *musu-zulo* 'nostril', (L) *zulho*, (Z) *xilo* [šilo] 'hole', etc. ~ PEC **šwōṭV* > Avar *šulu* 'pipe', Bezhta *šelo* 'horn' (< **tube*), etc. (NCED 978) ~ Burushaski **šúli* > (H, N) *šúli* 'tube, spout, gun barrel'
- Karata *žale* 'mane', Lak *zulū* 'nap, pile', etc. < PEC **žǎthi* (NCED 1101) ~ Burushaski **žal-* / **zal-* > (H, N) *jaláalimiŋ* 'long hair (of people)', *jaléi*, *jalii* 'beard (of goat)'; (Y) *jalás* 'hairy, hirsute' (*j* = [ʒ], *j* = retroflex affricate)
- Lezgi *leq* 'eagle', etc. < PNC **lHiq̄wǎ* (NCED 748) ~ PST **lǎk* / **lǎŋ* > Tibetan *g-lag* 'eagle, vulture', etc. (ST III: 8) ~ PY **dV?G* 'eagle' > Ket *dī?*,

etc. (SSEJ 225) ~ Na-Dene: Haida *t̥go*, *t̥gu* 'heron', Tlingit *laq*, *laχ* 'heron, crane', etc. ([BENGTSON 1994: 219])

- PEC **t̥ʷni* > Chechen *neɬ* 'skin', Agul *leʔ* 'skin', etc. (NCED 755) ~ PST [**s-ljun*] > Chepang *hlyun* 'to undress, peel', *hlyu* 'to skin', Tibetan *šunpa* 'bark, rind, peel, skin' ~ Na-Dene: Tlingit *l̥un* 'bark'; Eyak *t̥āh* 'bark'
- PST **lāt* 'tongue' > Old Chinese 舌 **lat*, Magari *let*, etc. (ST III: 7) ~ Na-Dene: Tlingit *lut* 'tongue'; Eyak *laʔt* ([BENGTSON 1994: 216])
- Basque **selai* 'field, meadow', etc. (see above, under PDC *3)
- Basque (c) **gal-* 'to lose', etc. (see above, under PDC *g)
- PEC **ʔatV* 'branch', etc. (see above, under PDC *ʔ)

PDC **l* ~(**t̥*) > Basque **-r-* (between vowels, often with a stem variant ending in **-l*)

- Basque **a-bere* 'domestic animal' / (combinatory form **abel-*) ~ Udi *bele* 'cattle', Chechen *bula* 'aurochs', etc. < PNC **būtV* (= NCED 314)
- Basque **a-seyari* / **a-seyal-* > (c) *azeri* 'fox' / (combinatory form *azel-*) ~ Tindi *sari*, Archi *s:ol* 'fox', etc. < PNC **cEhwōlē* ~ (NCED 324) Burushaski **hal* 'fox'
- Basque **erdara* 'foreign (language)' / (combinatory form **erdal-*), as in *erdal-dun* 'non-Basque-speaker, foreigner' ~ Khwarshi *ʕar* 'guest', Chechen *lūla-χō* 'neighbor', etc. < PEC **lōlV* (= NCED 790) ~ PST **r̥t̥* > Old Chinese 鄰 **rən* 'neighbor', Burmese *rwij* 'friend'⁷⁶
- Basque **gari* 'wheat' / (combinatory form **gal-*) ~ Cauc: Tindi *q:eru*, Rutul *γil*, Archi *qoqol*, etc. 'wheat' < PEC **gōlʔe* (NCED 462)
- Basque **ugari* / **ugal-* > (AN, B, G) *ugari* 'abundant' / (B, G) *ugal-du* 'to increase, multiply' ~ Dargwa (Akushi) *χala-l* 'big', Tindi *=ex:ala-b* 'long', etc. < PNC **HāχutV* / **HālχV* (NCED 550)
- Basque **sare* / **s̥ale* 'net, grill', etc. (see above, under PDC *c)
- Basque **čori* / **čol-* 'bird' (see above, under PDC *č)
- Basque **kerać* 'bitter', etc. (see above, under PDC *q)
- Basque **hari* / **hal-* 'thread', etc. (see above, under PDC *χ)

PDC **w*:

- Basque **behe* > (c) *behe* 'floor, ground, lower part, bottom', *behean* 'below, down, under(neath)', etc. ~ Tindi *bex:i* 'bottom, buttock', Godoberi *ladi-baχ:u* 'lower part, below', etc. < PNC **w=əχA* (NCED 423)⁷⁷

⁷⁶ See S. A. STAROSTIN'S comparative databases (Sino-Tibetan and Sino-Caucasian) available online at <http://starling.rinet.ru>.

⁷⁷ A Caucasian root with changing class prefixes. Karata *rex:i* 'lower part, below' has the prefix **r-* rather than **w-*, as in Tindi and Godoberi.

- Basque **bahe* > (BN, L, Z) *bahe*, (B, G, R) *bae* 'sieve' ~ Tsakhur *wex:wa* 'sieve', Kabardian *wə-x^wa-nšə-n* 'to sift', etc. < PNC **w-if* (NCED 630)
- Basque **be-/bi-* fossilized class prefix, as in (c) *be-hatz* 'thumb, toe', *be-larri* 'ear', *bi-zi* 'life', etc.⁷⁸ ~ PNC **w-* (marker of II-class singular): cf. e. g. Tindi *b-eχ:u* 'stomach', *b-aχ:i* 'in the middle'; WC fossilized *b-* or *p-*: Ubykh *b-ḥa* 'eye', *p-ča* 'guest', etc. ~ cf. ST: Garo *bi-bik* 'bowels', *bi-bal* 'flower', *bi-mik* 'sprout', *bi-tši* 'egg', etc.; Tibetan *b-žin* 'face' ~ cf. Na-Dene: PAtH **w-* (3rd person singular)
- Basque **uṛde* > (c) *urde* 'pig' (**bu-* > *u-*) ~ PNC **wHār.χwə* > Tsez *beχo*, Lezgi *wak* 'boar, pig', etc. (NCED 1047) ~ PST **wāk* 'pig' > Burmese *wak*, Lushai *vok*, etc. (ST I: 121)
- PST **wat* > Burmese *a-wat* 'clothes', *wat* 'to wear', Gyarung *te-wyet* 'clothes', Rawang *nun-wat* 'to cover breasts with breast-cloth' ~ Na-Dene: PAtH **wa-t* > Kutchin *vit*, *vid-i* 'sleeve', Chipewyan *-bár* 'sleeve', Carrier *bad* 'mittens' ([BENGTON 1994: 223])
- Basque **bašo* 'woods', etc. (see above, under PDC **c*)
- Basque **bešo* 'arm' (see above, under PDC **š*)
- Basque **belhaṛ* 'hay', etc. (see above, under PDC **x / *γ*)
- PEC **wimqV* '(eye-)witness', etc. (see above, under PDC **m*)

PDC **j*:

- Burushaski **jón* 'all, altogether' ~ PST **jü* 'all, everything' > Tibetan *yo-ba* 'everything, altogether', etc. (ST IV: 87) ~ PY 'many' > N. Ket *ɔʔn*, Yug *ɔ:ḥn*, etc. (SSEJ 198) ~ Na-Dene: **ya-* 'all' > Tlingit *yá-χ* 'entirely, severally, all'; Mattole *ya-*, *ya-* 'all', etc.; cf. Haida *yú:ʔan* 'big'
- PNC **jVcwĚ* 'mouse' > Dargwa *waca* 'mouse', Abkhaz *á-ješ* 'squirrel' (NCED 685) ~ PST **jü* > Tibetan *yos* 'hare' (astronomical), Kanauri *p-yu* 'rat', etc. (ST IV: 87) ~ PY **jūta* 'mouse' > Ket *ut*, Assan *juda*, etc. (SSEJ 233)
- PNC **čǎj̄* 'fire', etc. (see above, under PDC **č*)

Dene-Caucasian Vowels

The original vowel system of Dene-Caucasian has been studied much less than the consonants. The following observations pertain to the correspondences between Basque vowels and the Caucasian (PNC/PEC) vowels postulated by NIKOLAYEV and STAROSTIN ([1994]).

Basque /a/ regularly corresponds to Caucasian **a* (**ǎ*, **ā*):

⁷⁸ See the **Morphology** section, below, for further details.

Basque (*h*)*a*- (article, demonstrative) ~ PEC **hǎ* (emphatic demonstrative stem: NCED 436)

Basque *sare* ~ *sale* 'net, grate; stockade' ~ Avar *čalí* 'fence' < PEC **čhatē* (NCED 343)

Basque *hatz* 'finger, paw' ~ Avar *k^wač* 'paw', etc. < PNC **kwǎnVčē* (NCED 704)

Basque *izar* (*i-zar*) 'star', etc. ~ Tindi *c:aru* 'star', etc. < PNC **zǝwǎhrī* (NCED 1098)

Basque *sabel* 'belly, stomach' ~ PNC **žǝbV* 'kidney, liver' (NCED 1106)

Basque *lasto* 'straw' ~ PEC **łacǎ* 'leaf; a kind of plant' (NCED 773)

Basque *sagu* 'mouse' ~ PNC **cārgwǝ* 'weasel, marten' ('mouse' in Circassian: NCED 322)

Basque *hari*, *hal*- 'thread' ~ PEC **χātV* 'sinew, thread' (NCED 1067)

Basque (R) *atze* 'tree' ~ PNC **Hǎ(r)žwī* 'tree' (NCED 549)

Basque *har*, (R) *ār* 'worm' ~ PEC **fīabarV* 'worm' (NCED 508)

Basque *haga* 'long pole' ~ PEC **hǎkwV* > Karata *haḵ^wa* 'branch', etc. (NCED 485)

In several cases Basque /a/ corresponds to Caucasian **e*, in the environment of a liquid or lateral affricate:

Basque *belarri* (*be-larri*) 'ear' ~ PNC **tēHte* 'ear' (NCED 756)

Basque *k(h)arats* 'bitter' ~ PNC **qēfilV* 'bitter' (NCED 912)

Basque *zahar* 'old' ~ PNC **swērho* 'old, year' (NCED 968)

Basque *harri* 'stone' ~ PEC **χHērχV* 'small stone, gravel' (NCED 1073)

Basque *larri* 'sadness, anguish' ~ PNC **łwērV* 'hard, severe, stern' (NCED 792)

Basque (Z) *lape* 'shelter under the eaves of a shed' ~ PEC **łēpV* 'stone plate or shed' (NCED 777)

Basque *laiño* ~ *lanbro* 'fog, mist' ~ PEC **rēnłwV* 'cloud, fog' (NCED 947)

Basque (AN) *barda* 'belly, paunch' ~ PEC **bfiērłV* 'large intestine' (NCED 297)

Basque *hardo* 'tinder (made from fungus)' ~ PEC **łwēłV* 'a kind of grass' (NCED 230)

Basque /e/ corresponds to Caucasian **e* and **ə*:

Basque *bek(h)o* 'forehead, beak' ~ PEC **bēkwō* 'part of face, mouth' (NCED 289)

Basque *erdi* 'half, middle' ~ PNC **-ēłĒ* 'half, middle' (NCED 412)

Basque *negar* ~ *nigar* 'tear' ~ Dargwa *nerγ* 'tear', etc. < PEC **nēwqǝ* (NCED 848)

Basque *gose* 'hunger, hungry' ~ PNC **gašē* 'hunger' (NCED 431)

- Basque *habe* 'pillar, beam' ~ PEC **hwēbē* 'post, pole, tower' (NCED 497)
 Basque *sare* ~ *sale* 'net, grate; stockade' ~ PEC **čhatē* 'enclosure, fence' (NCED 343)
 Basque *zelai* 'plain' ~ PEC **zəlV* 'plain, plateau' (NCED 1092)
 Basque (archaic Bizkaian) *ze* 'not' ~ PEC **zə* 'not' (NCED 1101)
 Basque *lema* 'rudder' ~ PEC **λəm?V* 'roof' (NCED 777)
 Basque *herri* 'inhabited place, people' ~ PNC **ʔwəhri* 'people, troop' (NCED 249)
 Basque *hegi* 'ridge' ~ PEC **hwərqē* 'mountain ridge' (NCED 536)

Basque /i/ corresponds to Caucasian *i and *i:

- Basque *hil* 'dead; die; kill' ~ PNC **-iwλĚ* 'die; kill' (NCED 661)
 Basque *ipini* ~ *imiñi* 'to put' ~ PEC **?ima(n)* 'to stay, be' (NCED 210)
 Basque *izeba* (*ize-ba*) 'aunt' ~ PEC **-ilčwī* 'girl, woman' > Chechen *d-ēca* 'paternal aunt' (NCED 952)
 Basque *zikiro* 'castrated goat' ~ PNC **zīkV* 'goat, kid' (NCED 1094)
 Basque (BN, L) *miko* 'little (bit)' ~ PEC **miķwV* 'small, young one' (NCED 821)
 Basque *tximitxa* [čimiča] 'bedbug' ~ PEC **čimVčV* 'butterfly' (NCED 379)
 Basque *hiri* 'village, city' ~ PNC **kitū* 'farmstead, hut' (NCED 692)
 Basque *ilindi* ~ *illinti* 'firebrand' ~ PEC **λwindV* 'firewood' (NCED 764)
 Basque *lirdi* (~ *lerde*) 'drivel, saliva' ~ PEC **λwirdi* 'manure, pus' (NCED 763)
 Basque *ihintz* (< **i-xinc*) 'dew' ~ PEC **xwimčwī* 'dirt, bog' (NCED 1065)
 Basque *ahizpa* (*a-hiz-pa*) 'sister (of a woman)' ~ PNC **-ičī* 'sister, brother' (NCED 669)
 Basque (*h*)*osin* 'deep place in a river' ~ PEC **?wincV* < **wičinV* 'well, spring' (NCED 232)

Basque /o/, the least frequent vowel, corresponds to Caucasian *o, also to Caucasian *e, *ə, and *i (in labial environments)⁷⁹:

- Basque *oso* 'whole, complete' ~ PNC **-hōčV* 'full, fill' (NCED 525)
 Basque *atso* (*a-tso*) 'old woman' ~ PNC **čwōjV* 'woman, female' (NCED 374)
 Basque *zor(h)i* ~ (B) *zoli* 'fortune, luck; to mature, ripen' ~ PNC **zōtV* 'healthy, whole' (NCED 1095)
 Basque *sor-* 'body' (in compounds) ~ PEC **čōrχV* 'body' (NCED 346)

⁷⁹ Note the convergent developments (> o) in Caucasian.

