

GERBER'S 'THE DENE-KUSUNDA HYPOTHESIS': ARCHAEOLOGY AND GENEALOGY OF LINGUISTIC MACRO-FAMILIES AND ITS SIGNIFICANCE IN TRACING THE HISTORY OF HUMAN LANGUAGE

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Abstract: The Dene-Caucasian (or Sino-Caucasian) hypothesis is a relatively young proposal, though it has deep roots in several earlier theories, as far back as the 1850s, that attempted to genetically connect (North) Caucasian languages with the Yeniseian and/or Sino-Tibetan language families. Some of these postulations also included Basque, Burushaski, and the Na-Dene family in North America. In the modern era since about the 1980s the Dene-Caucasian hypothesis has continued to evolve and be refined through the application of improved methods and more precise linguistic data. This writer, who has been involved with Dene-Caucasian studies since the late 1980s, welcomes the critique and discussion of "Dene-Kusunda" (which I would call an extinct hypothesis) by Pascal Gerber (2017) in this journal. However, I must take issue with Gerber on several counts, such as misapprehension or mischaracterization of the basic texts of the Sino-Caucasian hypothesis (mainly by S.A. Starostin, published in the 1980s and 1990s), and his apparent unawareness of more recent studies published within the last two decades that should have been consulted for the critique. Finally, a sketch of the current Dene-Caucasian hypothesis, as offered by the Evolution of Human Language Project (sponsored by the Santa Fe Institute), is outlined, emphasizing lexical and grammatical evidence. It must be emphasized that the Kusunda language is not included in this version of the hypothesis.

Keywords: Dene-Caucasian, Sino-Caucasian, Dene-Kusunda, Burushaski, genetic linguistics, linguistic macrofamilies.

INTRODUCTION

In an earlier issue of this journal Pascal Gerber (2017) offered a thorough analysis of the Dene-Kusunda hypothesis, touching also on some other related proposals (Dene-Yeniseian, Dene-Caucasian, etc.). According to Gerber (p. 193), "critical reviews are crucial for the further development of any theory of language relationship. Therefore I understand this paper to be a contribution to the further development of the Dene-Yeniseian and Dene-Kusunda hypotheses." I completely agree that Dene-Kusunda and all other serious hypotheses on the genetic classification of languages should be critically reviewed, so that we may know more precisely which of these hypotheses, and which configurations of them, can be relied upon as we reconstruct the structure of the human family.

As commendable as Gerber's goal may be, some of the ways in which Gerber has proceeded in conducting the critique deserve to be examined. For example, in the introductory remarks Gerber (p. 113) states that "all the linguistic groups involved in the Dene-Kusunda hypothesis have already been associated with other language families in proposals of distant genealogical relationship, e.g. Burushaski

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with the Caucasian languages by Bouda (1954, 1964) or Bengtson (1992a, 1992b, 1997), or Kusunda with the Indo-Pacific macro-stock (Whitehouse *et al.*, 2004), which cannot stand up to critical review.” But precisely *how* none of these proposals “stand up to critical review” is not discussed in any detail.¹ What is more, Gerber does not even cite the most recent work on Burusho-Yeniseian (G. Starostin, 2010a; Bengtson, 2010; Kassian, 2010; Bengtson & Blažek, 2011; Bengtson & Blažek, 2012; Bengtson, 2014), all available before the publication of his text.

Gerber (p. 113) then continues: “The differences between the Dene-Kusunda and Dene-Caucasian hypotheses mainly lie in the different methodology and in the treatment of the detected similarities. The proponents of Dene-Caucasian stand in a long tradition of long-range comparisons which are defined by an unsatisfactory methodology of superficial lexical inspection.” Here Gerber has set up a false “strawman” dichotomy, in which it is implied that Edward Vajda and George van Driem employ standard historical linguistic methods, as opposed to Sergei Starostin, and everyone else working on the Dene-Caucasian hypothesis, who ostensibly simply compile lexical look-alikes, or otherwise depart from standard methods.

What Gerber states about Dene-Caucasian can only mean that he has not even looked seriously at what can be regarded as the founding document of the modern Sino-Caucasian hypothesis, S.A. Starostin (1984),² cited in Gerber’s list of references, in which the author laid out a detailed scheme of phonetic correspondences, involving 66 proto-phonemes, among the three proto-languages concerned, Proto-North Caucasian, Proto-Sino-Tibetan, and Proto-Yeniseian. This pioneering work was the first attempt to demonstrate what was then called the “Sino-Caucasian” hypothesis using classic Indo-Europeanist methods. As such, one cannot expect that all problems involving Sino-Caucasian phonology were already solved in Starostin (1984), any more than we could have expected Rask, Bopp or Grimm to anticipate the apparent exceptions to Indo-European sound laws solved by Verner, Grassmann, and others decades later. “We are convinced that real linguistic work on this [Dene-Sino-Caucasian] macrofamily has only just begun, and that the pioneering studies of Sergei Starostin and other mentioned scholars should merely serve as a foundation for such work” (Bengtson & G. Starostin, 2015: 30).

Gerber also disregards the fact that two decades later S.A. Starostin (2005a) completed an 81-page treatise on Sino-Caucasian phonology encompassing the same three language families as in the 1984 article, with the addition of Burushic.³ By this time the author could elaborate on the correspondences in great detail, including syllable structures and accent. In the same work (p. 81) Starostin noted that the “system of phonetic correspondences between Basque and North Caucasian had been explored by J. Bengtson. A preliminary system of phonetic correspondences between Na-Dene and North Caucasian was put forward by S. Nikolayev. I have not investigated these correspondences personally, so I shall generally adhere to the judgments proposed by these scholars.”

The works alluded to are Bengtson (1992a) and Nikolaev (1991), both of which appear in Gerber's bibliography, but apparently were not read by him, since throughout his article he continued to reiterate the false notion that Bengtson and Nikolaev operate strictly on "superficial lexical inspection." Since the initial rudimentary 1992 article I have continually refined and updated the comparative phonology, especially between Basque and North Caucasian (e.g., Bengtson, 2003, 2004, 2008a, 2018a), and culminating in the book *Basque and Its Closest Relatives* (2017 = **BCR**), which devotes some 140 pages to Euskaro-Caucasian (Basque + North Caucasian) comparative phonology, and encompasses vowel correspondences; ablaut; umlaut; nasal vowels; consonants (developments of unit phonemes and clusters); and "irregular" changes (metathesis, hapology, assimilation, dissimilation, expressive forms, contamination, blending). Does this commitment of more than a third of a 514-page book to comparative phonology (and the subject is interspersed throughout the rest of the book as well) seem to be consistent with the production of an author who only cares about superficial resemblances?

In all fairness, the misleading association of Dene-Caucasian studies with a so-called "unsatisfactory methodology" may, at least partially, be the result of this author's history. According to a recent Russian assessment of the current state and prospects of Sino-Caucasian studies (Please see **Appendix A**), Sergei Starostin, Sergei Nikolaev, and other Muscovites working on Sino-Caucasian (George Starostin, Alexei Kassian) became "guilty by association" with their "renegade" Western colleague. Other aspects of these types of misconceptions are discussed in English by Bengtson & G. Starostin (2015).

Gerber (p. 111) claims that "most proposals of so called macrofamilies or superstocks do not stand a critical review with the principles established in the prevailing comparative method (cf. Campbell/Poser 2008: 296)." Many of my colleagues would hardly agree that the cited book by Campbell and Poser should be set forth as a paragon of the comparative method: see the reviews by, e.g., G. Starostin (2009) and Blažek (2010). The latter appraisal notes that Campbell & Poser are guilty of the same offence as some other critics, namely that the works criticized have not even been studied: "It is especially alarming that Campbell does not know the works which he criticizes, e.g. those of Illič-Svityč on Nostratic or of [S.A.] Starostin on the 'recalibrated' glottochronology, but also the ideas of the scholars who are acceptable for him, e.g. of Doerfer" (Blažek 2010: 159).

Gerber (p. 192) states that "historical-comparative linguistics can only work convincingly on the basis of studious bottom-up contributions." Here I would refer to Dell Hymes, one of the most eminent anthropologists of the late twentieth century:

[S]ome linguists have wanted to work as if each level of relationship had to be fully reconstructed before a deeper level of relationship could be broached. ... I believe this approach to be demonstrable wrong. Certainly

it was not the way of working of Sapir and Swadesh who moved back and forth between the immediate and remote levels of prehistory, finding the two mutually illuminating (Hymes 1971: 265).

By this I mean to emphasize that “bottom-up” analyses should of course continue to be done, but this does not exclude the proper use of a “top-down” approach as well. The “top-down” tactic has in fact been a strategy in historical linguistics since the beginning; for example in Indo-European studies it was found that a feature found in other branches of the family (accent in Old Indic, Greek, Baltic and Slavic, thus implicitly a trait of the proto-language) could help to explain peculiar developments of consonants in Germanic (Verner’s Law).

“As a logical consequence of the present paper and its critical evaluation of the Dene-Kusunda and Dene-Yenisseian hypotheses, the burden of proof still lies on the shoulders of those who favour these hypotheses” (Gerber 2017: 193).

As one who has studied distant language relationships intensively over the past four decades, I do not find the concept of “burden of proof” to be the most useful, or even the most valid, approach to the problems of language classification. (How much “proof” is enough? What kinds of evidence constitute this “proof”?) As submitted in several of my earlier essays (*e.g.*, Bengtson, 2008b), the concept of “best explanation” is much more in harmony with the scientific tradition.

