Edward Sapir and the “Sino-Dene” Hypothesis

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Abstract The American scholar Edward Sapir proposed that the Na-Dene languages of North America (Haida, Tlingit, Eyak, Athabaskan) are genetically related to the Sino-Tibetan languages of Asia (Sinitic, Karenic, Tibeto-Burman). Sapir and other linguists have found correspondences between the phonetic systems, and more importantly, the grammar and basic vocabulary of both families. It is maintained here that Sapir was essentially correct about this genetic connection (“Sino-Dene”), and that there is no evidence that he ever retracted it. Recent research corroborates Sapir’s hypothesis and indicates the high probability of a widespread Dene-Caucasian family, which dispersed some 11,000 years ago. Some new linguistic evidence for this family is also presented here for the first time.

Key Words: anthropological linguistics, genetic classification of languages, Na-Dene Languages, Sino-Tibetan languages, Edward Sapir

If the morphological and lexical accord which I find on every hand between Nadene and Indo-Chinese is ‘accidental’, then every analogy on God’s earth is an accident.... For a while I resisted the notion. Now I can no longer do so. – Edward Sapir, 1921 (Golla, 1984, pp. 374-382).

INTRODUCTION

Edward Sapir, one of the great historical linguists (and anthropologists) of this century, propounded a hypothesis that the Na-Dene languages of North America were genetically related to the Sino-Tibetan languages of Asia. The questions remain: whether Sapir continued to hold the hypothesis until his death in 1939; and, more importantly for science, whether Sapir was essentially correct or not, that is, whether or not “Sino-Dene” is a valid genetic connection. These are problems both for the history of linguistics and for anthropological linguistics (genetic classification of languages).

In this discussion the Na-Dene family (or phylum) is taken to include the following: Haida, Tlingit, Eyak, and the Athabaskan family. Note that some (Hamp, 1979; Krauss, 1979; Levine, 1979; Krauss and Leer, 1981) deny, or consider unproven, the inclusion of Haida in Na-Dene. Pinnow (1964, 1966, 1985, 1988a,
b), Greenberg (1987, chapter 6), Nikolaev (1991), and Ruhlen (1994b) support Sapir’s view, also accepted here, that Haida is the most remote member of Na-Dene. “Indo-Chinese” was the common designation in Sapir’s time, which was taken to include Daic (Tai) and Miao-Yao, as well as Sinitic (Chinese-Bai), Karen, and Tibeto-Burman. Sino-Tibetan, as used here, includes Sinitic, Karen, and Tibeto-Burman only, a classification established only after Sapir’s death (cf. Ruhlen, 1987, pp.143-144).

By 1920, as the founder of Na-Dene studies (Sapir, 1915), he had come to the insight that Na-Dene was fundamentally different from other North American language families: “Nadene ... is really quite alone in America ... The contrast between it and Eskimo, Wakashan, and Algonkin is tremendous” (Golla, 1984, p.374). In a 1920 address, he described Na-Dene as “a ‘tremendous intrusive wedge,’ driven from Asia into the older distribution of languages in North America” (Golla, 1986, p.18). The same year he wrote to Alfred Kroeber: “Do not think me an ass if I am seriously entertaining the idea of an old Indo-Chinese offshoot into N.W. America” (Golla, 1984, p.350). The same theme was developed in further letters to Kroeber and other colleagues.

In 1925 a curious little article, “The Similarity of Chinese and Indian Languages,” appeared in Science Supplement (Anonymous, 1925). While clearly not written by Sapir himself (Kaye, 1992), it summarized his Sino-Dene hypothesis in popularized form, using the metaphor of the “wedge from Asia.” The note stated that parallels between the two language families included phonetics, vocabulary and grammatical structure. For many years this remained the only published announcement of Sapir’s hypothesis, which we shall call “Sino-Dene” (Golla, 1991, p.23).

**EVIDENCE FOR SINO-DENE**

In Sapir’s scholarly style (see, e.g., Sapir, 1913) lexical comparisons in isolation were meaningless: at least some points of grammatical structure were first shown to be held in common by the languages being compared. These points supplied a framework to which lexical parallels could then be added. In a letter to Kroeber that remains the clearest statement of Sapir’s grammatical evidence for Sino-Dene, he began by comparing the “third modal” elements of Na-Dene (now known as “classifiers”) with the similar verbal prefixes found in Tibetan. Among these is the prefix s- in both language families. s- is found in all four divisions of Na-Dene: Haida, Tlingit, Eyak, and Athabaskan. In Sino-Tibetan s- (or traces of it) are found in Tibetan, Gyarung, Kachin, Nung, Lepcha, and Burmese (Benedict, 1972, p.105). At least in Tlingit a causative or transitive meaning is clear: gu¬d ‘to go’, s-i-gu¬d ‘to make go, carry on the shoulder’; compare Tibetan gyur ‘to become’, s-gyur ‘to make become, to change’ (Pinnow, 1976, p.102). In his “Comparative Sino-
Tibetan and Na-Dene Dictionary” (Sapir, 1920b), Sapir gave a striking example of prefix and stem correspondence:


In both language families the original meanings and functions of the prefixes are elusive: “The meanings of these [Na-Dene] 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” (Krauss, 1965, p.24). “In many instances ... no function can be assigned to these [Sino-Tibetan prefixal] elements” (Benedict, 1972, p.96). These remarkable similarities demand further study as the elements in question continue to be clarified in both language families. A comparison of several Na-Dene and Sino-Tibetan grammatical elements has been made by Jürgen Pinnow (1976, pp.98-105).

There is also a nominal prefix s-, attested in Na-Dene (Haida only) and Sino-Tibetan:

Haida s-tl'áy ‘hand’ (cf. Tlingit tl'eq ‘finger’; Sarsi tl'iks-azá ‘one’); Haida s-t'áy ‘foot’ (cf. Haida t'ar ‘to step’; Sarsi -t'ás, -t'áz ‘to move one’s own foot’); Haida s-qut ‘armpit’ (cf. Tlingit Xet ‘chest, breast’; Navajo -yid ‘breastbone’); Haida s-gil ‘navel’ (cf. Tlingit kül id.); Haida s-kuc ‘bone’ (cf. Athabaskan *-gi3 ‘cartilage’); Haida s-q'il ‘dirt’ (cf. Tsetsaut kwul? id.). s- is apparently an archaism preserved only in Haida.


In a few cases we may have exact correspondences of both prefix and stem in Na-Dene and Sino-Tibetan:

(§24) Haida s-qál ‘shoulder’: cf. Tibetan s-gal-pa ‘small of the back’ (§ refers to numbered sets in Appendix A);
(§25) Haida s-ku ‘back’: cf. Tibetan s-ku ‘body’;

Facts like these led Sapir to declare that (Classical) Tibetan “is startlingly Na-dene-like” (Golla, 1984, p.375). In the same 1921 letter to Kroeper, Sapir stated that “the lexical evidence [for Sino-Dene] is startling. You would be amazed at some of my material” (Golla, 1984, p.376). Lexical comparisons are scattered throughout Sapir’s
unpublished materials, including his “Comparative Sino-Tibetan and Na-Dene Dictionary” (Sapir, 1920b), and they can now be supplemented by the work of Robert Shafer and others. A selection of some of the most promising lexical comparisons supporting Sino-Dene is presented below as Appendix A.

The note in Science Supplement, mentioned above (Anonymous, 1925), referred to only one specific feature: the existence of tone in many (but not all) Na-Dene and Sino-Tibetan languages. Michael Krauss (1973, p.963) has stated that tone “is in fact largely or entirely a relatively recent development compensating for deterioration of stem-final consonantism and suffixation in earlier stages of both [Sino-Tibetan and Na-Dene].” This would be disputed by, e.g., Benedict (1993), who posits two tones for Proto-Sino-Tibetan, “probably rising vs. falling”; and Nikolaev (1991), who reconstructs tone for Proto-Na-Dene. In either case, developments in both families could be an example of Sapir’s “linguistic drift” (the tendency, or momentum, of related dialects to develop in parallel ways after separation). Hamp (1979) views the possible absence of original tone as fatal for the Sino-Dene hypothesis, but surely Sapir himself did not see it this way. Morphology (grammar) and lexicon were decisive, not a typological feature such as tone.

OTHER SCHOLARSHIP CONFIRMING SINO-DENE

A number of studies, conducted before, during, and after Sapir’s research, directly or indirectly confirm the Sino-Dene hypothesis (now usually known as Dene-Caucasian or Sino-Caucasian). European scholars such as Karl Bouda, René Lafon, O.G. Tailleur, V.N. Toporov, Alfredo Trombetti, and C.C. Uhlenbeck worked eastward from Europe, connecting Basque, Caucasian, Burushaski, Yeniseian, and Sino-Tibetan (or various combinations thereof). Only Trombetti, to my knowledge, made the connection with Na-Dene. In America, Robert Shafer (1952, 1957, 1969) and Morris Swadesh (1952, 1965) adduced evidence connecting Na-Dene with Old World languages.

In Russia, Sergei Starostin (1982, 1984, 1989b, 1991; Starostin and Ruhlen, 1994) revived earlier comparisons of Caucasian, Yeniseian, and Sino-Tibetan, and his colleague Sergei Nikolaev (1991) compared Caucasian with Na-Dene (an appendix to his 1991 article extends some comparisons to include Sino-Tibetan and Yeniseian as well). Václav Blažek (Blažek and Bengtson, 1995), Merritt Ruhlen (1990, 1992; Starostin and Ruhlen, 1994), and the present writer (Bengtson, 1990a, b, 1991a, b, c, d, e, 1993) have made further contributions to Dene-Caucasian studies.