Basque *otso* 'wolf' ~ PNC **bh̥erç̥i* 'wolf' > Andi *boço*, etc. (NCED 294)
 Basque *or* ~ (Z) *hor* ~ *ho* 'dog' ~ PEC **χHwəjrV*- (oblique stem) 'dog'
 > Budukh *χor*, etc. (NCED 1073)

Basque (B) *txorru* [čõru] 'root of hair' ~ PEC **çhwārə* 'hair' > Avar
çor, etc. (NCED 378)

Basque *aho* (*a-ho*) 'mouth' ~ PNC **χwi-* in **χwim(V)ɸV* 'mouthful' >
 Khinalug *χob*, etc. (NCED 1082)

Basque *olho* ~ *olo* 'oats' ~ PNC **λwřwV* 'millet' > Chechen *hoʔ*, etc.
 (NCED 763)

Basque /u/ corresponds to Caucasian **wV*, **Vw*.⁸⁰

Basque *zu* 'you' (polite) ~ PNC **zwe* 'you' (plural) > Lak *zu*, etc.
 (NCED 1086)

Basque *zur* ~ (B) *zul* 'wood' ~ PEC **çwřfiV̆* 'stick, branch' > Andi *çul*,
 etc. (NCED 374)

Basque (*h*)*ur* 'water' ~ PEC **fiwřV* 'river, reservoir' > Lezgi *hiil*, etc.
 (NCED 537)

Basque (*h*)*un* 'brain, marrow, pith' ~ PEC **hwěʔnV* 'blood' ('meat') >
 Lak *u* (NCED 496)

Basque *bul(h)ar* 'chest, breast' ~ PEC **çwřlfhē* 'udder, breast' (NCED 465)

Basque *idulki* (*i-dul-ki*) 'block of wood' ~ PEC **dwātř* 'stick' (NCED 405)

Basque *elhur* ~ *elur* (< **e-řu-r*) 'snow'⁸¹ ~ PEC **łřwV* 'snow' (NCED 684)

The most common syllabic structure of PDC nouns was typically CV(C)CV, and traces of this original pattern are frequent in Basque and some Caucasian (Dagestanian) languages.⁸²

(final -i/-e)

Basque *azeri* 'fox' ~ Tindi *sari* 'fox', etc. (NCED 324)

Basque *hiri* 'village, city' ~ Avar *kulí* 'farmstead' (NCED 692)

Basque *mihi* 'tongue' ~ Tindi *mic:i* 'tongue', etc. (NCED 802)

Basque *txori* /čori/ 'bird' ~ Tindi *çuri-baβa* 'quail' (NCED 388)

Basque *erdi* 'half, middle' ~ Tindi *b-aλ:i* 'in the middle' (NCED 412)

Basque *ilindi* ~ *il(h)inti* 'firebrand' ~ Andi *łudi* 'firewood' (NCED 764)

⁸⁰ Note the convergent developments (> *u*) in Caucasian.

⁸¹ Basque *-r* is a relic of the DC plural ending (see **Morphology**, below).

⁸² Note that in the cited cases Basque and Caucasian words have similar final vowels (i/e = i/e; u/o = u/o).

Basque *ipurdi* 'rump, buttocks' ~ Bezhta *pirt'i* 'bladder, lung' (NCED 871)
 Basque *gose* 'hunger, hungry' ~ Lak *k:aši* 'hunger', etc. (NCED 431)
 Basque *abere* 'domestic animal' ~ Udi *bele* 'cattle' (NCED 314)
 Basque *habe* 'pillar, beam' ~ Avar *hubi* 'post, pole, stem' (NCED 497)
 Basque *sare* ~ *sale* 'net, grate; stockade' ~ Avar *čali* 'fence' (NCED 343)

(final -u/-o)

Basque *sagu* 'mouse' ~ Avar *ca.χ:ú* 'weasel', etc. (NCED 322)⁸³
 Basque *itsu* 'blind' ~ Tindi *-ec:u-b* 'blind', etc. (NCED 1017)
 Basque *txainku* [čájŋkü] ~ *xanku* [šañku] 'lame' ~ Burushaski *čañgú* ~ *čanjú* 'lame'
 Basque *ukondo* 'elbow' ~ Hinukh *qontu* 'knee', etc. (NCED 925)
 Basque (dial.) *miko* 'a little (bit)' ~ Chamalal *miķu-b* 'small' (NCED 821)
 Basque (B) *kankano* 'stone, kernel, almond' ~ Avar *korķónu* 'grape, berry' (NCED 730)
 Basque *otso* 'wolf' ~ Andi *boço* 'wolf', etc. (NCED 294)
 Basque *sorho* ~ *solo* 'meadow, field' ~ Lak *šglu* 'earth, ground' (NCED 342)

The other western DC language, Burushaski, also preserves traces of the CV(C)CV structure:

Burushaski *joóli* 'filter woven out of twigs' ~ Tsez *želi* 'wattle fence', etc. (NCED 1108)
 Burushaski (H) *táno* 'rectum' ~ Avar *řinu* 'bottom', etc. (NCED 590)
 Burushaski *γunó* ~ *γonó* 'seed' ~ Botlikh *xuni* 'seed', etc. (NCED 1021)
 Burushaski *γoró* 'stones' ~ Chechen *qēra* 'stone', etc. (NCED 467)
 Burushaski *hurgó* ~ *horgó* 'up(hill), ascent' ~ Dargwa (*h*)*urqi* 'mountains', etc. (NCED 536) Burushaski *tumáy* ~ *tumá* 'nutshell, stone (of fruit)' ~ Abkhaz *a-t'amá* 'peach' (NCED 1004)
 Burushaski *phulyúuy* ~ *pholyó* 'feather' ~ Dargwa *paħala* 'feather' (NCED 879)
 Burushaski (Y) *huní* 'stone (of fruit)' ~ Akhwakh *hini* 'blood' (NCED 496)
 Burushaski (Y) *čargé* 'flying squirrel' ~ Avar *ca.χ:ú* 'weasel', etc. (NCED 322)

In the remaining DC languages (Sino-Tibetan, Yeniseian, Na-Dene) there is a strong tendency to reduce all words to monosyllabic forms, or at least to

⁸³ This looks like an equation of Basque *g* [ɣ] = Caucasian **χ*, but the Avar *χ* is secondary here, according to NCED (322), < PNC **cārgwē* (-*ə*, -*ā*) 'weasel, marten' ('mouse' in Circassian).

reduce syllables by apocope or syncope. Indeed, this tendency to reduce syllables is found to varying degrees in all DC branches. For example, in Basque final vowels frequently have been lost when a root contains a nasal or rhotic (PNC or PEC reconstructions represent the earlier stage):

Basque *zain* ~ *zaiñ* 'nerve, blood vessel' (cf. PEC **sēhmV* 'muscle, intestine' NCED 959); Basque *mun* ~ *muin* ~ *muñ* 'marrow, brain, pith' (cf. PEC **māhnū* 'brain, head' NCED 797); Basque *or* ~ *hor* 'dog' (cf. PEC **χHwějrv-* 'dog' NCED 1073);

Basque *ar* 'male' (cf. PEC **ʔrλwV* 'male' NCED 210; Burushaski *hir* 'man, husband')

II. Dene-Caucasian Morphology

The complete reconstruction of Proto-Dene-Caucasian morphology is potentially a vast field of study that will require decades or even centuries of further study (cf., e. g., the corresponding field of Proto-Indo-European morphology). Here I will attempt to summarize some earlier proposals and suggest some new possibilities.

A: The Dene-Caucasian Noun

Class / Gender: There is evidence from all DC branches that there was a system of noun classification in Proto-DC. Systems of this type, more or less transformed, persist to this day in many (28) Caucasian languages,⁸⁴ Burushaski,⁸⁵ and Yeniseian (Ket).⁸⁶ In the other languages (particularly Basque and Sino-Tibetan) only fossilized vestiges remain. In the comparison of Basque with other DC languages, it has long been known that Basque frequently has «leftover» initial segments that appear to be fossilized prefixes. The most striking of these is probably **be-/bi-*. The original separability of this element is shown even by internal reconstruction in words such as Basque *hatz* 'finger, paw' vs. *be-hatz* 'thumb, toe' (meanings vary widely depending on dialect); Basque *herde*,

⁸⁴ For East Caucasian, see, e. g., [CATFORD 1977]; [SCHULZE-FÜRHOFF 1992]; [SCHMIDT 1994]. In West Caucasian only Abkhaz and Abaza preserve a distinction human-non-human ([CATFORD 1977: 298]).

⁸⁵ See BERGER ([1974], [1998]).

⁸⁶ See WERNER ([1994]).

helder 'drivel' is *bilder* (< **bi-* + *helder*) in the Gipuzkoa dialect. These and other examples are listed with probable cognates in other DC languages:

Basque **be-hac* 'thumb, toe' (vs. unprefixated **hac* 'finger, paw') ~ Avar *k^wač* 'paw', etc. (NCED 704)

Basque **be-Hasu[m]* 'bile' ~ PNC **čwǎjmě* 'gall, anger' (NCED 329) ~ Burushaski *-sán* 'spleen' ~ PST **sīn* 'liver' (ST IV: 103) ~ PY **seŋ* 'liver' ~ Na-Dene: Eyak *sa^ht*, Tanaina *ziṭ*, Navajo *zid* 'liver' (if < **sVN-t*)

Basque **be-laři* 'ear' ~ Batsbi *larḵ* < **lari-ḵ* 'ear', etc. (NCED 756)

Basque **be-gi* 'eye' ~ West Caucasian **b-ía*, Chechen (archaic) *bɣa*, etc. 'eye' (NCED 250)

Basque **be-lhaun* 'knee' (with stem variant **be-lhaur-*) ~ Akhwakh *eḵelo* 'elbow', etc. (NCED 770)

Basque (G) *bi-lder* 'drivel' (vs. unprefixated *helder*, *herde* in other dialects) ~ Karata *hanḵa* 'sweat', etc. (NCED 509) ~ Na-Dene: Haida *ḵan* 'saliva'

Basque **bi-s-ka-ř* 'back' ~ Caucasian: Abkhaz *azk^wa* 'back' ~ Burushaski *-sqa* 'on one's back' ~ ST: Tibetan *s-ku* 'body' ~ Na-Dene: Haida *s-ku* 'back'

Basque **bi-rik(a)* 'lung' ~ PNC **jērḵwī* 'heart' > Avar *raḵ*, Lezgi *riḵ*, etc. (NCED 678) ~ PST **ṛǎŋ* // **ṛāk* 'breast' (ST IV: 6)

Basque **bi-si* 'life, alive' ~ Lak *s:iḥ* 'breath, vapor', Chechen *sa* 'soul', etc. (NCED 961) ~ PST **sij(H)* 'to die' (ST IV: 102) ~ Na-Dene: Tlingit *sa*, *sen* 'to breathe, blow'; Eyak *sīh* 'to die'⁸⁷

Semantically, all of these words have to do with body parts, or fluids (bile, saliva), or attributes (life) of the body. In a Dene-Caucasian context, the most obvious comparison is with the East Caucasian class element that frequently appears in the form *b-*, sometimes prefixed to nouns, e. g. Tindi *b-eḵ:u* 'stomach' (NCED 670), *b-aḵ:i* 'in the middle' (NCED 412); and the prefix appearing as *b-* or *p-* in some West Caucasian words: Ubykh *b-ḵa* 'eye' (NCED 250), *p-ča* 'guest' (NCED 612). This element is reconstructed as PNC **b-* ([DEE-TERS 1963]) or **w-* ([DIAKONOFF & STAROSTIN 1986]; [NIKOLAEV & STAROSTIN 1991]) 'marker of III class singular'. On the possible connection with Sino-Tibetan **b-* (and/or **m-*), see below.