The essential point is that historical data cannot be manipulated in a laboratory to test hypotheses; instead, its probability is evaluated. To do this, the scientist is obliged to seek as much relevant data as can be discovered, testing probabilities of interpretations—a process known as IBE (inference to the best explanation). ... Inductive logic recognizes *probability* rather than simple true-or-false, seeks to include all relevant data, and is especially concerned with the strength of links between data and conclusion (Kehoe 2016: 20, 35).

I find it refreshing to turn to the linguists who work on African languages, where the working concept of best explanation is, it seems, widely understood and accepted; *e.g.*, by Paul Newman, the Chadic specialist: “The job of the comparative linguist is to provide the **best explanation** possible consistent with the facts. In proposing a classification, it is *not* necessary that the linguist ‘prove’ that the classification is absolutely certain by the presentation of conclusive evidence” (Newman 2000: 26; **bold type added**).

From Omotic specialist Richard J. Hayward: “Any claim that a given set of languages has a genetic affinity is a hypothesis. Linguists who subscribe to the [Afroasiatic] *Hypothesis* do so because they believe that it offers the **best explanation** for the linguistic facts as we know them” (Hayward 2000: 83; **bold type added**). The Moscow Nostraticist George Starostin makes the same argument in a different way:

One point that seems to constantly escape the detractors of Greenberg and his methodology is that there is only one possible way to make ‘Amerind’, ‘Indo-Pacific’, ‘Nilo-Saharan’ and other macrohypotheses founded on ‘multilateral comparison’ make a steady retreat from the sphere of both scientific and popular discourse, never to return again: that is, to present **better alternatives** to Greenberg’s classification (G. Starostin 2009: 171; **bold type added**).

‘FIRST YALE SCHOOL’ AND ‘MOSCOW SCHOOL’ PRINCIPLES OF GENETIC LINGUISTICS

My own training and practice over some five decades has drawn on two major strains of historical linguistic thought, (a) what Dell Hymes (1971) termed “the First Yale School” (Edward Sapir, *et al.*), and (b) “the Moscow School” (V.M. Illič-Svityč, *et al.*), both of which can trace their roots back to “the Prague Circle” of the 1920s and 1930s (Hymes, 1971; Bengtson, 2019). From each of these schools I have tried to glean the best methods and principles for the genetic classification of languages, which can be summarized as follows:

- II.1. Only linguistic evidence, and only specific resemblances involving both sound and meaning, are relevant to genetic classification. Resemblances in typology alone are not relevant to genetic classification.
- II.2. Multilateral comparison of languages is more effective for genetic classification than comparisons between pairs of languages.
- II.3. Evidence should be drawn from both lexicon (basic vocabulary) and grammar (morphology), and the conclusions from both should lead to the same results.
- II.4. Grammatical paradigms, or parts of paradigms, and especially suppletive paradigms, are especially convincing in genetic linguistics.
- II.5. Semantic changes must be expected, but they should be plausible, and whenever possible typologically similar changes should be cited.
- II.6. Comparative phonology is a subsidiary but important component of etymology that helps the linguist to test etymologies, to detect false cognates and distinguish loanwords from genuine cognates.
- II.7. The goal of genetic linguistics is to provide the *best explanation* possible consistent with the facts, rather than to attain some arbitrary threshold of absolute “proof.”

Apart from the principles outlined above, some practical procedural advances have recently been introduced, of which one, the “50-item ultra-stable” lexical list, originated by S.A. Starostin (2007b) and further developed by his son (G. Starostin, 2010b), is emphasized here and will be used in assessing the lexical cognates discussed below in **III.B** and **III.D**. The 50-item has at least two major uses, (a) for

lexicostatistics, as a more precise substitute for the original “Swadesh list” of the 1950s, or (b) as a guide to finding and assessing the best lexical cognates between languages or sets of languages. In other words, if one is seeking the oldest, and native (not borrowed), lexical cognates, it makes sense to look within the 50-item list.⁴ Since I do not perform lexicostatistical calculations my use of the 50-item list is restricted to purpose (b).

Regarding lexicon, one will notice that the vast majority of Gerber’s article is devoted to comparative analysis of morphology, and barely two pages (184–186) to lexicon. Let me emphasize that I appreciate Gerber’s fine-grained examination of the grammatical systems concerned, though I cannot agree with all of his conclusions. Some of Gerber’s criticisms of superficial lexical comparisons are quite appropriate, but here there is always the danger of supposing that seemingly inconsistent sound correspondences can, in and of themselves, ‘disprove’ an etymology and subsequently the larger hypothesis itself. In reality, basic lexical etymologies are primary, and it is only from these that sound correspondences can be deduced. Even in long-established families like Indo-European there are well-known basic etymologies with inconsistent correspondences, so it is not a good practice to summarily dismiss a particular lexical comparison on this basis alone.⁵ Nevertheless, I completely agree with the principle that phonetic correspondences are important and should be worked out to the best of our ability.⁶

Some brief notes about some of the lexical comparisons mentioned by Gerber (p. 186): “e.g. Proto-Yenisseian **seŋ*~Proto-Athabaskan-Eyak *-*sənt*’~Burushaski -*kin*~Kusunda *id(ə)u* ‘liver’”: I would just mention that the Burushic word usually cited in the context of PY **seŋ* and PAE *=*sənt*’ ‘liver’ is Burushic *=*sán* ‘spleen’ (the correlation ‘liver ~ spleen ~ kidney’ is not uncommon); to these add also PST *(*m*)=*sīn* ‘liver’, PNC **čwǎjmě* ‘gall, anger’, and Basque *-*sun* (in the compound **beha-sun* ‘bile, gall; hatred, bitterness’) (NCED 329; BCR A.88).⁷ On the other hand Burushic *=*kin* (or *=*ken*) ‘liver’ seems to go instead with PEC **kunHV* ‘kidney’ (Andian and Tsezian), Tulung *khiŋ* ‘bile’, Limbu *khīŋ* ‘gall bladder’ and Old Chinese **gin?* ‘kidney’ (Beijing *šan*³ = Pinyin *shèn*, etc.) (TOB); note that the modern Chinese reflexes superficially resemble the words in the first set (PY **seŋ*, etc.).

At some point I need to address the question of what Kusunda has to do with all of this. For a brief time in the 1990s I considered the possibility of the inclusion of Kusunda in Dene-Caucasian (e.g., Blažek & Bengtson, 1995), but before long I rejected the idea, mainly because Kusunda has few if any basic cognates in common with Dene-Caucasian (see III.B and III.D, below, for some of the diagnostic lexical cognates). I agree with Gerber that the grammatical evidence is also sketchy and unconvincing.

Gerber (p. 186) rather surprisingly asserts that the “few parallels between Burushaski and Yenisseian include Proto-Yenisseian **či*²-*s* ‘stone’⁸ ~ Burushaski

čhiš ‘mountain’ or Proto-Yeniseian **igə* ~ Burushaski *-ik* ‘name’,” as if these were the only lexical comparisons offered by Dene-Caucasianists. As noted above, Gerber is apparently unaware of Bengtson (2010), which features a table of fifty-three basic Burusho-Yeniseian lexical comparisons, not counting the pronouns listed earlier in the article. The table is followed by an analysis of recurrent phonetic matches, of which eighteen are supported by three or more etymologies. S.A. Starostin’s (2005a) “Sino-Caucasian Phonology,” also not mentioned by Gerber, cites many of the same parallels, and more, simultaneously outlining numerous correspondences of unit phonemes as well as suprasegmental features between Burushic, Yeniseian, and other Sino-Caucasian languages. His “Sino-Caucasian Glossary” (2005b) and Sino-Caucasian Database (TOB) also cite many more Burusho-Yeniseian cognates than are found in Bengtson (2010). By the way, the ‘name’ comparison is especially important, since ‘name’ is #10 on the 50-item list (see **III.D** below).⁹

One of the arguments used by Gerber is particularly concerning, in the light of the principle **II.1**, enumerated above, to the effect that “resemblances in *typology alone* are not relevant to genetic classification.” Gerber ostensibly agrees with this principle, saying “Typological similarities should be treated most carefully in historical-comparative linguistics, since they are entirely worthless if not supplemented by concrete material cognacy (p. 130).” Nevertheless, the following statement a few pages later seems perilously close to disregarding it:

An interesting difference concerns the lack of gender marking in Kott. Third person markers show no differentiation between masculine, feminine and neuter, as it is the case in Ket, and the conclusion of Vajda (2008: 142) that gender marking may also have been absent in Proto-Yeniseian classifies the gender marking of Ket as secondary innovation. This interpretation considerably influences the comparison of the Yeniseian agreement morphology with those of the other members of the Dene-Kusunda hypothesis. The typological similarities to Na-Dene and Kusunda, both likewise lacking gender marking, would be increased, while the affinity to Burushaski, which, like Ket, shows an elaborated nominal class differentiation throughout its grammar, would be reduced (Gerber, p. 135).

The inference that gender marking may have been absent in Proto-Yeniseian is of course not the only possible conclusion, another being that Proto-Yeniseian had gender marking that was lost in Kott. One could count many examples of languages that operate with gender marking while closely related languages totally lack such a feature, and the latter is often correlated with areal tendencies.

For instance, all of the thirty (or so) East Caucasian languages have gender (noun class) marking, except Lezgi, Agul and Udi, of the Lezgian or Lezgiic subfamily (van den Berg, 2000). The three languages cited are all spoken in areas adjacent to, or surrounded by, speakers of the Azeri language, a member of the Turkic family which is known for the absence of noun gender/class systems. In familiar Indo-European

territory, for example, German and Icelandic retain the old Germanic three-gender system which is more or less totally absent from English and Afrikaans. Both Lezgian and Germanic are relatively ‘young’ families, and yet in both of them we find wide divergences between productivity and absence of gender marking. This should be enough to show that reliance on typological similarities alone can play no role in genetic linguistics. If we are doing genetic classification only “concrete material cognacy,” as Gerber correctly states, is to be considered.