Basque has several other fossilized prefixes in addition to **be-/bi-*. Because of the patterning of **be-/bi-* (with an alternation between two similar vowels), I have posited that the *e-* and *i-* prefixes be conflated as **e-/i-*, for example:

⁸⁷ «The semantic developments 'to breathe' > 'get tired' ... > 'die' are quite usual.» (NCED 961). Cf. Russian *душа* [*dušá*] 'mind, soul, spirit' : *душумь* [*dušít*] 'to smother'.

Basque **e-lhu-ṛ* 'snow'⁸⁸ ~ PEC **l̥wV* 'snow' > Chechen *lō*, etc. (NCED 684) ~ Na-Dene: Kato *loo* 'frost', Navajo *ń-ló* 'hail', etc.

Basque **e-ke* > (AN, BN, R) *eke* 'smoke' (beside common Bsq *ke, khe*) ~ Avar *ḱ:uj*, Bezhta *qo*, etc. 'smoke' (NCED 738)

Basque **e-guṛ* 'firewood' ~ Udi *gor, gorgor* 'pole', etc. (NCED 440)

Basque **e-kai* > (BN, Z) *ekhei* 'material' (beside unprefixated *gai, gei*) ~ Lak *qaj* 'thing(s), ware(s)', etc. (NCED 930)

Basque **e-Sne* 'milk' ~ Chechen *šin* 'udder', etc. (NCED 982) ~ Burushaski *ṣiṅ* 'milk'

Basque **e-purdi* 'rump, buttocks' ~ Bezhta *pirt̥i* 'bladder, lung', etc. (NCED 871) ~ Burushaski (Y) *phaṭ* 'gizzard; stomach (of fowl)' ~ Na-Dene: Eyak *wəṭ* 'vomit'; PAtH **wəṭ* > Navajo *-bid* 'belly', etc.

Basque **e-če* 'house' ~ PNC **ç[il]ju* 'house' > Khinalug *ç^wa*, etc. (NCED 364) ~ Burushaski *-yeés* 'dwelling place'

Basque **e-s-pel* (*ezpel*) 'box tree' ~ cf. Dargwa (Tsudakhar) *pgl* 'aspens', etc. (NCED 870); PY **?i-pVl* 'aspens tree' (SSEJ 196)

Basque **i-saṛ* 'star', etc. ~ Tindi *c:aru* 'star', etc. (NCED 1098)

Basque **i-toi* 'drop (of water)' ~ Chechen *tuj* 'spittle', etc. (NCED 994)

Basque **i-hinc* 'dew' ~ Lak *xunça* 'bog', etc. (NCED 1065) ~ PST **χŭ(s)* > Tibetan *hus* 'moisture, humidity', etc. (ST V: 180)

Basque **i-sār̥di* 'sweat, sap' ~ PEC **çāṭwV* 'blood, life' (NCED 376) ~ PY **sur* 'blood'

Basque **i-lhinti* 'firebrand, ember' ~ PEC **λwindV* > Andi *ludi* 'firewood', etc. (NCED 764) ~ Na-Dene: Eyak *ʔid ~ ʔəd* 'dead wood, dry wood', etc.

Basque **i-dul-ki* 'block of wood' ~ Ingush *täl-g* 'chock', etc. (NCED 405)

Basque **i-tain* 'tick' ~ PNC **ṭaHnā* 'nit' > Akhwakh *fani*, etc. (NCED 995)

Basque **i-s-tai* 'groin' ~ Caucasian: Adyge *ś^wt:ə* 'genitals' ~ Burushaski (Y) *-ṣṭiṅ* 'loins, waist' ~ PST **tājH* 'bottom' > Lushai *tāi* 'lower abdomen, waist', etc. (ST II: 124)

Basque **i-s-te-ṛ* 'thigh' ~ Avar *het'é / het* 'foot', etc. < PEC **ṭwifhV* (NCED 1007) ~ Burushaski *-úṭ ~ -úṭis ~ -húṭes* 'foot' ~ PST **təH* > Old Chinese 𠂔: **təʔ* 'foot, heel' (ST II: 123) ~ Na-Dene: Haida *s-fáay, s-fá-* 'foot'

Basque **i-se-* 'aunt' > (c) *izeba*, etc. ~ Tsakhur *iči* 'gil', etc. (NCED 952)

This noun class putatively included liquids and other mass nouns (milk, dew, snow, smoke, wood, material), as well as some body parts (all in lower

⁸⁸ Basque *-r* is a relic of the DC plural ending (see below).

parts of the body). This **e-/i-* prefix can be connected with the East Caucasian class marker reconstructed as **j-* 'II-class singular' ([DIAKONOFF & STAROSTIN 1986]; [NIKOLAEV & STAROSTIN 1991]) or «feminie rational» ([DEETERS 1963]). For example, in the Avar-Andian languages this prefix appears in words for 'sister' (e. g. Avar *j-ac*) and 'daughter' (Avar *j-as*), as opposed to words for 'brother' (Avar *w-ac*) and 'son' (Avar *w-as*), which have reflexes of the I-class prefix **u-* (see below). Elsewhere, the word for 'snow' in Lezgian languages (Lezgi *žiw*, Tabasaran *jif*, Agul *ibx* < **jiwλ*) seems to reflect an incorporated **j-* prefix equivalent to *e-* in the Basque word (**e-lhu-r̄* 'snow'). A vestige of the human-feminine nature of this class may perhaps be seen in Basque **i-se-* (*izeba, izeko*) 'aunt', as opposed to **o-ša-ba* 'uncle' (see below under Bsq **o-/u-*).

Parallel with **be-/bi-* and **e-/i-*, I have proposed to conflate the *o-* and *u-* prefixes as **o-/u-*, for example:

Basque **o-lho* 'oats' ~ PNC **λwřwV* 'millet' (NCED 763)

Basque **o-dol* 'blood' ~ PST **t(h)ǎIH* 'meat, flesh' (ST II: 158) ~ Na-Dene: Eyak *deł* 'blood', Navajo *dił* 'blood', etc.

Basque **o-laic* / **o-raic* 'colostrum': cf. Andi *=erč-* 'to milk', etc. (NCED 600)

Basque **o-ša-ba* 'uncle' ~ PNC **-řšwĚ* > Andi *w-ošo* 'son', *j-oši* 'daughter', etc. (NCED 671) ~ Burushaski **-s-* > (Y) *-is* 'young (of animals); child (of humans)', (H, N) *-s-k(o)* 'young (of animals); (jokingly) human child'

Basque **u-řdail* 'stomach' ~ Karata *m-eĭu* 'stomach', etc. (NCED 670) ~ Burushaski **-úl* 'belly, abdomen'

Basque **u-s-ki* 'anus' ~ ST: Tibetan *s-kyi-ša* 'anus' ~ Na-Dene: Haida *s-kyáaw* 'tail'; Tlingit *kí* 'rump, buttocks'

Basque **u-kab-il* 'fist' ~ Lezgi *k:ap, kapaš* 'hand', etc. (NCED 298)

Basque **u-kundo* 'elbow' ~ Hinukh *qontu* 'knee', etc. (NCED 925)

Semantically, most of these words are body parts (stomach, anus, fist, elbow) or fluids (blood, colostrum). This **o-/u-* prefix is possibly cognate with PEC **w-* ([DEETERS 1963]) or **u-* 'I-class singular' ([DIAKONOFF & STAROSTIN 1986]; [NIKOLAEV & STAROSTIN 1991]). I-class is the human-masculine class in Caucasian, and a vestige of that gender category may perhaps be seen in Basque **o-ša-ba* 'uncle', as opposed to **i-se-ba* 'aunt' (see above under Bsq **e-/i-*).⁸⁹

Basque also has a fossilized prefix in the shape **a-*, for example:

⁸⁹ Noticed by TROMBETTI ([1925: 62]).

Basque **a-hiNs-pa* 'sister (of a woman)' ~ Bezhta *is* 'brother', *isi* 'sister', etc. (NCED 669) ~ Burushaski **-ço* 'brother (of a man), sister (of a woman)' ~ PST **čǎjH* 'elder brother or sister' ~ Na-Dene: Hupa *d-ehǰ* 'younger sister', etc.

Basque **a-čo* 'old woman' ~ Lak *c:u-* 'female', etc. (NCED 374)

Basque **a-seyari* 'fox' ~ Tindi *sari* 'fox', etc. (NCED 324)

Basque **a-bere* 'cattle' ~ Udi *bele* 'cattle' (NCED 314)

Basque **a-kain* 'tick' ~ PEC **qǎn?V* 'louse, nit; worm' (NCED 911) ~ Burushaski **khen* 'flea' ~ PST **kin* 'ant' (ST V: 55)

Basque **a-me(n)c* 'gall oak' ~ Chechen *naž* 'oak tree' etc. (NCED 857) ~ Burushaski **me[n]š* > (H) *meš*, (Y) *noš* 'bush, shrub, sapling'

Basque **a-ho* 'mouth' ~ PNC **χwi-* in **χwim(V)ǰV* 'mouthful' (NCED 1082) ~ PST **kh^wǎ(H)* 'mouth, hole' (ST V: 107) ~ PY **χowe* 'mouth' (SSEJ 302) ~ Na-Dene: **χU?* 'tooth' > Tlingit *ʔúχ*, Eyak *χuu-ǰ*, Navajo *-ǰòð?* 'tooth', etc.

Basque **a-r̄daṛ* > **adaṛ* 'horn' ~ Avar *ǎ:ar* 'horn', etc. (NCED771) ~ Burushaski **-ltúr* 'horn'

These words refer to persons, animals, plants, and body parts. There is no apparent counterpart to this **a*-prefix among the East Caucasian class markers. **a*- could of course represent the trace of a class lost in the East Caucasian system, or it could correspond to the West Caucasian **a*- 'possessive prefix of third person singular', as for example Abkhaz *á-la* ~ *á-bla* 'its eye' ([CHIRIKBA 1996: 364f.]). (See below under **Dene-Caucasian Pronouns**.)

TRASK ([1995: 74]) has objected that several of these proposed Pre-Proto-Basque class prefixes are found on body part words. In fact, the apportioning of body part words in more than one class is typologically usual. For example, in Lak *ja* 'eye', *niq:a* 'heel', *qi* 'horn', etc., belong to the III-class, while *k:arč:i* 'tooth', *s:ursu* 'throat', *ka* 'hand, arm', etc. belong to the IV-class.⁹⁰ In Hunzib, *bicu* 'arm' and *habu* 'wing' belong to III, *bil* 'lip' and *gogor* 'cheek' belong to IV, *koč* 'nostril' and *ǎōra* 'bone' belong to V, etc.⁹¹ Outside of Dene-Caucasian, e. g. Swahili (Bantu) *moyo* 'heart' is III-class, *jino* 'tooth' is V-class, *ulimi* 'tongue' is XI-class, etc. It is well-known in Indo-European that such words may be masculine, feminine, or neuter.

In addition to the prefixes already mentioned, there is another «leftover» element in Basque, **-s-*, that always appears *after* the other fossilized prefixes.

⁹⁰ BOUDA ([1949]).

⁹¹ VAN DEN BERG ([1995]).

Basque **bi-s-ka-ř* 'back' ~ Caucasian: Abkhaz *azk^wa* 'back'; Burushaski **-sqa* 'on one's back'; ST: Tibetan *s-ku* 'body'; Na-Dene: Haida *s-ku* 'back'

Basque **e-s-pel* (*ezpel*) 'box tree' ~ cf. Dargwa (Tsudakhar) *pgl* 'aspen', etc. (NCED 870); PY **?i-pVI* 'aspen tree' (SSEJ 196)

Basque **i-s-tai* 'groin' ~ Caucasian: Adyge *ś^wt:ə* 'genitals'; Burushaski (Y) *-ştiŋ* 'loins, waist'; PST **təjH* 'bottom' > Lushai *tāi* 'lower abdomen, waist', etc. (ST II: 124)

Basque **i-s-te-ř* 'thigh' ~ Avar *het'é / het'* 'foot', etc. < PEC **twiřV* (NCED 1007); Burushaski **-húř* 'foot'; PST **təH* > Old Chinese 𨮗 **tə?* 'foot, heel' (ST II: 123); Na-Dene: Haida *s-řáay*, *s-řa-* 'foot'

Basque **u-s-ki* 'anus' ~ ST: Tibetan *s-kyi-ša* 'anus'; Na-Dene: Haida *s-kyáaw* 'tail'; Tlingit *kí* 'rump, buttocks'

We think this **-s-* is identical with the DC prefix **s-* that is most abundantly attested in one Na-Dene language (Haida) and in some Sino-Tibetan languages,⁹² as shown in some striking comparisons of Haida and Tibetan:⁹³

| Haida | | Tibetan | |
|----------------|---------------------|------------------------------|---------------------|
| <i>s-qál</i> | 'shoulder' | ~ <i>s-gal-(pa)</i> | 'small of the back' |
| <i>s-ku</i> | 'back' | ~ <i>s-ku</i> | 'body' |
| <i>s-kyúu-</i> | 'on one's shoulder' | ~ <i>s-gu-stegs</i> | 'elbow, angle' |
| <i>s-kyáaw</i> | 'tail' | ~ <i>s-kyi-ša</i> | 'anus' |
| <i>s-řut</i> | 'armpit' | ~ <i>s-ked-pa</i> | 'waist' |
| <i>s-gíl</i> | 'navel' | ~ <i>s-kil</i> ⁹⁴ | 'center' |

We find the most plausible explanation for these fossilized prefixes is that they are «stage III articles» ([GREENBERG 1978]), that is, prefixes that once marked class distinctions and remained as phonetic segments after their morphological meaning was lost. Within Dene-Caucasian the most abundant supply of stage III articles is probably found in Sino-Tibetan, for example:

Tibetan *m-čhin* 'liver', *b-žin* 'face', *r-nag* ~ *s-nag* 'pus', *d-gun* 'winter', *l-ga* ~ *s-ga* 'ginger', *s-ked-pa* 'waist', etc.

⁹² BENEDICT ([1972: 105–108]).

⁹³ BENGTON ([2002a]).

⁹⁴ Balti (Sbalti) is a Tibetic (Bodic) language spoken in northeastern Pakistan, adjoining the homeland of Burushaski speakers. Classical Tibetam has here *d-kyil-ma*, with a different prefix.

In some Sino-Tibetan languages a vowel has developed between prefix and stem, convergent with the development in Basque (*be-/bi-*):

Garo *bi-bik* 'bowels', *bi-kha*, *ba-kha* 'liver', *bi-bal* 'flower', *bi-mik* 'sprout', *bi-tši* 'egg', etc.⁹⁵

In the Caucasian languages relics of stage III articles appear more sporadically, for example:

Avar *mi-tír* 'wing', *ma-xá* 'abomasum', *me-géž* 'beard'; Lezgi *ru-fun* 'belly'; Tsakhur *wu-xun* 'belly'; Ubykh *t-χamá* 'skin, fur', *t-χ^wa* 'ashes', *b-ħa* 'eye', *b-ħa* 'top', etc.

In Yeniseian there are some unaccounted-for initial segments (**ʔa-*, **ʔi-*, **ʔu-*) that could also be fossilized prefixes:⁹⁶

- PY **ʔa-lit* 'woman' (SSEJ 180): cf. Avar *t:ádi* 'wife', etc. (NCED 764)
- PY **ʔa-lVp* 'tongue' (SSEJ 180): cf. Tsez *ħepu* 'lip', etc. (NCED 774)
- PY **ʔa-mas* 'thorn' (SSEJ 191): cf. Archi *mač* 'nettle', etc. (NCED 808)
- PY **ʔi-gin* '(tree-)bark' (SSEJ 196): cf. Lushai *vun* 'skin, pelt', etc. < PST **q(h)^win* (ST V: 169)
- PY **ʔi-pVl* 'aspen tree' (SSEJ 196): cf. Dargwa (Tsudakhar) *pal* 'aspen', etc. (NCED 870); Basque **e-s-pel* (*ezpel*) 'box tree'
- PY **ʔu-lVk* 'bladder, bubble' (SSEJ 200): cf. Godoberi *req:^wa* 'bladder', etc. (NCED 946)
- PY **ʔV-silV* (**ʔV-čilV*) 'bird' (SSEJ 204): cf. Basque **čori* / **čol-* 'bird'; Chamalal *čor* 'bird', etc. (NCED 388)

TRASK ([1995: 73–74]) objects that many Basque nouns carry no fossilized prefixes at all, which is true. However, as we can see from the Caucasian and Sino-Tibetan examples, it is typical of stage III articles that they appear «with some nouns but not with others in a quite sporadic way that differs from language to language» ([GREENBERG 1978: 47]). For example, Basque *hur* 'hazelnut' vs. *a-hur* 'hollow of hand'; *lur* 'earth' vs. *e-l(h)ur* 'snow'; *larri* 'sadness' vs. *be-larri* 'ear'. Cf. also Tibetan *gun* 'loss' vs. *r-gun* 'vine, grape', *d-gun* 'winter'. These examples and others suggest that some stage III articles serve to distinguish homonyms.

⁹⁵ Cf. BENEDICT ([1972: 110ff.]).

⁹⁶ Developed from a suggestion by S. A. STAROSTIN (Jan. 2004).

The class affixes (living and fossilized) can tentatively be correlated as follows:

| Basque (fossilized) | Caucasian ⁹⁷ | nominal class ⁹⁸ | Sino-Tibetan (fossilized) ⁹⁹ | Yeniseian (Ket) ¹⁰⁰ |
|------------------------|-------------------------------|--------------------------------|--|-----------------------------------|
| o- / u- | * <u>u</u> - | I | | a / o |
| e- / i- | *j- | II | g- (?) | i / id |
| be- / bi- | *w- / *b- (m-) ¹⁰¹ | III | b- / m- | b |
| | *r- / *d- | IV | r-, d- | |
| -s- | (-s-) ¹⁰² | | s- | |

This is a preliminary attempt to correlate the class systems of these diverse families that diverged millennia ago. In addition, the class systems in Basque and Sino-Tibetan were already obsolete by the time the languages were recorded. More research is needed to further develop these ideas.

Inflection of Nouns: The DC plural ending *-r:

Many Basque nouns have a leftover final element *-r* (*-*r̄*) when compared with other DC languages:

Basque **belhar̄* 'forehead' ~ Rutul *bāl* 'forehead', Tindi *bala* 'edge, end, corner', etc. < PEC **bʃāthō* (NCED 285) ~ Burushaski *bal* 'wall' (< **'edge'*)

Basque **ister̄* 'thigh' ~ Avar *het̄é* / *het̄* 'foot', etc. < PEC **ʃwih̄V̄* ~ **ʃwiṭ̄V̄* (NCED 1007)

Basque **samar̄* 'fleece' ~ PEC **çhwēme* 'eyebrow' > Lezgi *r-çam*, etc. (NCED 364)

Basque **fondar̄* 'sand, beach' ~ PEC **ʔantV* > Tsez *atu* 'dirt, mud', Khinalug *ant* 'earth, ground' (NCED 201)

Basque **elhuṛ* 'snow' ~ PEC **λwV̄* 'snow' > Chechen *lō*, etc. (NCED 684)

⁹⁷ Proto-forms as proposed by S. A. STAROSTIN ([2002b]).

⁹⁸ Numbers as customarily used for the East Caucasian classes.

⁹⁹ BENEDICT ([1972: 103ff.]).

¹⁰⁰ Ket objective marker in the verb template. Variants are determined by tense: *a*, *i* in present tense, *o*, *id* in past ([G. S. Starostin 1995a], [1995b]).

¹⁰¹ *m-* appears sporadically, for example: Avar *mi-ṭir* 'wing', *ma-xá* 'abomasum', *me-géž* 'beard', etc. Cf. Hunzib, where concord prefixes *b-* and *r-* change to *m-* and *r-*, respectively, before roots with nasalized vowels ([VAN DEN BERG 1995: 31]).

¹⁰² *-s-* appears only sporadically in Caucasian, e. g. Abkhaz *azk^wa* 'back', Adyge *ś^wt:ə* 'genitals', with no known morphological significance.

Basque **mukuṛ* 'trunk, base of tree' ~ PEC **mḥōqwe* 'oak-tree' > Tsakhur *moq*, etc. (NCED 811)

Basque **nigaṛ* 'tears' (eye-water) ~ Dargwa *nerγ* 'tear', Chechen *noŋqa* 'pus', etc. < PEC **nēwqū* (NCED 848)

Basque **bulhaṛ* 'chest, breast' ~ PEC **ḡwālfhē* 'udder, breast' (NCED 465)

Basque **fieldeṛ* > (G) *bilder* 'drivel' (< **bi-fieldeṛ* vs. unprefixated **fieldeṛ* and unsuffixated **fiēṛde* in other dialects) ~ Karata *hanλa* 'sweat', etc. (NCED 509)

Basque **biskaṛ* 'back' ~ Caucasian: Abkhaz *azk^wa* 'back' ~ Burushaski *-sqa* 'on one's back' ~ ST: Tibetan *s-ku* 'body' ~ Na-Dene: Haida *s-ku* 'back'

This Basque *-ṛ is probably cognate with the plural ending *-rV well known in Caucasian languages: Hunzib *-r*, Tindi *-r-da*, Lezgi *-ar*, *-er*, Khinalug *-r* (plural); Abkhaz *-r(a)* (plural, collective).¹⁰³

Caucasian languages also have some remnants of a fossilized plural ending, though the words (as in Basque) now have singular meanings, for example:

Akushi *nerb*, Kaitag *nerb*, *merb* 'tear' (eye-water), etc. < Proto-Dargwa **nerb^w* < earlier **neb^w-r* 'tears', parallel with the development of Basque **nigaṛ* 'tears' (see above).¹⁰⁴

Agul *ibur*, Rutul *ubur*, Budukh *ibir* 'ear', historically 'ears' (NCED 240)

Avar *bucúr* 'fortification, dike', Dargwa *mucari* 'wall' (historical plurals: NCED 308) Khinalug *culoz* 'tooth' (*-oz* < plural *-or*) (NCED 326)

Cf. also Burushaski *-aro* (plural element of I and II-class nouns, e. g. (H, N) *élgit-aro* 'goats', *-yás-c-aro* 'sisters', etc.).¹⁰⁵

Inflection of Nouns: Basque stem variants and Caucasian oblique stem markers?

Any grammar of Basque makes note of stem variants in which an intrusive consonant appears to be inserted:

Basque *begi* 'eye' + *azal* 'skin' > *be-t-azal* 'eyelid'; *argi* 'light, bright' + *izar* 'star' > *ar-t-izar* 'morning star'; *su* 'fire' + *argi* 'light' > *su-t-argi*

¹⁰³ STAROSTIN ([2002b]).

¹⁰⁴ «The medial *-r* in PD is obviously secondary, probably having penetrated there from an original plural form in **-r*.» (NCED 849).

¹⁰⁵ BERGER ([1998, I: 48, 49, 57]).

'firelight';¹⁰⁶ *ikhuz-t-aldi* 'visit' (lit. 'moment of seeing'); *il-t-amuan* 'at the hour of death' (*hil, il* 'death'), etc.¹⁰⁷

I suggest the mysterious element *-t-* could be a fossilized remnant of an older oblique stem marker. Cf. the East Caucasian oblique stem marker **-dV-*, for example Hunzib *ože* 'boy' : genitive *ož-du-s* 'boy's', *azu* 'summer' : gen. *az-du-s*.¹⁰⁸

Perhaps there is a similar explanation for the Basque alternation of final *-n* and *-r-* in stem variants:

Basque *egun* 'day' + *aldi* 'time' > *egu-r-aldi* 'weather'; *oihan* 'forest' + *bide* 'road' > *oiha-r-bide* 'forest road', etc.¹⁰⁹

Compare the East Caucasian oblique stem marker **-tV-*, or **-rV-*, e. g. Hunzib *koč* 'bush' : genitive *koč-li-s*, *qima* 'cheese' : gen. *qima-li-s*; *xo* 'meat' : gen. *xo-lq-s*; *xi* 'malt' : gen. *xi-ro-s*, etc.¹¹⁰

Inflection of Nouns: Case endings:

The following remarks pertain mainly to the three western DC families (Basque, Caucasian, Burushaski). Basque has (among others) the following case endings, illustrated by the word *hitz* 'word':¹¹¹

| | | |
|---------------------|----------------------------------|--|
| Absolutive | <i>hitz</i> '(a) word' | <i>hitz-a</i> 'the word' |
| Ergative | <i>hitz-ek</i> 'word' | <i>hitz-a-k</i> 'the word' |
| Dative | <i>hitz-i</i> '(to a) word' | <i>hitz-a-r-i</i> '(to) the word' |
| Instrumental | <i>hitz-ez</i> '(by a) word' | <i>hitz-a-z</i> '(by) the word' |
| Genitive | <i>hitz-en</i> '(of a) word' | <i>hitz-a-r-en</i> '(of) the word' |
| Locative | <i>hitz-eta-n</i> '(in a) word' | <i>hitz-ea-n</i> '(in) the word' |
| Allative | <i>hitz-eta-ra</i> '(to a) word' | <i>hitz-er-a</i> '(to) the word' |
| Comitative | <i>hitz-ekin</i> '(with a) word' | <i>hitz-a-r-ekin</i> '(with) the word' |

Some of the Basque case endings have likely cognates in the Caucasian languages¹¹² and Burushaski:

¹⁰⁶ TRASK ([1997: 186–187]).

¹⁰⁷ TAILLEUR ([1994: 39]).

¹⁰⁸ VAN DEN BERG ([1995: 38]).

¹⁰⁹ TRASK ([1997: 189]).

¹¹⁰ VAN DEN BERG ([1995: 37–38]).

¹¹¹ The words are cited in their Standard Basque (Euskera Batua) forms ([TRASK 1997: 95]). The case suffixes — especially the locative and compound cases — vary from dialect to dialect.

(1) Basque **absolutive** –0 (no ending): The Caucasian languages, and Burushaski, also lack any ending for the **nominative (absolutive)** case.¹¹³ In all three families (Basque, Caucasian, Burushaski), generally, the absolutive form is used for the subject of intransitive verbs and the direct object of transitive verbs. Special **ergative** forms are used for the subject of transitive verbs.