Finally, there is a concluding remark of Gerber’s with which I can heartily concur: “In this respect, it does not benefit a theory like the Dene-Yeniseian link to be ‘proven’ by statistics (cf. Nichols, 2010), which seems to me to be exactly one of these attempts to skip the time-consuming, but indispensable intermediate work between a first postulation of a language relationship and its definite acceptance or rejection.” Gerber and I agree on the age-old requirement of demonstration by means of lexical and grammatical evidence, though we may differ on the necessity of a ‘threshold of proof’ standard *vs.* a ‘best explanation’ model.

All in all, apart from the reservations expressed above, I commend Gerber for undertaking this extensive and time-consuming study with the aim of clarifying linguistic hypotheses like Dene-Yeniseian and Dene-Kusunda.

The next section outlines the current shape of the Dene-Caucasian hypothesis (sans Kusunda!), from the standpoint of the Evolution of Human Language Project.¹⁰

WESTERN DENE-CAUCASIAN AND ITS DIAGNOSTIC FEATURES

On the basis of the seven principles outlined in section II, and from collaboration with researchers from both the First Yale School and the Moscow School, under the auspices of the Evolution of Human Language Project (EHL), we have arrived at a classification of Dene-Caucasian,¹¹ which, as always, should be regarded as a provisional best explanation, subject to future modifications based on evidence.¹²

A. ‘Sino-Dene’ or ‘Eastern Dene-Caucasian’

A.1. Sino-Tibetan

A.2. Na-Dene

B. ‘Western Dene-Caucasian’

B.1. Burusho-Yeniseian = Yeniseian + Burushic¹³

B.2. Euskaro-Caucasian = North Caucasian + Basque

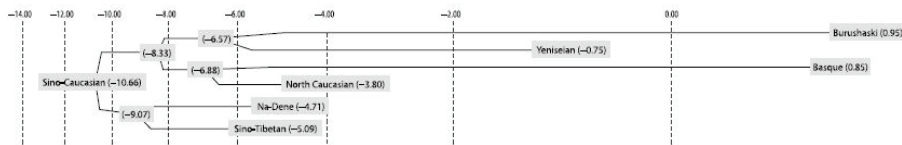


Figure 1: The EHL Model of Dene-(Sino-)Caucasian (Kassian 2010: 424).

According to this model, note that (a) it agrees with Edward Sapir's (1920) proposal a century ago, when he suggested the 'Sino-Dene' connection (Bengtson, 1994); (b) the so-called "Dene-Yeniseian" link (Ruhlen, 1998; Vajda, 2000, 2010, etc.), while partly correct in providing some additional evidence that Na-Dene and Yeniseian are "related," is taxonomically imprecise, since Na-Dene and Yeniseian each have closer relatives (Sino-Tibetan and Burushic, respectively) before they are related to each other (Bengtson, 2010; G. Starostin, 2010a, 2012); see section IV, below; (c) while "Karasuk" is a convenient designation (alternatively, "Burusho-Yeniseian"), it is not a good match to the archaeological culture of the same name.¹⁴

The first preliminary model of classification of this [Sino-Caucasian] macro-phylum based on recalibrated glottochronology was realised by George Starostin (2010, p.c.), who confirmed the so-called Karasuk hypothesis about a closer relationship between Yenisseeian and Burushaski languages, formulated by George van Driem (2001: 1186-1201) and supported by John Bengtson (2010), although the chronological level of the Karasuk culture (1500-800 BC) does not correspond with the hypothetical Yenisseeian-Burushaski unity. On the other hand, the time and area of the culture widespread from the Upper Yenisei to the Aral sea ... may be connected with ancestors of Yenisseeian before their break up ... (Blažek 2017: 71–72).

While George Starostin's glottochronological results are based only on lexical material, I believe it is important (in accord with section II, principles 3 and 4, above) to put forward grammatical evidence as well. The following outline of diagnostic characteristics of Euskaro-Caucasian and Burusho-Yeniseian will include both lines of evidence (lexical and grammatical).

III.A. Euskaro-Caucasian grammatical characteristics. These are discussed in much greater detail in my 2017 book (BCR), and are abridged here.

III.A.1. Overt marking of noun class prefixes on nouns, adjectives (>lexicalization in Basque and in some NC languages). The case of Basque **hac* 'finger, paw' vs. **be=hac* 'thumb, toe'¹⁵ is a clear example of the original separability of the class prefix from noun stem, in this case a stem cognate with Avar *k^wač* 'paw', etc. < PEC **kwăčě* (NCED 704; BCR A.68). With the same prefix we have Basque **be=lari* 'ear', cognate with Batsbi *lark* 'ear' < Proto-Nakh **la-ri-k*, etc. < PNC **lěHi* 'ear' + **-r-* [oblique stem marker] (NCED 756; BCR A.7). In a very few cases Basque and individual NC languages display the same combinations of prefix+stem: Basque **behe* 'ground, lower part, bottom' < **b=ehe* ~ Tindi *b=eχ:i* 'bottom, buttock', Karata *r=eχ:i* 'lower part, below'; Avar *boχ*: 'leg' (historically *b=oχ*:), etc. < PEC **w=ăχA* / **r=ăχA* 'bottom, lower part' (with changing class prefixes) (NCED 423; BCR I.14); Basque **buštel* 'rotten' < **b=ušte-l* ~ Udi *b=aš^fa(y)* 'rotten' (with lexicalized class prefix) < PNC **=VršĒ* 'to rot, ferment' (NCED 1034; BCR R.45). These examples exemplify the Basque fossilized prefix

*b=/*be=/*bi=, probably related to the NC marker of III-class singular reconstructed as *b= (Deeters, 1963) or *w=/*b= (S.A. Starostin, 2002); at least two other Basque fossilized class markers can be detected: *e=/*i= and *o=/*u=, each with probable NC counterparts (see BCR, pp. 58–71).

III.A.2. A system of multiple oblique stem markers, which occur between noun stems and oblique case markers, and in compound nouns. Good examples of productive oblique stem markers (emphasized here in **bold type**) can be found in the Tsezian language Hunzib, e.g., *ože* ‘boy’: genitive *ož-dī-s* ‘boy’s’; *koč* ‘bush’: gen. *koč-lī-s*; *k’o* ‘squirrel’: gen. *k’o-ro-s*; *maru* ‘nose’: gen. *mar-a-s* (van den Berg 1995: 37–38). In Basque some traces of oblique stem markers remain, for example in the case declension of *śu (EB *su*) ‘fire’: in some southern dialects there are [locative] *su-ta-n*, [allative] *su-ta-ra*, etc., in western dialects (Bizkaian, Gipuzkoan) there is a double marker **-r-t-**, [locative] *su-r-ta-n*, [allative] *su-r-ta-ra*, respectively. The same elements recur in compound nouns like (B, BN, Sal) *su-t-argi* ‘firelight’,¹⁶ (B) *su-r-t-opil* ‘bread baked in embers’, besides (B, Bzt, R) *su-t-opil*, (B, G, AN) *su-opil*, and other variants (see OEH: SUTOPIL). I have proposed that the Basque element *-r- is cognate with the NC oblique stem marker *-r-, evident, e.g., in Chechen *c’e* ‘fire’ / [genitive] *c’e-r-an*, in compounds like *c’e-r-kēma* ‘steamboat’ (lit., ‘fire-boat’); and in Archi *oc* ‘fire’ / [locative] *c’e-re-q*⁵ ‘in (the) fire’. The Basque element *-t- occurs elsewhere in case forms like *mendi-e-ta-n* [locative plural] ‘in/on the mountains’; *ni-ta-z* ‘(done) by me’ [instrumental singular]; and frequently in compound words, so that the original grammatical relation between Basque *hobi* ‘grave, tomb’ and *hobitegi* ‘graveyard’ (analyzed as **hobi-t-hegi*) is analogous to that of Lak *haw* ‘grave, tomb’ and *ha-t-a-lu* ‘graveyard’, i.e., both cases reflect an underlying coronal stem marker. (Cf. also Kryz *χu-d-il* ‘tombstone’).¹⁷

Conventional Vasconists, who dismiss the possibility of external genetic comparisons, are completely at a loss to explain the Basque elements *-r(a)- and *-t(a)-. For example, Trask (1997: 94) states that “an *-r-* appears to separate vowels in hiatus in non-plural [oblique] forms,” but where this /r/ comes from is not explained. Likewise, Hualde (1991: 83–84) accounts for the *-t- element in compound nouns synchronically as a purely phonological rule (“If the final consonant after Truncation is an oral stop, it is changed to /t/”), which works for some of the cases, but obviously not for cases such as (EB) *su-t-argi* ‘firelight’, where the stem *śu ‘fire’ lacks a final consonant. It also does not account for examples such as (G) *be-t-erri* ‘lowland’, (EB) *be-t-zain* ‘cowherd’, where the base forms do not have oral stops but the aspirate /h/: **behe* ‘low’, **behi* ‘cow’, respectively. It also does not account for the forms that have *-r- instead of *-t-, e.g. **oi=han* ‘forest’ + **bide* ‘road’ > (EB) *oiha-r-bide* ‘forest road’.

III.A.3. Diminutive suffixes *-t’o, *-t’a: Basque **mis-to* ‘sting (of bee), bite (of snake)’; **laš-to* ‘straw’, **ħorś-to* ‘leaf’; **tor-to* ‘bud’; **neś-ka-to* ‘little girl’; **mar-sus-ta* ‘blackberry, mulberry’ ~ NC: Bezhta *papa-t’o* ‘butterfly’,

kuku-t'o 'cuckoo', *q'asq'a-t'o* 'throat'; Tindi *miš-ta*, *niš-ta* 'gadfly, dragonfly', *miža-tu* 'beard'; Khinalug *k'unġ'u-t'a* 'weasel, marten' (BCR, p. 55); **Diminutive / expressive element** *č^(l)-, *-č^(l)-, *-č^(l)V (prefix, infix, suffix): **Basque** **hagin* 'tooth' > (dial.) *txagin* /čagin/ 'tooth' (child speech); **labu-r* 'short' > (dial.) *txabur*/čabur/; **Hangio* '(fenced-in) pasture' > (dial.) *xangio* /šangio/;¹⁸ **i=thinti* 'firebrand, ember' > (dial.) *itxindi*, *itxendi* id.; **seri* 'pig' > (dial.) {zarrichoa} '(the) suckling pig', EB *amatxo* 'grandmother' or 'mommy', *umetxo* 'baby' etc.¹⁹ ~ **PNC** expressive preverb *č- (~ unglottalized *č-), e.g. Lezgi *č-ux'a-* 'to scratch, scrape', Tabasaran *č-u=χ-* 'to comb', Agul *ž-irχ-* id. < PNC **HērχwA* / **HěwχwA* (NCED 562); or Hunzib *č'-ixu* 'far', Bezhta *c'-iχo* id. < PEC *=*ārχV* (NCED 269: cf. Rutul *χiri-di* 'far' ~ Basque [A, B] *urru-ti* 'far' < **hurū-ti*); as a noun suffix, possibly, PNC **kVkwV* 'flower' > Abkhaz *a-k'ak'a-č* id.; PNC **qwVrVqV* 'frog' > Khwarshi *q'urq'-ač* 'lizard' (BCR 56–57).

III.A.4: In verbs, a **participial formation in *-TV**, with precise matches between, e.g., Archi and Basque (BCR 415–421):²⁰

- Archi *holo-t:u-* 'liquid' ~ Basque **hur-tu* 'melted, watered, poured' (BCR **E.1, G.10**)
- Archi *hiba-t:u-* 'good' ~ Basque **hobe-tu* 'made better, improved' (BCR **R.11**)
- Archi *guli-t:u-* 'hidden, secret' (Tsakhur *a=g'al-* 'to get lost') ~ Basque **gal-tu* 'lost, disappeared' (BCR **V.7**)
- Archi *q'^{waq}'^{war}-t:u-* 'narrow' (reduplicated from PEC **q̄warHV* 'narrow, thin') ~ Basque **garhi-tu* 'made (oneself) thin, slimmed down' (BCR **R.59**)

III.A.5: In verbs, a **conjugation class with suffix *-n** (see BCR 429–435; selected NC cognates are cited below):

- Basque **e=isa-n* 'to be' ~ Circassian *-sə-n* 'to sit' < PNC *=*äšA(n)* 'to sit, stay' (BCR **V.38**)
- Basque **e=go-n* 'to be, stay, live, wait'²¹ ~ Agul (dial.) *ilg^{wan}-* 'to stay' < PEC *=*argwVn* 'to stay' (BCR **V.39**)
- Basque (northern) **e=augi-n* 'to come' ~ Lak =*uq'a-n* 'to go, walk away; take away' < PNC *=*HuqŪn* 'to go, come' (BCR **V.41**)
- Basque **e=oha-n* 'to go; go away; go away from, leave' ~ Karata =*oʔan-* 'to go' < PNC *=*VʔwV-n* id. (BCR **V.44**)
- Basque **é=ka-n* / **e=gán* 'to go up, ascend, climb'²² ~ Avar =*aq:n-* 'to stand up' < PNC *=*HiqĒ(n)* 'to rise, grow' (BCR **V.46**)
- Basque **e=sagu-n* 'to know, get to know, recognize', etc. ~ Tindic *'ix:ĩ-* 'to search' < PEC **čEnχV(n)* 'to search, ask' (BCR **V.50**)
- Basque **e=hu-n* 'to weave' ~ Lak =*uχ^š:i-n* 'to spin'; Dargwa =*umχ-es* 'to plait, weave' < PEC *=*irχwVn* 'to knit, weave, spin' (BCR **V.54**)

III.A.6: In pronouns, some precise homologies:

- a. Basque **ni* ‘I’ / **hi* ‘thou’ ~ Dargwa *nu* ‘I’ / *hu* ‘thou’ < PEC **nĭ* ‘I’ / **bWV* ‘thou’²³ (NCED 483, 855)
- b. Basque **su*, EB *zu* (formerly) ‘you’ (pl.), now (polite) ‘you’ (sg.) ~ Chechen *šu*, Lak *zu*, Abkhaz *šá-rá* ‘you’ (pl.) < PNC **žwě* ‘you’ (2d person pl.) (NCED 1086)
- c. Basque **no-* [interrogative stem], with some precise parallel formations: Basque **no-n* ‘where?’ ~ Tabasaran *naʔan* ‘where?’; Basque **no-ła(-s)* ‘how?’ ~ Andi *inna-l* ‘when?’, *inu-l* ‘where?’ (NCED 493)
- d. Basque **se-* [interrogative stem]: EB *ze*, *zer* ‘what?’, *zein* ‘which?’ ~ Dargwa *se*, Lak *s:a-*, Ingush *se*, Adyge *sə-d(-ā)* ‘what?’, etc. < PNC **sāy* [interrogative pronoun] ‘what’ (NCED 958)
- e. Basque **hau-* / [oblique] **ho-n-* ‘this (proximal)’: EB *hau* ‘this, this one’, northern Basque *hau-r* id. ~ Chechen *ha-ra* ‘this’ (near deixis), Avar *he-*, *ha-* ‘this’, Lezgi *ha* ‘that (already mentioned)’, etc. < PEC **hǎ* [emphatic demonstrative] (NCED 486)
- f. Basque **ho-ri* / [oblique] **ho-ř-* ‘that (mesial)’: **hu-ra* ‘that (distal)’ ~ Karata *ho-* ‘that’, Budukh *u-d* ‘that’, *wo-rə-n* ‘above, there (above the speaker)’, Khinalug *hu*, *hǎ* ‘that’, *wa* ‘there (above the speaker)’, Ubykh *wa-* ‘that’, etc. < PNC **hu* ~ **ʔu* [demonstrative pronoun] ‘that’ (NCED 222)
- g. Basque **ho-na* ‘here, now’: (B) *ona* ‘now, here, hither’, (BN, L) *huna*, *hunat* ‘here, hither’ ~ Dargwa *hanna* ‘now’; Chechen *hin-ca* ‘now’, Hunzib *hin-čo-d* ‘today’, etc. < PNC **h[ä]nV* ‘now’ (NCED 487)
- h. Basque **be-r-* [intensive / reflexive]: (EB) *ber-* ‘same, self’, *bera* ‘the same’, *bere* ‘his/her/its own’, (Z) *bé(r)a* ‘the same’, (B, G) *bera* ‘he/she’, *berak* ‘they’, etc. ~ Hunzib *bə-d* (class 1/3/5) / *bo-du* (class 2/4) ‘this (near speaker)’, *bə-l* (class 1/3/5) / *bo-lu* (class 2/4) ‘that (near hearer)’: Abkhaz *a-b-ri* ‘this, this one’, *a-b-ni* ‘that’, *a-ba-r* ‘here!, behold!’, *u-b-ri* ‘this one’, etc. < PNC **bV* [emphatic deictic particle] (NCED 321)

III.B. Some Euskaro-Caucasian **basic lexical isoglosses**. “Stability ranks” are according to the 50-item list of “ultra-stable” lexical meanings (see S.A. Starostin, 2007b; G. Starostin, 2010b). Several other (pronominal) items (‘I/me, thou, who’) were cited above (III.A.6) and are even more historically stable than the items below (I/ME = #3, THOU = #5, WHO = #6).

1. PNC **čǎyř* / [oblique] **čǎy-* ‘fire’ (→ Nakh **če*, Avaro-Andian **čaʔi*, Lak *c’u*; West Caucasian **mA=č’a* with prefixation) = Basque **šu* ‘fire’ (~ **i=ču*, attested in Araban {isçuarri} ‘flint’) (NCED 354; BCR F.1).²⁴ [FIRE = stability rank #7.]
2. PNC **=iwǎĚ* ‘to die, kill’ (→ Nakh **=aL-* ‘to die’ > Chechen *=al-*; Avar-

Andian $*=i\lambda-$ > Karata $=il\vartheta-$ id.; West Caucasian $*\lambda\partial-$ / $*\lambda a-$ 'to kill, die')²⁵ = Basque $*hil$ 'to die, kill' (NCED 661; BCR **R.19**).²⁶ [DIE = stability rank #13.]

3. PNC $*leHe$ 'ear' (→ Nakh $*la$; Dargwa *lihi*; West Caucasian $*La-$) = Basque $*=la-$ in $*be=la-ri$ 'ear' (NCED 756; BCR **A.7**). [EAR = stability rank #32.]
4. PNC $*k\check{w}\check{h}\check{n}hV$ 'smoke' (→ Avar-Andian $*k:w\check{h}i$ 'smoke', Lak $k'u\check{w}$ 'soot', West-Caucasian $*b^vV$ 'smoke') = Basque $*(e)k\check{e}$ 'smoke' (NCED 738; BCR **F.2**).²⁷ [SMOKE = stability rank #36.]
5. PNC $*\check{z}w\check{h}\check{a}r\check{i}$ / $*\check{z}w\check{a}h\check{r}\check{i}$ 'star' (→ Nakh $*\check{t}hari$, Avar-Andian $*\check{c}:w\check{a}rhi$, Northwest Caucasian $*\check{c}^w a$, etc.) = Basque $*i=s\check{a}r$ 'star' (with fossilized prefix $*i=$) (NCED 1098; BCR **G.21**). [STAR = stability rank #40.]