(2) Basque **ergative** *-k*: This is reminiscent of the Burushaski instrumental ending *-k /-ak*, as in *thúr-ak* ‘with a whip’, *hundó-k – bundó-k* ‘with sticks and stones’, etc.¹¹⁴ DUMÉZIL ([1933: 127]) connects the Basque ergative *-k* with Kabardian ergative *-қә* and Circassian (Adygə) instrumental *-қә*. (See below for the historical connection of instrumental and ergative.)

(3) Basque **dative** *-i*: East Caucasian **dative** **-Hi*, which manifests as Avar *-e* (dative), Hunzib *-i* (dative), etc. In some languages the case function has shifted to instrumental (Lak, Dargwa), genitive (Khinalug), or ergative (Tsezian, Dargwa, Khinalug). Burushaski has an ending *-e* that is used as both ergative and genitive,¹¹⁵ e. g. (H, N) *hiles-e* ‘boy’ (erg.), *hiles-e* ‘boy’s’, etc.

(4) Basque **instrumental** *-z*: NIKOLAYEV and STAROSTIN reconstruct Proto-Caucasian **-s-* **instrumental animate; general attributive**, though in the modern languages this ending has shifted to other closely related functions: Chechen *-sa* (ergative animate), Lak *-s:a* (attributive suffix: adjectives and participles), Lezgi *-z* (dative, infinitive), Abkhaz *-s* (transformative/adverbial case), etc.¹¹⁶ Possibly the Burushaski infinitive ending *-as / -áas* (e. g., *hér-as* ‘to cry, wail’, *min-áas* ‘to drink, smoke’)¹¹⁷ belongs here: cf. the parallel infinitive *-s* in some Lezgian languages.

Farther afield, SHAFER ([1965: 448]) calls attention to Classical Tibetan «*-yis, ... , -s* ‘[Instrumental]’ (after vowels) ... Kanauri *-s* ‘ag[en]t.’; Almora *-s*

¹¹² Proto-Caucasian forms are drawn from STAROSTIN ([2002b]). Much is also owed to the comparisons of Basque and Caucasian endings made by TROMBETTI ([1925]); DUMÉZIL ([1933: 125ff.]), and LAFON ([1951]).

¹¹³ This is not universal. In Indo-European, for example, many nouns [mainly masculine or feminine] have the nominative ending *-s*.

¹¹⁴ BERGER ([1998, I: 61]). This ending only occurs with certain nouns and with verbs meaning ‘strike’ or ‘shoot’. BERGER calls it «erstartt» (petrified).

¹¹⁵ Except class II (feminine), where the genitive ending is *-mu*.

¹¹⁶ The function in Abkhaz «probably confirms the reconstruction of an original instrumental meaning; the instrumental case is often used with a transformative sense, e. g. in Russian» (DIAKONOFF & STAROSTIN 1986: 75). This reconstructed meaning was made without any reference to Basque.

¹¹⁷ BERGER ([1998, I: 143]).

...; Dhimal *-śo* 'by, I.'»¹¹⁸ TAILLEUR ([1958], [1994]) notes a similar suffix in Yeniseian: Ket *-s*, *-as*, *-aś* **instrumental, comitative**, as in *tug-aś* 'à la hache, avec une hache', etc., and compares it with Basque *-z*, Caucasian *-s*, and others.

5) Basque **genitive** *-en*: Proto-Caucasian **genitive** **-nV*, attested as Lezgi *-n* (genitive), Chechen *-n* (genitive, infinitive, adjective and participial suffix), Ubykh *-na* (possessive case), etc. In some languages the function has shifted to ablative (Avar), ergative (Udi, Ubykh), etc. DUMÉZIL ([1933: 126]) thought Basque genitive *-en* and **locative (inessive)** *-n* went back to the same original case ending.

(6) Basque **allative** *-ra* (some northern Basque dialects have the form *-rat* and/or *-la(t)*¹¹⁹: cf. Chechen *-l*, *-lla* (translative), Tsez *-r* (dative, **lative**), Khinalug *-li* (general locative), etc. (See **Phonology** for the relationship of Basque *r* and Caucasian **l*.) The terms «allative» and «lative» are generally equivalent., expressing the goal of a motion. The Burushaski dative/allative ending *-r* / *-ar* and/or locative *-al-* are also probably cognate with these.

(7) Basque **comitative** *-ekin*: cf. Avar *-gu-n*, *-gi-n* (comitative), Andi *-lo-gu*, Karata *-qi-l*, Tindi *-ka*, Akhwakh (Ałwał) *-qe-na*.¹²⁰

Basque, Caucasian, and Burushaski also share the typological similarity of having *compound case endings*, constructed by the agglutination of more than one simple ending. For example, the Basque **directional** ending *-(r)antz* < allative **-(r)a-* + **-nc-*, as in *mendi-rantz* 'towards the mountain';¹²¹ Burushaski **ablative** *-cum* < *-c-* + *-um-* and **allative** *-car* < *-c-* + *-ar-*, as in *čhiš-cum čhiš-car* 'from hill to hill';¹²² Hunzib **allative-approximative** *-dardo* < *-dər-* + *-do-*, as in *is-ti-dardo* 'toward his brother',¹²³ etc.

B: The Dene-Caucasian Pronouns

Several Dene-Caucasian languages have suppletive personal pronoun stems, and this seems to have been the case in Proto-Dene-Caucasian.

¹¹⁸ SHAFER compared these Sino-Tibetan endings with Indo-European instrumental endings.

¹¹⁹ TRASK ([1997: 93]).

¹²⁰ TRASK ([1997: 201]) cautions that «[c]omitative *-ekin* is clearly late. It is composed of genitive *-e* plus the noun *kide* 'fellow, mate' (itself of no possible antiquity) plus locative *-n*;» Like Trask's other declarations, this should be investigated.

¹²¹ Ibid.

¹²² BERGER ([1998, I: 75]).

¹²³ VAN DEN BERG ([1995: 48]).

| Proto-DC | Basque | Caucasian | Burushaski | Sino-Tibetan | Yeniseian | Na-Dene | Sumerian |
|-------------------------------------|---|---------------|-----------------------------|--------------------------|------------------|--|---|
| 1 sg. * <i>ηV</i> | * <i>ni</i> , * <i>ni-</i> | * <i>nĭ</i> | * <i>a-</i> | * <i>ηā-</i> | * <i>η</i> | | / <i>na</i> (e)/ ES / <i>ma</i> (e)/ |
| 1 sg. * <i>dzV</i> | * <i>-da-</i> / * <i>-t</i> | * <i>zō</i> | * <i>ʒa</i> | | * <i>ʔaʒ</i> | * <i>ʒ-</i> Haida <i>dii</i> | |
| 1 sg. * <i>KV</i> | * <i>gu</i> / * <i>g-</i> | | | * <i>kǎ-</i> | | Tlingit <i>χa</i> Eyak <i>x-</i> , <i>x^w-</i> | |
| 2 sg. * <i>K^wV</i> | * <i>hi</i> , * <i>h-</i> , * <i>-ga-</i> | * <i>hōV</i> | * <i>gu-</i> / * <i>go-</i> | * <i>K^wa-</i> | * <i>(V)k(V)</i> | * <i>χ^w-</i> Tlingit <i>yi</i> ~ <i>yi</i> | |
| 2 sg. * <i>μVn</i> | * <i>-na-</i> | * <i>μō-n</i> | * <i>u-n</i> | * <i>nǎ-(η)</i> | * <i>ʔaw</i> | * <i>ηən</i> Haida <i>darj</i> Tlingit <i>waʔé</i> | |
| 3 sg. * <i>w-</i> (* <i>m-</i>) | * <i>be-ra</i> | * <i>mV</i> | * <i>mu-</i> (fem.) | * <i>m-</i> | * <i>wV</i> | * <i>wə-</i> Eyak <i>wa-</i> Tlingit <i>wé</i> Haida <i>ʔwa</i> | |
| 2 pl. * <i>Su</i> | * <i>su</i> , * <i>s-</i> | * <i>zawě</i> | | | | | / <i>za</i> (e)/ 2 sg. |

Notes: Basque has leveled out the original suppletion, keeping the PDC stems $*\eta V$ (1 sg.) and $*K^wV$ (2 sg.), except in verbal markers where suppletion persists: 1 sg. $*n-$ / $da-$, $*-t-$; 2 sg. $*-ga-$ (masc) : $*-na-$ (fem); $*gu$ is 1 pl. 'we'.

Caucasian: 1sg. $*n\check{x}$ is restricted to Lak and Dargwa: other Cauc. languages have $*z\bar{o}$. Suppletion in second person well-preserved in some EC languages, some of which have an additional 2 sg. stem, $*d\bar{u}$.

Burushaski: Suppletion in 1sg. and 2 sg. is preserved. (Cf. EC and Yeniseian.)

Sino-Tibetan: The general pattern is 1 sg. $*\eta\bar{a}-$: 2sg. $*n\check{a}-(\eta)$. 1 sg. $*k\check{a}-$ in Tib. *kho-bo* 'I, me', Lushai *ka* 'me, my', Dhimal *ka* 'Y', etc. See ST V: 134 (№ 497), where the authors suggest derivation from a compound, $*k\check{a}-\eta\bar{a}-$. 2sg. $*K^wa-$ is restricted to Tibetan, Burmese, and Gurung (ST V: 129, № 480).

Yeniseian: Suppletion in 1 sg. and 2 sg. is well preserved. (Cf. EC and Burushaski.)

Na-Dene: The forms cited are Proto-Athabaskan, except where indicated otherwise. PA $*\chi^w-$, Tlingit $\gamma i \sim yi$ are 2 pl: cf. Tlingit $?i$ (2 sg. subj., obj., poss.), Eyak $?i$ 'thou' (cf. EC: Dargwa Kaitag *i*, Bsq. *hi* ~ *i*).

The proposed cognation of Cauc. $*\mu\bar{o}-n$, Bur. $*u-n$, Yen. $*?aw$, Tlingit $wa?é$, on the one hand, and ST $*n\check{a}-(\eta)$, Haida *dan*, Ath. $*\eta\bar{\theta}n$, on the other, is tentative, and only possible as the result of a hypothetical series of assimilations and/or dissimilations: $*wVn > *mVn > *\eta Vn > *nV\eta$ (with denasalization $>$ Haida *dan*), or the like.¹²⁴ The second stage ($*mVn$) is actually attested in Avar *mun*, Andi *min*, Bagwali *mē*, etc. (NCED 1014).

Pronominal possessive prefixes are found in West Caucasian, Burushaski, Yeniseian, (some) Sino-Tibetan, and Na-Dene.¹²⁵ TOPOROV ([1971]) points out the remarkable similarities between pronominal prefixes in Burushaski and Yeniseian, *e. g.*:

| | | | |
|-------------------|-------------------------|---|---|
| Burushaski (H, N) | <i>a-ríiη</i> 'my hand' | : | <i>gu-ríiη</i> 'thy hand' |
| Ket | <i>ab-λaη</i> 'my hand' | : | <i>ug-λaη</i> 'thy hand' ¹²⁶ |

Cf. ST: Bodo *aη-ni a-fa* 'my father' (*a-* < $*a\eta-$)¹²⁷ PINNOW ([1976]) compares the possessive prefixes in West Caucasian,¹²⁸ Sino-Tibetan,¹²⁹ and Na-Dene:¹³⁰

¹²⁴ The reverse process $*nV\eta > *\eta Vn > *mVn > *wVn$ is possible, but seems less likely.

¹²⁵ In some of these languages the same, or similar, prefixes are used as pronominal markers in the verb complex.

¹²⁶ The respective noun stems, *-ríiη* 'hand' and *-λaη* 'hand', are also probably cognate.

Abkhaz *sə-bla* 'my eye' (Circassian *sə-na*) : Navajo *ṣ̌i-nááʔ* 'my eye'
 Abkhaz *a-bla* 'its (nonhuman) eye' : Navajo *ʔa-nááʔ* 'eye, (any one's, someone's) eye'

Cf. Kachin *myi* or *ə-myi* 'eye'; Basque **a-dar̄* 'horn', **a-ho* 'mouth', etc.; Burmese *ǎ-mí* 'mother', Tibetan *ma*, *ʔa-ma* 'mother'; Navajo *ʔa-má* 'someone's, anyone's) mother'; Basque *ama* < **a-ma* 'mother', **a-čo* 'old woman', etc. PINNOW compares further:

Kachin *n-wa* 'thy father' : Navajo *ni-žé'é* 'thy father'
 Kachin *kə-wa* 'his father' : Navajo *ha-žé'é* 'his/her father' (4th person)¹³¹
 Meithei *mə-pa* 'his father' : Navajo *bi-žé'é* 'his/her father' (3rd person) = Hupa, Sarsi *mi-* id.

Cf. Burushaski *mu-ríiŋ* 'her hand', etc.; Bodo *bi-ni bi-fa* 'his father', etc.¹³²

C: The Dene-Caucasian Verb

The Dene-Caucasian Verbal Morphology Template

It is well known that prefixing, both nominal and verbal, is a common typological feature of almost all Dene-Caucasian languages. For genetic classification it is essential to show that at least some of the prefixed morphemes are also cognate among the various Dene-Caucasian families.

Several Dene-Caucasian languages have a polysynthetic verb template with several prefix positions before the verb stem. By itself this is just a typological similarity. Our task then is to determine whether or not the prefixes themselves (or some of them) in the various languages are cognate. Below several representative templates are outlined. Some comments as to possible cognate elements will follow in the next section.

Basque auxiliary verb template ([TRASK 1997: 106]):

| | | | | | | |
|-----|-------|-----|------|-----------|-----|-------|
| -3 | -2 | -1 | ∅ | +1 | +2 | +3 |
| ABS | tense | (n) | VERB | flag/Dat. | ERG | tense |

¹²⁷ BENEDICT ([1972: 121, note 336]).

¹²⁸ See especially CHIRIKBA ([1996: 364–366]).

¹²⁹ BENEDICT ([1972: 121f.]).

¹³⁰ See, e. g., HOIJER ([1967]).

¹³¹ 4th person «not intimately connected to the speaker» — a remote relative, member of another clan, or not Navajo. ([HOIJER 1967: 91]).

¹³² BENEDICT ([1972: 121, note 336]).

Examples: **emango dizkizut** 'I'll give them to you'

eman-go d- -i- -z- -ki- -zu- -t
give fut. (d-) pres. pl. flag 2sg.dat. 1sg.erg.

ikus-i zindudan 'I saw you'

ikus-i z- -i- -n- -du- -da- -n
SEE- perf 2sg. past (n) STEM 1s.erg. past

Basque agreement markers:¹³³

| | PRONOUN | PREFIX | SUFFIX |
|-------|-----------|-----------|--|
| 1 sg. | ni | n- | -da- > -t |
| 2 sg. | hi | h- | *-ga- > -a-, -k (masc.) *-na- > -n (fem.) |
| 1 pl. | gu | g- | -gu |
| 2 pl. | zu | z- | -zu |

Examples:

nator 'I'm coming' = **n-a-tor**
hator 'you're coming' = **h-a-tor**
dator '(s)he's coming' = **d-a-tor**

nentorren 'I was coming' = **n-e-n-torr-en**, etc.

hentorren

zetorren = **ze-torr -en**
past-VERB-past

(**ze-** when no agreement prefix is present)

but Bizkaian **e-torr-en**

dakit 'I know it' = **d-a-ki-t**, etc.

dakik 'you know it' (masc.)

dakin 'you know it' (fem.)

daki '(s)he knows it'

«In the present tense, when the absolutive is a third person, a morph *d-* occupies the absolutive slot. This is not a true agreement marker, as is commonly asserted in textbooks.»¹³⁴

¹³³ TRASK ([1997: 218]).

Thus, **nakark** 'you are carrying me'

| | | | |
|---------------------|------------|--------------|---------------------|
| n- | -a- | -kar- | -k |
| 1 st sg. | pres. | verb | 2 nd sg. |
| abs. | tense | stem | intimate male erg. |

TRASK implies that, for example, **nakark** 'you carry me' came from ***n-d-a-kar-k**

dakart 'I am carrying him'
 = **d-** **-a-** **-kar-** **-t**
 (d-) pres. verb 1st pers. erg.
 tense stem

dakarkiot 'I carry it to him'
 = **d-** **-a-** **-kar-** **-ki-** **-o-** **-t**
 (d-) pres. verb FLAG 3rd 1st pers. erg.
 tense stem sg. dat.

nabilkio 'I go to him'
 = **n-** **-a-** **-bil-** **-ki-** **-o**
 1st sg. pres. verb FLAG 3rd pers.
 abs. tense stem obj.

Caucasian verb template:

East Caucasian has apparently drifted away from the original heavily prefixing polysynthetic DC verb structure.¹³⁵ Typically only the class marker precedes the verb stem. The class prefix agrees with the subject of an intransitive verb or the patient of a transitive verb. Cf. Hunzib:¹³⁶

| | | | | | |
|----------|-----------|-------------------------------|------------|---------------|----------|
| -1 | ∅ | +1 | +2 | +3 | +4 |
| CLASS | VERB | ENDING | SUFF-1 | SUFF-2 | PARTICLE |
| MARKER | STEM | (root + deriv suff + pl suff) | | | |
| Example: | m- | -acə-k'- | -ər | '(I) cleaned' | |
| | CLASS | VERB/CAUS | ENDING | | |
| | IV | 'be clean' + caus | pret | | |

¹³⁴ TRASK ([1997: 107]).

¹³⁵ That is to say, the hypothesized original verbal structure as proposed here.

¹³⁶ VAN DEN BERG ([1995: 74]).

On the other hand West Caucasian languages have preserved the (hypothesized) original heavily prefixing DC template, *e. g.*, Kabardian:¹³⁷

| | | | | | | | | |
|-----------|------------|-------------|-------------|------------|-------------|------------|------------|------------|
| w- | -a- | -di- | -xe- | -z- | -ɣe- | -h- | -a- | -me |
| OBJ | PRON | COM | LOC | SUBJ | CAUS | VERB | TENSE | COND |
| 2sg | 3pl | with | in | 1sg | | 'enter' | past | |

Burushaski verb template ([TIKKANEN 1995]):

| | | | | | | | | | | |
|-----|----|------|------|------|---------|-----|--------|----------|-----|----|
| -4 | -3 | -2 | -1 | ∅ | +1 | +2 | +3 | +4 | +5 | +6 |
| NEG | D | PRON | CAUS | VERB | PL.SBJ. | DUR | 1sgSBJ | AP/ | SBJ | Q |
| | | | | | | | | NON-FIN/ | | |
| | | | | | | | | MODAL | | |

| | | |
|-----------|---------------------------|-------------------------------|
| Examples: | dú-ku-man-um-a | 'you (thou) were born' |
| | D-2-VERB-AP-2 | |
| | a-tú-ku-man-um-a | 'you (thou) were not born' |
| | NEG-D-2-VERB-AP-2 | |
| | du-kóo-sqalč-um-a | 'you (thou) will overtake me' |
| | D-2-VERB.dur-AP-2 | |
| | a-mí-kač-íc-a-i | 'he does not enclose us' |
| | NEG-1pl-enclose-DUR-AUX=I | |

«The [Burushaski] D-prefix or preverb is a lexicalized, often discontinuous, part of the stem's lexical entry. It occupies position -3 in the Brsk verb template.»¹³⁸

Sino-Tibetan verbal template:

Very fragmentary evidence, mainly from Classical Tibetan, shows signs of verbal prefixing.

| | | |
|---------|--------------------|------------------------|
| Tibetan | b-s-gul | 'moved, set in motion' |
| | b- -s- -gul | |
| | TENSE TRANS.STEM | |
| | (perf.) | |

¹³⁷ CATFORD ([1977: 303]).

¹³⁸ Gregory D. S. ANDERSON. *Burushaski Morphology*. (Ms.).

| | | | | |
|-----------------|--------------|--------------|-------------|-----------|
| Present | Perfect | Future | Imperative | |
| g-sod-pa | b-sad | b-sad | sod | 'to kill' |
| '-geŋ-s-pa | b-kaŋ | d-gaŋ | khon | 'to fill' |

Yeniseian (Ket) finite verb template (G. S. STAROSTIN):¹³⁹

| | | | | | | | |
|--------------------|-------------------------|---------------|--------------|------------------|------------------|---------------|--------------|
| -7 | -6 | -5 | -4 | -3 | -2 | -1 | ∅ |
| agentive (subj) | 'modifier' (lexical) | dative OBJ | pre- verb | theme (conj.) | tense/ aspect | OBJ direct | VERB stem |

Examples ([VAJDA 1998]):

| | | | |
|------------------------|--------------|----------------------------|-------------------------|
| single actant | | two actants | |
| ad d-ansibet | 'I think' | bu ad da- ba -təŋ | 'she sees me' |
| u k-ansibet | 'you think' | bu u da- ku -təŋ | 'she sees you' |
| bu d-ansibet | 'he thinks' | bu bu da- a -təŋ | 'she sees him' |
| bu da-ansibet | 'she thinks' | bu bu da- i -təŋ | 'she sees her' |
| ətn d-ansibet-n | 'we think' | bu ətn da- dəŋ -təŋ | 'she sees us' |
| əkŋ k-ansibet-n | 'I think' | bu əkŋ da- kəŋ -təŋ | 'she sees you (pl.)' |
| buŋ d-ansibet-n | 'they think' | bu buŋ da- aŋ -təŋ | 'she sees them (masc.)' |

Proto-Yeniseian (G. S. STAROSTIN):

| | | | | | | | |
|---|-----|-------------|------------------|------------------|---------------|--------------------|------|
| -5 | -4 | -3 | -2 | -1 | ∅ | +1 | +2 |
| preverb or 1 st lexical root | OBJ | core OBJ | theme (conj.) | tense/ aspect | KER (root) | plural of subj. | SUBJ |

Na-Dene verbal template ([KRAUSS 1965]):¹⁴⁰

| | | | | | |
|-------|--------|---------|------------|------|------------|
| -4 | -3 | -2 | -1 | ∅ | (+1, +2) |
| MODAL | ASPECT | PRONOUN | CLASSIFIER | STEM | (SUFFIXES) |

¹³⁹ These data were provided by George STAROSTIN at an Evolution of Human Language Workshop at the Santa Fe Institute in 2002. See also G. S. STAROSTIN ([1995a], [1995b]).

¹⁴⁰ For a much more elaborate Proto-Na-Dene template, see PINNOW ([1985, Heft 46: 5ff.]).

| | | | | | | |
|---------------------------|-------------|--------------|-------------|--------------|--------------------|------------------|
| (Tlingit): ¹⁴¹ | ?ad- | -wuu- | -si- | -tiin | 'he saw something' | |
| | PRON | TENSE | CLASS- | STEM | | |
| | OBJ. | (PERF) | IFIER | 'to see' | | |
| | | | Trans. | | | |
| | | | | | | |
| | š- | -wuu- | -d- | -si- | -tiin | 'he saw himself' |
| | PRON | TENSE | CLASS. | CLASS. | STEM | |
| | OBJ. | (PERF) | (1) | (2) | 'to see' | |
| | refl. | | Trans. | | | |

Haida verbal template ([PINNOW 1985]):

| | | | | | | | | | | | | | |
|---------------------------|-------------|-------|------------------|-----------------|-----|--------|--------|----------|---------|------------|------|---|---------|
| | -11 | -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | ∅ | (+suf.) |
| adv. | indir. | post- | pron. | pron. | mo- | OBJ | instr. | classif. | aspect/ | 'clas- | VERB | | |
| | OBJ | posi- | OBJ | SUBJ | dal | nom. | prefix | prefix | tense/ | sifier' | stem | | |
| | | tion | | | | indef. | | | mode | ʔ , | | | |
| | | | | | | pron. | | | | s , | | | |
| | | | | | | | | | | sʔ | | | |
| | | | | | | | | | | | | | |
| 1 st p.s. | díi | | díi | ʔ | | | | | | | | | |
| 2 nd p.s. | dáng | | dáng | dáng | | | | | | | | | |
| 3 rd p.s.hum. | | | 'láa, hal | hal, la, | | | | | | | | | |
| | | | han | han | | | | | | | | | |
| 3 rd p.s.nhum. | | | ∅ | ∅ | | | | | | | | | |

The so-called «classifier» (pos. -1) is an element of uncertain original function in Haida. PINNOW suggests **ʔ** and/or **s** could be «contrastive-opposite-negative» or «dynamic-active-transitive-causative-intensifier-modifier.» As Dell HYMES ([1956]) put it, «It is not surprising that SWANTON overlooked the morphological status of these elements, since their semantic value is a subtle matter in Athapaskan and Tlingit, and is perhaps fossilized in Haida.» In Tlingit their function (**s, l**) is more clearly transitivizing.

Sumerian verbal template ([THOMSEN 1984])¹⁴²

| | | | | | |
|--------|---------|--------|------------|------|------------|
| -4 | -3 | -2 | -1 | ∅ | (+1, +2) |
| MODAL | CONJUG- | CASE | PRONOMINAL | STEM | (SUFFIXES) |
| PREFIX | ATION | PREFIX | | | |
| | PREFIX | | | | |

¹⁴¹ PINNOW ([1976: 120]).¹⁴² Sumerian did not figure in the phonological section, but is cited here since the Sumerian verbal template is so similar to that of DC languages ([BENGTON 1997c]).