The four Basque nouns cited here all exhibit the fossilized class prefixes discussed above (**III.A.1**), two of them, (3) and (5), in all dialects (EB *belarri* 'ear' and *izar* 'star'), and the other two, (1) and (4), only in some dialects (EB *su* / Araban *itsu* 'fire'; EB *ke* 'smoke' but *eke* or *ike* in a chain of dialects mainly along the Pyrenees).²⁸ Examples (1) and (4) also provide evidence of the original separability of class prefixes, like $*hac$ and $*be=hac$, discussed above (**III.A.1**). Sets (1) and (3) bear witness to Euskaro-Caucasian oblique stem markers (**III.A.2**), with Basque $*be=la-ri$ 'ear' having a formation parallel to Chechen-Ingush *lerg*, Batsbi *lark* 'ear' < Proto-Nakh $*la-ri-k$, made up of the stem $*la$ 'ear' + oblique stem marker $*-ri-$ + diminutive suffix $*-k$.

III.C. Burusho-Yeniseian grammatical characteristics. I have catalogued these in some detail in earlier works, especially Bengtson (2010, 2014). The summary here is abridged.

III.C.1. Pronominal stem suppletion in both first and second person singular, with material correspondences. Burushic 1ps $*\acute{z}a$ [direct] / $*a-$ [oblique]; Yeniseian 1ps $*\acute{z}a\check{z}$ [direct] / $*b-$, $*\acute{z}ab-$, $*-i\eta$ [oblique]; Burushic 2ps $*u-n$ [direct] / $*gu-$, $*go-$ [oblique]; Yeniseian 2ps $*\acute{z}aw$, $*\acute{z}u$ [direct] / $*KV-$ / $*\acute{z}VK-$ [oblique].²⁹

III.C.2. Demonstrative pronouns with the base $*k^{(h)}i-$: Burushic (Y) *khin*, *khené* 'this' [hm-class], *khit*, *kho*, *akhó* 'here', (*a*)*khólum* 'hence', *akhíta*, *kho*, *akhó(la)* 'hither';³⁰ Yeniseian (Ket) *kīdā* 'this [m.]' / *kida*⁶ 'this' [f., n.], *kīśēŋ* 'here', *kīńí* 'hence', *kīńiŋə*¹, *kīńiŋə*⁵ 'hither'.

III.C.3. Interrogative pronouns made up of the elements $*bV$ + $*sV$: Burushic: (Y) *bésa*, *bése* 'why', (H, N) *bésan* 'what, which', *bése* 'why'; Yeniseian: Ket *biśēŋ* / *biśaŋ* (<*biśa:ŋ*³) 'where', *bi-śśe* 'who' [masc.], *be-śa* 'who' [fem.].

III.C.4. Interrogative pronouns with the element $*an-$: Burushic (Y) *áne* 'where', *ána* 'whither'; Yeniseian: Ket *anet*, *ana* 'who', *anun* 'how much', *ań* 'why', *Yuganet* 'who'.

III.C.5. Inanimate plurals with a velar nasal /ŋ/ suffix. In the following

examples the Burushic words are inanimate [IV or y class] and the Ket words are inanimate [III class]: NAME: Burushic (Y) =*yék* ‘name’: pl. =*yékiŋ*, =*yékićiŋ*; Yeniseian (Ket) *ī* ‘name’: pl. *ε?η*, (Kott) *ix*, *ix* ‘name’: pl. *īkŋ*, *ekŋ*, *eäkŋ*; ROOT: Burushic (Y) *ceréš* ‘root’: pl. *ceréhaŋ*; Yeniseian (Ket) *ti:ri* ‘root’: pl. *tīreŋ* (PY **čřž*- ‘root’).

III.D. Some Burusho-Yeniseian **basic lexical isoglosses**. As with **III.B**, “Stability ranks” are according to the 50-item list of “ultra-stable” lexical meanings (see S.A. Starostin, 2007b; G. Starostin, 2010b). Several other (pronominal) items (‘I/me, thou, who’) were cited above (**III.C.1** – **III.C.4**) and are even more stable than the items below (I/ME = #3, THOU = #5, WHO = #6).

1. Burushic *=*yek* ‘name’ (→ Y =*yek*, H, N =*ik* id.) = Yeniseian **ʔig* ‘name’ (→ Ket, Yug *ī*, Kott *ix*, etc.). [NAME = stability rank #10.]
2. Burushic *=*reŋ* (S.A. Starostin) or *=*rin* (Holst) ‘hand’³¹ = Yeniseian **ʔaʔŋ* ‘hand’ (→ Ket *íaʔŋ*, *íaŋ*-at, etc.). [HAND = stability rank #11.]
3. Burushic **qaq* (→ Y *qaq*- ‘dry, hungry’, H, N *qaq* ‘hungry’) = Yeniseian **qV[G]i-* ‘dry’ (→ Kott *xújga*, Arin *qoija*, etc.). [DRY = stability rank #24.]
4. Burushic **ši* / **ši* / **šu* ‘to eat’ (→ Y =*ši-* / =*šu-*, H, N =*śé-* / =*šu-*)³² = Yeniseian **sī-* ‘to eat’ (→ Ket *sī-* id., Kott *ši-g* ‘meal’, etc.).³³ [EAT = stability rank #25.]
5. Burushic **tiŋ*, **tiŋ-án* ‘egg’³⁴ = Yeniseian **yeʔŋ* ‘egg’, **ʔoʔŋ* ‘roe’ (→ Yug *eŋ* ‘egg’, *əŋŋiŋ*⁵ ‘roe’, Kott d’anan ‘roe’, Pumpokol *tańáŋ* ‘egg’, etc.). [EGG = stability rank #47.]³⁵

SUMMARY, IN LIEU OF CONCLUSION

Edward Vajda (2012: 149) offers this conciliatory statement in his discussion with George Starostin:

To summarize, nothing in my linguistic results so far contradicts what has been published so far by Sino-Caucasianists, D[ene-]Y[eniseian] may yet turn out to be a valid taxon, or it may not (I remain non-committal on this point). If not, I suspect (for the time being on purely non-linguistic grounds, which cannot be conclusive) that Sino-Dine [sic]³⁶ might instead be correct, and Yeniseian related to it as an outer branch, with any further DC relations being more distant still. But this is nothing more than speculation that follows human DNA patterns, and is not based on the necessary linguistic analysis. For the present, Dene-Yeniseian, Yeniseian-Burushaski and Sino-Dene are best each regarded as possible until such time as strong linguistic evidence is found to decide between them. I do not believe that lexicostatistic calculations alone can resolve such issues of language taxonomy. Because shared “quirky” morphological innovations can be of great value to subgrouping in a family, it is worth taking the trouble of looking for them

— even among the thorniest templatic morphologies.

On the topic of “quirky morphological innovations,” see above (III.A.1 – III.A.6, and III.C.1 – III.C.5). I suggest that everyone interested in this discussion read Vajda’s complete article (along with G. Starostin’s).³⁷ As stated above (II.1–II.7), I agree strongly with Vajda’s assertion about the importance of shared grammatical innovations in genetic linguistics.

“Dene-Caucasian” has been repeatedly “discovered” by several scholars from several starting points, each seeing only a part of the whole, as in the fable of the blind men discovering the elephant. Recent advances in historical linguistics allow us to view the complete ‘elephant’ more and more clearly. We can easily designate Dene-Caucasian as a PT (“probable truth”) hypothesis, in Lamb’s (1959) parlance, to distinguish it from ER (“established relationship”).

Another taxonomic principle from Lamb is instructive here:

Uniformity III. Two languages, A and B, should not be combined in a group which excludes another language, C, unless A and B are (probably) more closely related to each other than either is to C. That is, the discovery of a relationship, even if it can be well established, is not sufficient grounds for classifying groups together. One must also have evidence that, at the level in question, the two groups are unrelated to others being excluded from the larger grouping. One must not assume that other relationships do not exist merely because no one has discovered them (Lamb 1959: 38).

In other words, it is a taxonomic error if we do not consider the evidence relating “A” (Na-Dene) and “B” (Yeniseian), not only to each other, but also to “C” (Sino-Tibetan), “D” (Caucasian), “E” (Burushic), “F” (Basque), and possibly others.

As anthropologists our task is to find the best explanation for linguistic diversification and taxonomy in Eurasia, the Americas and the rest of the world. A major part of this “best explanation” is the Dene-Caucasian hypothesis, a model that comprehensively explains and accounts for the incomplete glimpses of linguistic classification made by various scholars throughout the past century. The goal is not to assemble a series of discrete (often binary) relationships, but to put forth a model that integrates “relationships” in the most comprehensive classification possible.³⁸ As a “PT” classification Dene-Caucasian is understood to be not an ending point, but “a basis from which closer and closer approximations to the true picture could be made.”

Appendix -A

From the Russian book *Origins of linguistic diversity*
(G.S. Starostin 2015: 339–41)³⁹

The only Western linguist who continues to deal with this [Sino-Caucasian] issue today is our American colleague John Bengtson. From a formal point of view, Bengtson is an amateur linguist who does not have university affiliation and therefore is not cited in official linguistic circles. His early works were indeed amateurish in nature and were carried out more in the Greenberg paradigm than in that of Illič-Svityč or Starostin (which is quite natural for an American linguist), but over time he managed to master the basics of serious macrocomparativism, and the articles which he has written since the end of the 1990 up to this day make a genuinely tangible contribution to the development of this discipline. In particular, Bengtson is much concerned with the issues of comparative grammar of Sino-Caucasian languages, in which Starostin happened to be less interested (he focused primarily on comparative phonetics and vocabulary).⁴⁰

[E. Ya. Satanovsky] So it's still not a completely hopeless task –to “infect” some western linguists, even amateur ones, with an interest in such bold hypotheses?

G.S.: To “infect” anyone from outside is impossible. John Bengtson himself was interested in the issues of distant kinship of languages long before he met and became acquainted with Starostin and his works. What can be done realistically (though not with everyone) is to adjust the working methodology and bring it closer to strict scientific standards. In America the only known “macrocomparativist” has long remained, for many scholars, Greenberg, and who, with his “mass comparison,” still remains; I have already said more than once that we respect Greenberg, but that we consider “mass comparison” to be at best a preliminary eye-examination procedure possessing by no measure any demonstrable strength. However, due to the fact that the aforementioned Bengtson was under the strong influence of Greenberg for some time, the Sino-Caucasian hypothesis in America among those few specialists who knew at least something about it (or, shall we say, at least the name) also automatically became considered a product of “Greenbergism” –and if so, then, of course, it does not deserve serious attention.⁴¹

In order to dispel this myth, one has to make such incredible efforts that it is not even clear whether the game is worth the candle: so few people are involved in the Sino-Caucasian hypothesis that it is impossible to spend energy simultaneously on the research and educational aspect. In particular, Sergey Anatolyevich [Starostin] absolutely unambiguously chose his research activity –he could from time to time give a lecture on Sino-Caucasian studies at some Western university, but this topic is so complex that with one lecture, of course, it is impossible to truly enlighten anyone.

In addition, this is not the most thankful occupation –to promote the virtues of a theory that is in such a “raw” state as the Sino-Caucasian. If we take, say, the 1300 etymologies collected by Starostin, then almost every one of them can be presented with claims of varying degrees of seriousness. Somewhere in one of the branches the phonetic correspondences are

not fully observed, somewhere the spread of meanings seems too wide and unreasonable, somewhere the representation is too weak in descendant languages, etc., etc. In total, in my opinion, there is enough material to consider the hypothesis successful, but criticism usually goes to the level of individual etymologies, and here the hypothesis is very vulnerable.

APPENDIX –B

Abbreviations

AN	Alto Navarro = High Navarrese (Basque dialect)
arc	Archaic or obsolete form
B	Bizkaian = Biscayan (Basque dialect)
Bzt	Baztanese (Basque dialect)
BN	Bas-navarrais = Low Navarrese (Basque dialect)
EB	euskarabatua (standard [unified] Basque)
EHL	Evolution of Human Language Project http://ehl.santafe.edu/
G	Gipuzkoan (Basque dialect)
H	Hunza (Burushic dialect)
L	Lapurdian = Labourdin (Basque dialect)
N	Nager (Nagar, Nagir: Burushic dialect)
NC	North Caucasian
ND	Na-Dene
PEC	Proto-East Caucasian (see NCED)
PNC	Proto-North Caucasian (see NCED)
PST	Proto-Sino-Tibetan
PTB	Proto-Tibeto-Burman
PWC	Proto-West Caucasian
PY	Proto-Yeniseian (S.A. Starostin, 1982)
R	Roncalese (Basque dialect)
Sal	Salazarese (Basque dialect)
ST	Sino-Tibetan
TB	Tibeto-Burman
TOB	Tower of Babel http://starling.rinet.ru/
Y	Yasin (Burushic dialect)
Z	Zuberoan = Souletin (Basque dialect)

Notes

1. The Kusunda–Indo-Pacific theory will be disregarded in this treatise, as opening up a whole different can of worms in which this writer has played no direct part. Instead I shall concentrate mainly on Burusho-Yeniseian, as a hypothesis relevant to the Indosphere, and its putative deeper taxon, Dene-Caucasian.
2. Note also the English translation by William Baxter, S.A. Starostin 1991. S.A. Starostin (1982) was an even earlier work that outlined the comparative phonology of Proto-Yeniseian and Proto-North Caucasian, along with numerous cognate sets that confirm the correspondences.
3. I prefer the convenient term “Burushic” to designate the small family made up of the various Burushaski / Khajuna / Mišāski / Werchikwar dialects.

4. “None of the 50 items — not even personal pronouns — are 100% immune to borrowing, but, in general, this ‘core’ is much more resilient to being replaced by words of foreign origin than even the remaining half of the Swadesh wordlist” (G. Starostin 2010: 110).
5. “[I]t would probably not be a stretch to say that at least half of all accepted Indo-European etymologies suffer from ‘non-corresponding sound correspondences’ in at least one branch, and that’s putting it rather mildly” (G. Starostin 2009: 166).
6. As noted in section I, in my large book about Basque (BCR, 2017) some 140 pages are devoted to comparative phonology and sound correspondences. Gerber (p. 185) faults my 1997 article in *Georgica*, comparing Burushaski and North Caucasian, as having an “inadequate approach,” though he fails to mention that a small section of that article (p. 92) deals with some of the most important sound correspondences of Dene-Caucasian: those of the lateral affricates.
7. E.g., (a) PTB *r-pay ‘spleen’ (Matisoff) = PST *phia ‘spleen’ (Peiros & Starostin) = PST *phe ‘spleen’ (TOB) → Old Chinese *bhe ‘spleen’; Kachin (Jingpo) khum-pai3 ‘spleen’; Thankur =pəy ‘liver’ (Peiros & Starostin 1996: I, 72, #258; Matisoff 2003: 221; TOB); (b) Old Indic vṛkká ‘kidneys’ → Pali vakka ‘kidney’, ‘Welsh’ Romani bukō ‘liver’, ‘German’ Romani pukko ‘liver, lungs, spleen, kidney’, Bengali buk ‘heart, courage, chest’, Sinhalese bokka ‘belly’, pl. boku ‘intestines’, etc. (Turner 1962–66, #12064).
8. Besides the Burushic and Yeniseian forms, a multilateral view includes these other putative cognates: Basque *či(n)čV ‘small stone, pebble; hail, sleet’ (BCR D.17); PEC *čăčwV ‘small stone’ (NCED 382); Hatti ziš ‘mountain’ (Kassian 2010: 368); Na-Dene: Eyak čič ‘beach, sand bank, gravel bank, sand, gravel’ (Blažek & Bengtson 1995: 28, #114). [But note the comments by S.A. Starostin, doubting the unity of the etymology as described here: TOB, Sino-Caucasian Etymology *čăčwV ‘stone’. If the segmentation of the PY form is *či²-s, as quoted by Gerber, with *-s as a singulative suffix, Starostin suggests that a comparison with PNC *fiōmVčō ‘stone’ (Avar čuc’, etc.) may be better. For the latter cf. Basque *fiac ‘rock, stone; mountain with a bare rocky top’ (BCR D.15).]
9. Note that the classic Indo-European word for ‘name’ is extraordinarily stable and has been preserved in almost all Indo-European languages, except in Lithuanian *vardas* ‘name, title’, Latvian *vārds* ‘name; word, speech; promise’, cognate with English word, Latin *verbum*, etc. (Buck 18.26, 18.28); but Old Prussian retained *emmens* ‘name’.
10. The Evolution of Human Language Project (EHL) was founded in 2001 by Nobel Laureate Murray Gell-Mann, Sergei A. Starostin and Merritt Ruhlen. EHL was initially supported by a generous endowment from the John D. & Catherine T. MacArthur Foundation, and has continued through cooperation between the Santa Fe Institute, Russian State University of the Humanities (Center of Comparative Linguistics), Moscow Jewish University, Russian Academy of Sciences (Dept. of History and Philology), City University of Hong Kong, and Leiden University. The goal of EHL has been “integrating data from all of the world’s major and minor language stocks in order to push our knowledge of linguistic prehistory as far back as possible.” <http://ehl.santafe.edu/>, <http://starling.rinet.ru/>
11. The term “Dene-Sino-Caucasian” has sometimes been used, equivalent to the more inclusive version of Dene-Caucasian. “For the past 20 years Sino-Caucasian has been used exclusively for Sino-Tibetan, Caucasian and Yeniseian, while Dene-Caucasian has been used exclusively for a family that includes these three families plus Basque, Burushaski and Na-Dene. These are two different taxa and should not be mixed up. Also there are no families . . . consisting of three names, so the term Dene-(Sino-)Caucasian is both taxonomically and typographically inappropriate” (M. Ruhlen, p.c.).