Examples:

| | | | | | |
|------------|-------------|-------------|--------------|--------------|------------------------------|
| mu- | -na- | -n- | -sum- | -eš | |
| CONJ | CASE | PRON | STEM | PRONSUFF | |
| | dat.3sg.an. | 3.sg.an. | 'give' | 3pl | |
| | | | | | 'They have given it to him.' |
| | | | | | |
| ha- | -mu- | -na- | -b- | -sum- | -e |
| MOD | CONJ | CASE | PRON | STEM | PRONSUFF |
| | | dat.3sg.an. | 3.sg.inan. | 'give' | 3sg |
| | | | | | 'Let him give it to him.' |

Summary: Dene-Caucasian verbal morphemes:

Pronominal affixes: Most salient is the second-person singular morpheme **K^wV*: cf. the forms in Basque, Burushaski, and Yeniseian:

Basque (verbal prefix) **h-*, (verbal suffix) **-ga- > -a-, -k* (masc.). 'thou';

Burushaski (2sg. verbal affix) *gú-/kú-, gu-, gó-/kó-, góo-/kóo-*

Yeniseian: Ket (2sg. verbal affixes) *k-, ku-*

Examples:

| | | |
|-------------|-----------------------|--------------------------|
| Basque: | h-a-tor | 'you're coming' |
| | n-a-kar-k | 'you are carrying me' |
| Burushaski: | dú-ku-man-um-a | 'you (thou) were born' |
| | go-γóy-am | 'I will give you (thee)' |
| Ket: | u k-ansibet | 'you think' |
| | bu u da-ku-təŋ | 'she sees you' |

The same languages share common 1st person markers, though this is obscured by phonetic changes: PDC 1sg. **ŋV >* Basque **n-*, Burushaski **a-/á-*, Yeniseian **ŋ >* Kott *-aŋ* (1sg. subject marker), Ket (**ŋV > *mV >*) *-ba-, -bo-* (1sg. dative marker).

Examples:

| | | |
|----------------|-----------------------|------------------------------------|
| Basque: | n-a-kar-k | 'you are carrying me' |
| | n-a-tor | 'I'm coming' |
| Burushaski: | mo ja a-phús-u | 'she tied me up' |
| | je á-yan-um | 'I fell asleep' |
| Yeniseian: Ket | d-bo-k-b-i-təŋ | 'he weds me' |
| | | (lit. 'he-to-me-this-goes-around') |
| | Kott i-g-ej-aŋ | 'I am born' |

Basque and Yeniseian have similar dative markers, Basque *-o-*, Ket «dative 2» (masc. *-o-*, fem. and inanimate *-u-*).¹⁴³ For example:

| | | |
|---------|-------------------------|--|
| Basque: | d-a-kar-ki- o -t | ‘I carry it to him’ |
| | n-a-bil-ki- o | ‘I go to him’ |
| Ket: | d- o -k-di-qa | ‘I sell him’ (lit. ‘I-to-him-me-sell’) |
| | u-k-s-i-bej | ‘she is carried by the wind’ |

There is a striking resemblance between the Yeniseian and Sumerian inanimate object markers (Ket *-b-*, Kott *b-*, *-p-*; Sumerian *-b-*). For example:

| | | | |
|------------|------|---------------------------|---|
| Yeniseian: | Ket | d-ba-t-a- b -tad | ‘he messes around with me’ (lit. ‘he-to-me-this-throws’) |
| | Kott | b -a-pi | ‘it is ripening’ |
| Sumerian: | | ha-mu-na- b -sum-e | ‘Let him give it to him.’ |

This **-b-* can be identified with the Proto-Dene-Caucasian inanimate marker **b-* (or **w-*), seen in Basque **be-/*bi-* (fossilized noun prefix), East Caucasian **w / *b* (inanimate III-class marker), West Caucasian **-ba* (inanimate class in numerals), and probably Sino-Tibetan (Tibeto-Burman) **b-* (fossilized noun prefix). (See above, under noun morphology.)

Negative morphemes:

| Proto-DC | Basque | Caucasian | Buru-shaski | Sino-Tibetan | Yeniseian | Na-Dene | Sumerian |
|-------------------|------------------|------------------|-------------|------------------|---------------------|------------------|------------|
| <i>*ʒV</i> | <i>*es / *se</i> | <i>*ʒə / *ćə</i> | | | | | |
| <i>*kV / *qV</i> | | <i>*-k-</i> | | | | <i>*-q / *-g</i> | |
| <i>*dV</i> | | <i>*dV-</i> | | <i>*tă (*dă)</i> | <i>*ʔat / *ta-</i> | <i>*dV-</i> | |
| <i>*m/bV</i> | | <i>*ma / *bV</i> | <i>*be</i> | <i>*mă(H)</i> | <i>*wə- / *-pun</i> | | /bara/ |
| <i>*H(w)V</i> | | <i>*fıwV</i> | <i>*a-</i> | | | | |
| <i>*nV</i> | | <i>*nV</i> | | | | | /nu/ |
| <i>*lV (*ɬV-)</i> | | | | | | <i>*ɬV-</i> | /la/, /li/ |

Notes: Basque: **es* > common Bsq *ez* ‘not’, *ezetz* ‘no’; *ze* (archaic and dialectal [Bizkaian]).¹⁴⁴

Caucasian: **ma* is the most widespread, usually prohibitive. **-k-* is found in both WC and EC. **ʒə / *ćə*, **dV-*, **fıwV*, are restricted to various EC languages. **nV* restricted to Tsez (*-anu*) and Udi (*nu-*). Close in form to Sumerian /nu/, but cf. Kartvelian **nu-*, Indo-European **n-*.

¹⁴³ See WERNER ([1994]), G. S. STAROSTIN ([1995a], [1995b]). Ket also has «dative 1» (masc. *-a-*, fem., inan. *-i-*). The difference between «dative 1» and «dative 2» is unclear.

¹⁴⁴ TRASK ([1997: 209]).

Burushaski: *be `no, not'; *a- (negative verbal prefix). The latter causes surdization of the following affix, implying an earlier laryngeal: *aH-du- > *a-tu-, etc.

Sino-Tibetan: Generally *mǎ(H) is negative, *tǎ (*dǎ) is prohibitive (and `stop').

Yeniseian: *wǝ- `not, is not' has been recorded in Ket, Sym, Kott, Assan, Arin, and Pumpokol. *ʔat / *ta- is restricted to Ket and Sym. *-pun = suffix `without, -less'.

Na-Dene: *-q / *-G > Haida -gaŋ, -goŋ, Tlingit -q (prohibitive); Eyak -q / -G `not'; Ath. *-q / *-G.¹⁴⁵ *dV- > Eyak *diiq*, Mattole *doo* `no, not', Navajo *dòdà*, etc.¹⁴⁶ *tV- > Tlingit *l* [ɬ] `not', Chipewyan -lè, -lé, etc.¹⁴⁷

Sumerian: /nu/ is the usual negative morpheme, but /la/, /li/ before the conjugation prefixes /ba/, /bi/, /bara/ is a «vetitive and negative» modal prefix ([THOMSEN 1984]).

Preverbs: Several Dene-Caucasian languages make use of preverbs, or elements that may go back to preverbs. Proto-Yeniseian had at least three preverbs, *p-, *k-, and *t-, for example: *p- > Kott *f-a-l-taj-aŋ* 'I got up'; *k- > Ket *d-i-k-a-qt* 'I climb the mountain'; *t- > Ket *d-ba-t-n-i-bil* 'he caught up with me'.

The third Yeniseian preverb (*t-) is reminiscent of the Burushaski *d-* preverb, mentioned above as «a lexicalized, often discontinuous, part of the stem's lexical entry» that occupies position -3 in the Burushaski verbal template.¹⁴⁸ The Yeniseian preverbs occupy position -3 in Kott, position -4 in Ket.

From the description of the Basque verb, above, recall that a morph *d-* occupies the absolutive position (-3 in the auxiliary verb template) in the present tense, and when no first or second person agreement marker is present. For example:

d-a-ki-t 'I know it' .
d-a-ki-k 'you know it' (masc.)
d-a-ki-n 'you know it' (fem.)
d-a-ki '(s)he knows it'

«This [*d-*] is not a true agreement marker, as is commonly asserted in textbooks.¹⁴⁹ ... the absolutive (prefix) agreement slot is filled by any of several different morphs when no first or second person agreement marker stands there: *d-*, *z-* (B[izkaian] zero), *l-*, *b-*, or zero. ... Broadly speaking, we

¹⁴⁵ PINNOW ([1966: 121, № 239]; [1985, Heft 45: 16, № 19.12]).

¹⁴⁶ BENGTON ([1994: 216, № 8]).

¹⁴⁷ LDC № 208.

¹⁴⁸ Gregory D. S. ANDERSON. *Burushaski Morphology*. (Ms.). Cf. BERGER ([1998: 107ff.]).

¹⁴⁹ TRASK ([1997: 107]).

find *d-* in the present, *z-* or zero in the past, *l-* in the irrealis (remote conditional) ..., *b-* in the jussive (third-person imperative) and zero in the imperative. ... these prefixes are not agreement markers at all; instead, they are ancient markers of *verbal categories*. ...I myself favor the view that the prefixes were formerly present in all finite forms but were lost when first- and second-person prefixes came to be attached in front of them ...»¹⁵⁰

It is tempting to compare here the Na-Dene «classifier» **d-*, mentioned above (Na-Dene verbal template). Proto-Athabaskan had four «classifiers», \emptyset , **d̥*, **t̥*, and **t̥d̥*.¹⁵¹ According to KRAUSS the classifiers occupied position –1 (immediately before the verb stem) in Proto-Na-Dene, and «the meanings of these classifiers are of course much more difficult to describe and compare at the present state of our knowledge than are their phonemic forms and positions.»¹⁵² The Athabaskan **d̥*- classifier is connected by KRAUSS and others to Eyak, Tlingit, and Haida *d-*. PINNOW¹⁵³ reconstructs Na-Dene **ta-* (middle marker) > Haida *ta-* (transitive), Tlingit *da-*, *d-* classifier, «middle themes», Eyak and Athabaskan *d-*, **d̥*- (classifier). When combined with other «classifiers» **d-* precedes them (producing, e. g., *-dl-*, *-dz-*, *-dž-* in Tlingit). This is reminiscent of the sequence *-d-* ... *-s-* in Burushaski, e. g., *a-t̥i-mi-s-man-u-w-á-i-a* 'has he not given birth to us?'. (in this case the Burushaski *-d-* (*-t̥i-*) and *-s-* are separated by a pronominal marker *-mi-* 'us').¹⁵⁴

Sino-Tibetan also has a prefix **d-*, described as 'directive' by WOLFENDEN and BENEDICT, e. g., Tibetan *d-god* 'to laugh', *d-pog-s* 'to measure, proportion, fix', *d-gar* 'to separate, confine, fold up', etc.¹⁵⁵ Nung *d̥*- also has a causative function, as in *sun* 'to be dry' : *d̥-sun* 'to dry or cause to dry'.

Tense / mode / aspect affixes:

A past-tense (past participle, gerund) marker in *-n-* is found in several DC families, e. g. Basque, Caucasian, Burushaski, Yeniseian, Na-Dene.¹⁵⁶ For example:

¹⁵⁰ Trask (1997: 219).

¹⁵¹ KRAUSS ([1965: 20]); KRAUSS & LEER ([1981]).

¹⁵² KRAUSS ([1965: 24]).

¹⁵³ [1985, Heft 44: 11–12].

¹⁵⁴ TIKKANEN ([1995: 491]).

¹⁵⁵ BENEDICT ([1972: 114f.]).

¹⁵⁶ DUMÉZIL ([1933: 146]) compared Basque *-(e)n* with Abkhaz *-n* and ECauc. *-n(V)* (preterit). STAROSTIN ([2002b]) reconstructs PNC **-nV* '(past) gerund or participle'. Cf. LDC № 218.

| | | |
|---------------------|----------------------|---|
| Basque | n-e-n-torr-en | 'I was coming' ¹⁵⁷ |
| Caucasian: (Hunzib) | uhu-n | 'having died' (preterit gerund) ¹⁵⁸ |
| Burushaski: | nu-ku-čī-n | 'having given it to you' ¹⁵⁹ |
| Yeniseian: (Ket) | d-o-n-tān | 'I girdled thee' (past tense) ¹⁶⁰ |
| Na-Dene: (Navajo) | 'éí sàdàà-nì? | 'That one (remote) was sitting there.' ¹⁶¹ |

The Na-Dene past marker *n* appears in Haida *-(g)an*, Tlingit *-(γ)in / -(w)un*, Navajo *-ni?*, Hupa *-neen*, Chiricahua *-ñ*, etc.¹⁶²

Yeniseian has, in fact, two different «past» markers: **n* (> Ket, Kott *n*) and **r₁* (Ket *l*, Sym *r*, Kott *l*).¹⁶³ There is some evidence that originally they marked aspects, **n* perfective and **r₁* imperfective, but in modern Ket the distinction is lexicalized.¹⁶⁴ VAJDA ([2000, 2002]) compares the Yeniseian markers *-n-*, *-l-*, (and «peg element» *-s-*) with the Tlingit «classifiers» *-l-*, *-s-*¹⁶⁵ and the Athabascan and Eyak conjugation prefixes *s-* and *n-*.¹⁶⁶ (See elsewhere in this section for other possible connections of the Na-Dene «classifiers.»)