12. Slightly modified from Bengtson & G. Starostin (2015: 5).
13. This is the taxon named “Karasuk” by van Driem (2001); see below.
14. Note that Alexei Kassian has suggested adding some extinct languages to the Karasuk family: “I tentatively include Hurro-Urartian and Hattic languages into the Yeniseian–Burushaski stock, although the formal lexicostatistic evidence remains insufficient so far ...” (Kassian 2010: 430). Kassian adduces some appealing lexical parallels, such as Hatti *alef* (~ *alep*, *alip*, *aliw*) ‘tongue’ = Yeniseian: *Kott alup*, *Arin álap*, *elep* ‘tongue’. But on account of the very limited evidence available for these vanished tongues they will be ignored in the following discussion.
15. The meanings of the Basque words vary widely depending on dialect: see BCR A.68.
16. This word is also recorded without oblique stem markers: (G-Tolosa, Bzt, R) *su-argi*.
17. The theme of Euskaro-Caucasian oblique stem markers is developed in detail in BCR: 72–76, Bengtson 2018b: 22–23, and Bengtson 2019: 7–9. In the cited forms, Basque **hobi-t-hegi* and *Lak ha-t:a-lu* ‘graveyard, cemetery’, and *Kryzχu-d-il* ‘tombstone’, the first and second elements (Basque **hobi-t-*, *Lak ha-t:a-*, *Kryzχu-d-*, respectively) are deemed cognate, while the third elements have separate origins: Basque **hegi* ‘crest, ridge, border, edge, corner’, etc. (BCR D.11), while *Lak -lu*, *Kryz-il* are common nominal suffixes.
18. *x /s/* is a northern Basque variant of *tx /č/*
19. {*ch*} is an older, and *tx* is the current Basque spelling of the affricate */č/*.
20. Basque verbs are typically cited in the form of the perfective participle: *galdu* ‘lose’, *egon* ‘be, stay’, *ikusi* ‘see’, etc. (Trask 1997: 103), and verb declensions are classified according to this form, e.g. the *-tu* class and the *-n* class, exemplified here.
21. In southern (Spanish) Basque “[*egon*] is now used in all circumstances in which Spanish uses its verb *estar*, while *izan* [see V.38] is used where Spanish uses *ser*” (Trask 1997: 292-3).
22. Luis Michelena remarked on several verbs, including this one, in which voiced and voiceless consonants alternate historically. He thought these were traces of ancient alternations, now leveled in most modern forms (see BCR 93, 156).
23. As explained in detail in BCR 406–408, the Basque-Dargwa concurrence is the result of selective reduction of the original EuC suppletive paradigm.
24. Burushaski has a cognate word, **si* ‘fireplace, hearth’. Cf. Latin *focus* ‘hearth’ > general Romance ‘fire’; possibly a similar semantic innovation occurred in Euskaro-Caucasian, but this is uncertain.
25. PNC **λ* represents a glottalized (ejective) lateral affricate, otherwise written as */tʃʰ/*; the regular correspondence of this phoneme with Basque */l/* (in initial or final position) is well-established (BCR 154–158). The **L* in West Caucasian **La-* ‘ear’ and Nakh **=aL-* ‘die’ denotes the voiced lateral affricate, also written */dʒ/*.
26. Burushaski has a cognate verb, **-l-* ‘to hit, to kill’, but it lacks the passive/stative meaning (‘die’) found in Euskaro-Caucasian.
27. Yeniseian has a probable cognate in *Kott kin* ‘smell’, with a parallel semantic development in Basque **kino* ‘stench, odor; bad taste’.
28. An extensive discussion of examples (b) and (c), Euskaro-Caucasian words for ‘fire’ and ‘smoke’, is found in Bengtson (2019).
29. Cf. section II, principle (4), above: “Grammatical paradigms, or parts of paradigms, and especially suppletive paradigms, are especially convincing in genetic linguistics.”
30. *kho-* is apparently an ablaut variant.

31. Whether the Burushic protoform is *=reŋ (S.A. Starostin) or *=rin (Jan Henrik Holst) is worthy of discussion. Even if the comparison should be Yeniseian *faʔŋ ‘hand’ = Burushic *=rin ‘hand’, the correspondence *-ŋ = *-n can be verified by several other etymologies, notably Yeniseian *gāŋ ‘(hunting) path’ = Burushic *gan ‘road’ (‘Straße, Weg’); or Y *seŋ ‘liver’ = B *=sán ‘spleen’ (Bengtson 2010).
32. The stem variants are governed by noun class and number parameters (Bengtson & Blažek 2011: 57).
33. The isogloss is not exclusive if Sino-Tibetan *zha‘eat’ (→ Tibetan za, etc.) and NC *=VçV (→ Andian *ç:a-, Archi ça- ‘to drink’; ‘to eat’ only in Tsezian *=aç-) also belong here; but even so, the forms in Yeniseian and Burushic are phonetically and semantically much closer to each other. The putative Basque cognate *auši-ki means ‘to bite’.
34. -án is the singulative suffix; simple ŋ occurs in the expressions ŋe waʔ or ŋepuŋóro ‘eggshell’ (Berger 1998).
35. The correspondence of Burushic *ʈ = Yeniseian *y (= Starostin’s *j) is similar to that of Burushic *tap ‘leaf, petal’ = Yeniseian *yāpe ‘leaf’ (except the retroflex *ʈ in ‘egg’, probably conditioned by the following velar nasal; cf. Bengtson 2010: 9–10; Bengtson & Blažek 2011: 27–29; S.A. Starostin 2005a: 64–67). Less confidently, cf. also Burushic *tapi ‘stony terrace’ = Yeniseian *y[e]ʔp ‘shovel, board’ (if the original sense was ‘flat, slab’); and/or Burushic *tal ‘palate, eyelid’ (→ ‘ceiling’) = Yeniseian *yil- ‘gills’ (S.A. Starostin 2005b: 75–76; 137–38).
36. In principle there is nothing wrong with the spelling “Sino-Dine.” Diné is the standard Navajo spelling of the word meaning ‘Navajo, person, people’, and is similarly used, in several variants, as an autonym by other Athabaskan peoples. As a taxon name “Sino-Dene” is currently more usual.
37. Both are easily accessible online: <http://www.jolr.ru/>
38. In this argumentation I have been helped by M. Ruhlen, e.g. (2001b, 2005).
39. Roughly translated/paraphrased by JDB.
40. Bengtson's main works on the (Dene)-Sino-Caucasian hypothesis and other aspects of macrocomparativism are collected in the publication: Bengtson, John D. *Linguistic Fossils: Studies in Historical Linguistics and Paleolinguistics*. Calgary: Octavia & Co. Press, 2010.
41. [In my opinion, ‘Greenbergism’ and ‘mass comparison’ (better: multilateral comparison) have been unfairly and even preposterously maligned. “Ridiculing ‘mass comparison’ is an easy and grateful task, but acknowledging the method as an important first step in establishing genetic relationship would, I believe, be much more in line with the traditional understanding of science” (G.S. Starostin 2009: 164). I leave it there, since a thorough discussion of this issue would open a Pandora’s Box that cannot be satisfactorily dealt with in this setting. JDB]

References

- Bengtson, J.D. (1992a). Macro-Caucasian Phonology. In V. Shevoroshkin (ed.), *Nostratic, Dene-Caucasian, Austric and Amerind*, pp. 342–352. Bochum :Brockmeyer.
- Bengtson, J.D. (1992b). The Dene-Caucasian Macrophyllum. In V. Shevoroshkin (ed.), *Nostratic, Dene-Caucasian, Austric and Amerind*, pp. 334–341. Bochum :Brockmeyer.
- Bengtson, J.D. (1994). Edward Sapir and the “Sino-Dene” hypothesis, *Anthropological Science* 102.3: 207–230.
- Bengtson, J.D. (1997). Ein Vergleich von Burushaski und Nordkaukasisch. *Georgica. Zeitschrift für Kultur, Sprache und Geschichte Georgiens und Kaukasiens* 20: 88–94.

- Bengtson, J.D. (2003). Notes on Basque Comparative Phonology. *Mother Tongue* 8: 21–39.
- Bengtson, J.D. (2004). Some features of Dene-Caucasian phonology (with special reference to Basque). *Cahiers de l'Institut de Linguistique de Louvain* 30(4): 33–54.
- Bengtson, J.D. (2008a). Materials for a Comparative Grammar of the Dene-Caucasian (Sino-Caucasian) Languages. In A.V. Dybo, V.A. Dybo, O.A. Mudrak, G.S. Starostin, (ed.), *Aspects of Comparative Linguistics*, pp. 45–118. Moscow : RSUH Publishers.
- Bengtson, J.D. (2008b). The Languages of Northern Eurasia: Inference to the Best Explanation. In J.D. Bengtson (ed.), *In Hot Pursuit of Language in Prehistory: Essays in the four fields of anthropology in honor of Harold Crane Fleming*, pp. 241–262. Amsterdam : John Benjamins.
- Bengtson, J.D. (2010). “Dene-Yeniseian” and the Rest of Dene-Caucasian: Part 3: The Burusho-Yeniseian (Karasuk) Hypothesis; Part 4: Burusho-Dene. In S. Tuttle & J. Spence (ed.), *Working Papers in Athabaskan Languages*, pp. 1–18. (Alaska Native Language Center Working Papers No. 8). Fairbanks : Alaska Native Language Center.
- Bengtson, J.D. (2014). Burushaski and the Western Dene-Caucasian Language Family: Genetic and cultural linguistic links. *Mother Tongue* 19: 181–222.
- Bengtson, J.D. (2017). *Basque and its Closest Relatives: A New Paradigm*. Cambridge, Mass. : Mother Tongue Press. [BCR]
- Bengtson, J.D. (2018a). Some notes on Euskaro-Caucasian phonology. *Journal of Language Relationship* 16(3): 247–264.
- Bengtson, J.D. (2018b). How Do You Solve A Problem Like Euskera? *Romance Philology* 72(1): 15–33. (Spring 2018.)
- Bengtson, J.D. (2019). ‘Where there is fire, there is smoke’: A study in the Euskaro-Caucasian hypothesis. *Slovo a slovesnost* 80: 3–25.
- Bengtson, J.D. & V. Blažek. (2011). On the Burushaski–Indo-European hypothesis by I. Čašule. *Journal of Language Relationship* 6: 25–63.
- Bengtson, J.D. & V. Blažek. (2012). Comments on Ilija Čašule’s “Correlation of the Burushaski Pronominal System with Indo-European and Phonological and Grammatical Evidence for a Genetic Relationship.” *Journal of Indo-European Studies* 40(1/2): 156–161.
- Bengtson, J.D. & G. Starostin. (2015). The Dene-Sino-Caucasian hypothesis: state of the art and perspectives. Discussion draft posted on Academia.edu, 2015.
- Berg, H. van den. (1995). *A Grammar of Hunzib (with Texts and Lexicon)*. München / Newcastle : LINCOM EUROPA.
- Berg, H. van den. (2005). The East Caucasian Language Family. *Lingua* 115: 147–190.
- Berger, H. (1998). *Die Burushaski-Sprache von Hunza und Nager*. Teil I. Grammatik. Teil II. Texte. Teil III. Wörterbuch. Neuindische Studien 13. Wiesbaden : Otto Harrassowitz.
- Blažek, V. (2010). Review of Lyle Campbell & William J. Poser. *Language Classification: History and Method* (2008). *Mother Tongue* 15: 149–161.
- Blažek, V. (2017). Yeniseian homeland and migrations. *Man in India* 97(1): 69–94.
- Blažek, V., & J.D. Bengtson. (1995). Lexica Dene-Caucasica. *Central Asiatic Journal* 39(1): 11–50, 39(2): 161–164.
- Bouda, K. (1954). Burushaski Etymologien I. *Orbis* 3(1): 228–230.
- Bouda, K. (1964). Burushaski Etymologien II. *Orbis* 13(2): 604–609.
- Buck, C.D. (1949). *A Dictionary of Selected Synonyms in the Principal Indo-European Languages*. Chicago : University of Chicago Press. [Buck]

- Campbell, L. & W.J. Poser. (2008). *Language Classification. History and Method*. Cambridge : Cambridge University Press.
- Deeters, G. (1963). Die kaukasische Sprachen. In B. Spuler (ed.), *Handbuch der Orientalistik*, Bd. 7, pp. 1–79. Leiden-Köln.
- Driem, G. van. (2001). *Languages of Himalayas*. Leiden-Boston-Brill.
- Gerber, P. (2017). The Dene-Kusunda Hypothesis: A Critical Account. *Man in India* 97(1): 111–204.
- Hayward, R.J. (2000). Afroasiatic. In B. Heine & D. Nurse, (ed.), *African Languages: An Introduction*, pp. 74–98. Cambridge, UK : Cambridge University Press.
- Heine, B. & D. Nurse, (ed.). (2000). *African Languages: An Introduction*. Cambridge, UK : Cambridge University Press.
- Hualde, J.I. (1991). *Basque Phonology*. London/New York : Routledge.
- Hymes, D. (1971). Morris Swadesh: From the first Yale school to world prehistory. In M. Swadesh, *The Origin and Diversification of Language*, pp. 228–270. Ed. by J. Sherzer. Chicago, New York : Aldine Atherton,
- Kassian, A. (2010). Hattic as a Sino-Caucasian language. *Ugarit-Forschungen* 41: 309–448.
- Kehoe, A.B. (2016). *Traveling Prehistoric Seas: Critical Thinking on Ancient Transoceanic Voyages*. Oxon / New York : Routledge.
- Lamb, S.M. (1959). Some Proposals for Linguistic Taxonomy. *Anthropological Linguistics* 1(2): 33–49.
- Matisoff, J.A. (2003). *Handbook of Proto-Tibeto-Burman: system and philosophy of Sino-Tibetan reconstruction*. Berkeley : University of California Press.
- Nikola(y)ev, S.L. & S.A. Starostin. (1994). *A North Caucasian Etymological Dictionary*. Moscow : Asterisk Press. [NCED]
- Newman, P. (2000). Comparative Linguistics. In B. Heine & D. Nurse, (ed.), *African Languages: An Introduction*, pp. 259–271. Cambridge, UK : Cambridge University Press.
- Nichols, J. (2010). Proving Dene-Yeniseian Genealogical Relatedness. In J. Kari & B.A. Potter (ed.), *The Dene-Yeniseian Connection*, pp. 299–309. Anthropological Papers of the University of Alaska, vol. 5(1-2). Fairbanks : ANLC.
- Nikolaev, S.[L.] (1991). Sino-Caucasian Languages in America. In V. Shevoroshkin, (ed.), *Dene-Sino-Caucasian Languages*, pp. 42–66. Bochum : Brockmeyer.
- Peiros, I. & S.A. Starostin. (1996). *A comparative vocabulary of five Sino-Tibetan languages* (6 vols.). Melbourne : University of Melbourne.
- Ruhlen, M. (1998). The Origin of the Na-Dene. *Proceedings of the National Academy of Sciences* 95: 13994–13996.
- Sapir, E. (1920). *Comparative Sino-Tibetan and Na-Dene Dictionary*. Ms. Ledger. American Philosophical Society Na 20a.3. [Microfilm.]
- Shevoroshkin, V. (ed.). (1991). *Dene-Sino-Caucasian Languages*. Bochum : Brockmeyer.
- Shevoroshkin, V. (ed.). (1992). *Nostratic, Dene-Caucasian, Austric and Amerind*. Bochum : Brockmeyer.
- Starostin, G.S. (2009). Review of Lyle Campbell & William J. Poser. *Language Classification: History and Method*, 2008. *Journal of Language Relationship* 2: 158–174.
- Starostin, G.S. (2010a.) Dene-Yeniseian and Dene-Caucasian: Pronouns and Other Thoughts. In S. Tuttle & J. Spence (ed.), *Working Papers in Athabaskan Languages*, pp. 107–117. (Alaska Native Language Center Working Papers No. 8). Fairbanks : Alaska Native Language Center.
- Starostin, G.S. (2010b.) Preliminary lexicostatistics as a basis for language classification: a new

- approach. *Journal of Language Relationship* 3: 79–117.
- Starostin, G.S. (2012). Dene-Yeniseian: a critical assessment. *Journal of Language Relationship* 8: 117–152.
- Starostin, G.S. (2015). *K istokam jazykovogo raznoobražija. Desjat' besed o sravnitel'no-istoričeskom jazykoznanii c E. Ja. Satanovskim.* (Priučastii A. V. Dybo, A. Ju. Militarëva, I. I. Peyrosa.) [Origins of linguistic diversity. Ten conversations on comparative-historical linguistics with E. Ya. Satanovsky. (With the participation of A.V. Dybo, A.Yu. Militarev, I.I. Peyros.) Moscow :Izdatel'skiydom DELO.
- Starostin, S.A. (1982). Praenisejskaja rekonstrukcija i vnešnje svjazi enisejskix jazykov. [Proto-Yeniseian re-construction and external relations of the Yeniseian languages.] *Ketskij sbornik [Studia Ketica]*, 144–237. Leningrad :Nauka. http://starling.rinet.ru/Texts/Starostin_Yeniseian.pdf
- Starostin, S.A. (1984). Gipoteza o genetičeskix svjazjax sinotibetskix jazykov s enisejskimi i severnokavkazskimi jazykami. [On the Hypothesis of a Genetic Connection between the Sino-Tibetan Languages and the Yeniseian and North Caucasian Languages.] In I.F. Vardul' (ed.), *Lingvističeskaja rekonstrukcija i drevnejšaja istorija Vostoka*, 4, pp. 19–38. Moskva :Nauka.
- Starostin, S.A. (1991). On the Hypothesis of a Genetic Connection between the Sino-Tibetan Languages and the Yeniseian and North-Caucasian Languages. (Translated by W. Baxter). In V. Shevoroshkin (ed.), *Dene-Sino-Caucasian Languages*, pp. 12–41. Bochum :Brockmeyer.
- Starostin, S.A. (2005a). *Sino-Caucasian [Phonology]*. <http://starling.rinet.ru/Texts/scc.pdf>
- Starostin, S.A. (2005b). *Sino-Caucasian [Comparative Glossary]*. <http://starling.rinet.ru/Texts/glossary.pdf>
- Starostin, S.A. (2007a). *Trudy po jazykoznaniju. [Works on linguistics.]* Ed. by G.S. Starostin. Moscow :Jazyki slavjanskix kul'tur.
- Starostin, S.A. (2007b). Opredelenije ustojčivosti bazisnoj leksiki. [Defining the Stability of Basic Lexicon.] In Starostin 2007a: 825-839.
- TOB:** Tower of Babel: International, Web-based project on historical and comparative linguistics developed by S. A. Starostin & Yu. Bronnikov. <http://starling.rinet.ru/main.html>
- Trask, R.L. (1997). *The History of Basque*. London/New York : Routledge.
- Turner, R. L. (1962–66). *A comparative dictionary of Indo-Aryan languages*. London : Oxford University Press.
- Tuttle, S.& J. Spence (ed.). (2010). *Working Papers in Athabaskan Languages* (Alaska Native Language Center Working Papers No. 8). Fairbanks : Alaska Native Language Center.
- Vajda, E.J.(2000). Yeniseian and Na-Dene: Evidence for a genetic relationship. *Paper presented at the 38th Conference on American Indian Languages* (SSILA), Chicago, January, 2000.
- Vajda, E.J. (2008). Losing semantic alignment. From Proto-Yeniseic to Modern Ket. In M. Donohue& S. Wichmann (ed.), *The Typology of Semantic Alignment*, pp. 140–161. Oxford/ New York : Oxford University Press.
- Vajda, E.J.(2010). A Siberian link with Na-Dene languages. *The Dene-Yeniseian Connection. Anthropological Papers of the University of Alaska*, 5(1-2): 33–99.
- Vajda, E.J.(2012). The Dene-Yeniseian connection: a reply to G. Starostin. *Journal of Language Relationship* 8: 138–150.
- Whitehouse, P., T. Usher, M. Ruhlen, & W.S.-Y. Wang. (2004). Kusunda. An Indo-Pacific Language in Nepal. *Proceedings of the National Academy of Sciences* 101(15): 5692–5695.