PINNOW ([1976: 104]) compares the Tibetan perfective prefix *b-* with the Tlingit perfect prefix *-wu- / -wuu-*, as seen in some examples cited above:¹⁶⁷

| | | |
|---------|------------------------|------------------------|
| Tibetan | b-s-gul | 'moved, set in motion' |
| Tlingit | ?ad-wuu-si-tiin | 'he saw something' |

| (pronoun object) | tense prefix | transitive prefix | verb stem |
|------------------|--------------|-------------------|--------------|
| | b- | s- | -gul |
| ?ad- | wuu- | si- | -tiin |

Within Sino-Tibetan the perfective nature of **b-* is apparent only in Tibetan.¹⁶⁸ The corresponding prefix in Haida is the fossilized «resultative-per-

¹⁵⁷ «Past-tense forms with non-third-person absolutive prefixes contain an extra morph *n*, as in *ninduen* 'he/she had me', *nentorren* 'I was coming' ([TRASK 1997: 224]).

¹⁵⁸ [VAN DEN BERG 1995: 90–91]. < PNC **-nV* '(past) gerund or participle' ([STAROSTIN 2002b]).

¹⁵⁹ TIKKANEN ([1995: 492]); past absolutive ([BERGER 1998, I: 133f.]).

¹⁶⁰ G. S. STAROSTIN ([1995a], [1995b]).

¹⁶¹ HOIJER ([1967: 101]).

¹⁶² PINNOW ([1966: 148, № 292]).

¹⁶³ G. S. STAROSTIN ([1995a], [1995b]).

¹⁶⁴ WERNER ([2004: 49, note 63]).

¹⁶⁵ See, e. g., PINNOW ([1985, Heft 45: 72ff.]).

¹⁶⁶ «**s(ə)-, *gə-, *γə-, and *nə-* ... are more properly called conjugation prefixes ... each found in both perfectives and non-perfectives.» KRAUSS & LEER ([1981: 41f.]).

¹⁶⁷ There is no labial stop or nasal in Tlingit, only /w/ (see **Phonology** section).

fect» *wu-* / *w-*, as seen in Alaskan Haida *tii-w-daà* 'to be situated (a house)'.¹⁶⁹ PINNOW further compares the Athabaskan progressive prefix **go-* / *γo-*, but this seems phonologically less probable. Other DC parallels are unknown.

PINNOW¹⁷⁰ further compares several Sino-Tibetan verbal prefixes with Na-Dene, e. g., the Tibetan present (imperfect) prefix *g-* (allomorph *ʔ*) in *g-toŋ* 'to give', *ʔgeŋ-s* 'to fill', Kachin *kə-gat* 'to run, flee', etc.¹⁷¹; cf. Na-Dene **ga-*, a prefix preceding the pronominal marker and classifier (in Tlingit, Eyak, and Athabaskan: see Na-Dene template, above).¹⁷²

Transitive or Causative *-s-: Edward SAPIR, in his unpublished *Comparative Sino-Tibetan and Na-Dene Dictionary*,¹⁷³ compared the Haida verbal prefix *s-* with a similar prefix in Tibetan, both with a transitivizing function:

Sino-Tibetan: Tibetan *s-kol-ba* (transitive, imperfect), *b-s-kol* (perfect, future) 'to boil': cf. (intransitive) *khol-ba*, (perf.) *khol* 'to boil, be boiling', *khol-pa*, *khol-ma* 'boiling' (adjective)

Na-Dene: Haida *s-kal*, *s-kul* 'to boil, roast' (transitive): (cf. Athabaskan: Sarsi *-kàl* 'water boils')¹⁷⁴

An analogous combination of prefix (also transitivizing) and verb stem can be found in Burushaski:

(H, N, Y) *-s-qul-* 'to burn (trans.), roast, grill, torture', etc.: cf. (H, N) *γulú-* / *nu-qúl-* / *-γúl-*, (Y) *γól-* / *γul-* 'to burn' (intr.), 'be burned'

The transitive or causative prefix *-s-* appears in other Burushaski transitive verbs, where the verb stem without *-s-* is intransitive, and occupies the –1 position in the template. Other examples include *d-s-tal-* (*d-s-thal-*, *d-s-cal-*) 'to awaken, make awake': vs. *d-tal-* (*d²thal*) 'to wake up' (intr.), etc.¹⁷⁵

The analogous prefix in Sino-Tibetan «**s-* in verb roots is directive, causative, or intensive. It plays a prominent role in Tibetan (*s-*), Gyarung, Kachin (*śə- ~ džə-*), and Nung (*śə-*), as well as in Lepcha (in the form of palatalization) and Burmese (in the form of aspiration or surdization of the initial).»¹⁷⁶ BENEDICT gives examples such as:

¹⁶⁸ See BENEDICT ([1972: 110ff.]).

¹⁶⁹ PINNOW ([1985, Heft 45: 70]).

¹⁷⁰ PINNOW ([1976: 103–105]).

¹⁷¹ BENEDICT ([1972: 112f.]).

¹⁷² In Athabaskan the cognate **G ə-* was formerly designated a «perfective prefix,» more recently a conjugation prefix ([KRAUSS & LEER 1981: 41]).

¹⁷³ SAPIR ([1920]).

¹⁷⁴ BENGTON ([1994: 209]); BENGTON ([2002a: 53]).

¹⁷⁵ BERGER ([1998: 125–126]).

¹⁷⁶ BENEDICT ([1972: 105]).

| | | |
|------------------------------------|---|--|
| Kachin <i>dam</i> 'to stray' | : | <i>śā-dam</i> 'to lead astray' |
| Lepcha <i>nak</i> 'to be straight' | : | <i>nyak</i> (< * <i>s-nak</i>) 'to make straight' |
| Burmese <i>lwat</i> 'to be free' | : | <i>hlwat</i> (< * <i>s-lwat</i>) 'to free, release' |

For the Na-Dene family SAPIR's teacher FRANZ BOAS ([1917]) outlined what KRAUSS calls «the only usable description we have of [the Tlingit system of classifiers] in print.»¹⁷⁷ In it BOAS describes the Tlingit classifier *si* as «object classifier in transitives; causatives.» An example was given above, Tlingit *ʔad-wuu-si-tiin* 'he saw something'.

Yeniseian has an *-s-* element that is an «empty» morpheme occupying the position of object in intransitive verbs with an animate subject, thus Ket *d-aŋ-k-i-s-ta* 'I am hanging', versus *aŋ-k-i-b-ta* 'this is hanging' (where *-b-* is the inanimate object marker).¹⁷⁸ In Ket this *-s-* occurs in complementary distribution with two other variants, *-j-* and *-θ-*. So far it is difficult to say whether this Yen. **-s-* is cognate with the transitive/causative **-s-* in the other DC languages. (See also above under **Tense / mode / aspect affixes.**)

Basque may once have had the transitive/causative prefix *-s-*. TROMBETTI ([1925: 94]) suggested this, but gave only one example: common Basque *ezarri* (**e-s-aři*) 'to set (up), establish', as opposed to *jarri* (**e-aři*) 'to sit down' (also tr. 'to put').

However, Basque more clearly has a formerly productive causative prefix **-ra-*, forming oppositions such as (c) *ikasi* 'learn' : *i-ra-katsi* 'teach'; *izeki* (arc.) 'burn' : *i-ra-zeki* 'to set fire to', etc.¹⁷⁹ DUMÉZIL ([1933: 149]) compares Basque **-ra-* with the Abkhaz causative affix *-r-*.¹⁸⁰ A Sino-Tibetan prefix **r*, which may have been «directive», is attested in a few verbs such as Tibetan *r-ku-ba* 'to steal', Kachin *lā-gu* id., Nung *rā-dul* 'to roll, wrap, enwrap' (cf. Lada-khi *thul-ba* 'to roll, wind up'), etc.¹⁸¹

Summary of Dene-Caucasian Morphology

The comparative material above allows us to make out the beginnings of an overall outline of Dene-Caucasian morphology.

Noun: The DC noun had a class/gender system that is well-preserved in some languages (Caucasian, Burushaski, Yeniseian) and has left fossilized traces in the others.

¹⁷⁷ KRAUSS ([1965: 22–23]).

¹⁷⁸ G. S. STAROSTIN ([1995a], [1995b]).

¹⁷⁹ TROMBETTI ([1925: 92]); TRASK ([1997: 231]).

¹⁸⁰ Giving the example *u-s-ər-c-ən* 'je te (u-) faisais aller'.

¹⁸¹ BENEDICT ([1972: 110]).

Oblique stem markers probably existed, judging by evidence from Basque and Caucasian. At least one plural marker (in **r*) can be supported by evidence from the three western branches (Basque, Caucasian, Burushaski). Inflection for case is found in the same three families, with some cognate morphs.¹⁸² This may reflect a later (Vasco-Caucasian) stage of development.

Pronoun: There is ample evidence that the DC personal pronouns — especially first and second person — were suppletive. Pronominal elements could be prefixed to nouns and verbs.

Verb: The DC verb was polysynthetic, with perhaps as many as four prefix positions before the verb stem. The prefixes marked categories such as aspect, tense, mode, valency, and pronominal agents and/or patients. As outlined above, some of the affixes are common to three or more DC families, especially the first and second person pronominal elements, the preverb **d-*, the past-tense morph **n*, and the transitive or causative **s-*. The negative morphemes **dV* and **mV* (or **bV*) are common to three or more DC families.

There are also some commonalities in the sequential ordering of verbal affixes: typically the transitive/causative **s-* is directly before the verb stem (–1), a pronominal agent or patient in the next prefix position (–2). If both subject/agent and object/patient are referenced in the same verbal chain, the object typically precedes the subject (OSV or OVS: cf. Basque, West Caucasian, Burushaski, Yeniseian, Na-Dene, Sumerian templates above).¹⁸³ In Yeniseian (position –5)¹⁸⁴ and Na-Dene (position –5)¹⁸⁵ noun stems or (secondary) verb stems can be incorporated into the verbal chain.

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¹⁸² Yeniseian has case marking, but it seems to have little in common with the western DC families (except comitative *-aś*, *-aš*, *-oš*, as noted above). In Sino-Tibetan only vestiges remain. In Na-Dene case relations are typically expressed in the verb rather than the noun.

¹⁸³ Alone in ND Eyak allows for subjects and objects in a suffix position.

¹⁸⁴ G. S. Starostin ([1995a], [1995b]).

¹⁸⁵ PINNOW ([1985]).

Abbreviations

| | |
|------|--|
| AN | Alto Navarre = <i>Nafarroa Garaia</i> = High Navarrese (Basque dialect) |
| arc | archaic |
| B | <i>Bizkaia</i> = Biscayan (Basque dialect) |
| BN | Basse Navarre = <i>Nafarroa Beherea</i> = Low Navarrese (Basque dialect) |
| Bsq | Basque |
| c | common (Basque) = <i>Euskara Batua</i> |
| CWC | <i>Common West Caucasian</i> = [CHIRIKBA 1996] |
| DC | Dene-Caucasian = Sino-Caucasian |
| G | <i>Gipuzkoa</i> = Guipúzcoan (Basque dialect) |
| Go | [GOLLA 1964] |
| H | Hunza (Burushaski dialect) |
| KL | [KRAUSS & LEER 1981] |
| L | <i>Lapurdi</i> = Labourdin (Basque dialect) |
| LDC | « <i>Lexica Dene-Caucasica</i> » = [BLAŽEK–BENGTSON 1995] |
| N | Nagiri, Nagari (Burushaski dialect) |
| NCED | « <i>North Caucasian Etymological Dictionary</i> » = [NIKOLAYEV & STAROSTIN 1994] |
| PA | Proto-Athabaskan |
| PDC | Proto-Dene-Caucasian |
| PEA | Proto-Eyak-Athabaskan |
| PEC | Proto-East Caucasian (= Proto-Nakh-Daghestanian) |
| PNC | Proto-(North) Caucasian |
| PND | Proto-Na-Dene |
| PST | Proto-Sino-Tibetan |
| PWC | Proto-West Caucasian (= Proto-Abkhazo-Adygean) |
| PY | Proto-Yeniseian |
| R | Roncalese = <i>Erronkari</i> (Basque dialect) |
| S | southern (Basque) |
| Sal | Salazarese = <i>Saraitza</i> (Basque dialect) |
| SSEJ | « <i>Сравнительный словарь енисейских языков</i> » [« <i>Comparative Dictionary of the Ye-ni-seian Languages</i> »] = [STAROSTIN 1995] |
| ST | « <i>A Comparative Vocabulary of Five Sino-Tibetan Languages</i> » = [PEIROS & STAROSTIN 1996] |
| Y | Yasini = « <i>Werchikwar</i> » (Burushaski dialect) |
| Z | <i>Zuberoa</i> = Souletin (Basque dialect) |

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Статья посвящена одному из важнейших аспектов исторического изучения дене-кавказской (сино-кавказской) семьи языков — сравнительной морфологии. Во вводной фонетической части автор подключает к существующей системе соответствий между севернокавказскими, сино-тибетскими, бурушаски и енисейскими языками, предложенной С. А. Старостиным, аналогичный материал по баскскому языку и языкам на-дене, аргументируя тем самым их принадлежность к той же макросемье. В основной части работы приводится сопоставительный морфологический материал по всем дене-кавказским подгруппам.

Основной вывод автора сводится к тому, что прадене-кавказский язык, по видимому, обладал достаточно развитой морфологией; в области имени удается хотя бы приблизительно реконструировать систему именных классов, а также показатели косвенных основ и множественного числа; в области глагола предполагается существование сложной системы личных, временных и залоговых префиксов.