The current Dene-Caucasian hypothesis embraces Basque, Caucasian, Burushaski, Sino-Tibetan, Yeniseian, and Na-Dene as its most secure members. Sumerian (Bengtson, 1990b), Nahali (Ruhlen, 1990), and Kusunda (Gurov, 1989; Blažek & Bengtson, 1995) have also been investigated in the Dene-Caucasian context, with
less conclusive results thus far. Nikolaev (1991) and Shevoroshkin (1991) have suggested further American additions (Algic, Salishan, Wakashan), but others have not followed in this. (As we saw above, Sapir distinguished Na-Dene quite sharply from Wakashan and Algonkian.)

CRITICAL RESPONSES TO SINO-DENE

Critical appraisals of Sapir’s Sino-Dene hypothesis (and Shafer’s revival of it) have been varied. James Matisoff, in a note to Benedict’s *Conspectus*, simply writes off Shafer’s long-range hypotheses as “extremely far-flung (and far-fetched)” (Benedict, 1972, p.3, note 13). Michael Krauss (1973, pp.963-964) considers Sino-Dene (as well as other hypotheses for the remote relations of Na-Dene) “purely speculative,” and claims that “Sapir was in fact clearly carried for beyond any objectively justifiable conclusions by his enthusiasm for the idea [of Sino-Dene].” Lyle Campbell (1988, p.593) tersely states that “Needless to say, no specialist today embraces this claim [that Na-Dene and Sino-Tibetan are related].” Victor Golla (1991, p.138), while admitting that “the connection is ... a plausible one, both on linguistic and anthropological grounds,” dismisses Shafer’s (1952, 1957) work in support of Sino-Dene because of Shafer’s relative inexperience with Na-Dene. Alan Kaye (1992, pp.280-281) concludes that “Sapir was somehow led astray into this Indo-Chinese-Nadene hypothesis” and later “lost faith in it.”

On the other hand, Morris Swadesh (1952, p.178) found that Shafer’s (1952) study “made an important contribution to linguistics and to the prehistory of North America,” and constituted “an independent corroboration of the correctness of [Sapir’s Sino-Dene] theory.” Jürgen Pinnow, while hesitant to strongly affirm Sino-Dene or Dene-Caucasian, has in fact supplied substantial evidence for the connection (Pinnow, 1976, pp.98-105), and views Na-Dene as a transitional link between Sino-Tibetan and American families such as Siouan (personal communication, 1993). Joseph Greenberg was circumspect about Sino-Dene until recently (“The Sapir-Shafer hypothesis clearly requires investigation in a broader classificational context.” Greenberg, 1987, p.332), but he, and Merritt Ruhlen, have since accepted Dene Caucasian (Greenberg and Ruhlen, 1992; Ruhlen, 1990, 1992; Starostin and Ruhlen, 1994).

This division of opinions can be attributed, in large part, to an opposition of mind-sets regarding long-range linguistic comparison. Sapir himself was aware of this polarity, as he wrote to Frank Speck in 1924:

One [type], conservative intellectuals like [Franz] Boas ... who refuse absolutely to consider far-reaching suggestions unless they can be demonstrated by a mass of evidence.... Hence, from an over-anxious desire to be right, they generally succeed in being more hopelessly and fundamentally wrong, in the long run, than many more superficial minds who are not committed to ‘principles.’ ... The second...
type is more intuitive and, even when the evidence is not as full or theoretically unambiguous as it might be, is prepared to throw out tentative suggestions and to take it as it goes along. (Quoted by Darnell, 1986, pp.563-564.)

These opposing mind-sets remain with us today. With regard to my own work, the French scholar Michel Morvan has recently written:

Nevertheless, it is appropriate to control and give an outlet to the passion of these [long-range comparison] scholars, without falling prey to the widespread trap to which many linguists succumb, which, from fear of making an error, and perhaps from too much training, is translated into an excess of caution, which is itself as disastrous as the lack of caution. There can no longer be any doubt that there is some truth in linguistic superfamilies such as Nostratic or Dene-Caucasian (Morvan, 1992, p.357).

Wright (1991) contains further discussion of these intellectual polarities.

I would advocate a moderation of these extremes: openness to the possibility of long-range relationships, but accepting them only when the core morphological and lexical evidence is such that no other explanation is possible. Krauss’ (1973, p.963) requirement of “clear productive rigorous phonological correspondences based on a large enough number of well-established forms” is prohibitively cautious, and recalls Sapir’s description of Boas. This requirement is appropriate to relatively recent families, such as Romance or Athabaskan, but not to the time depth required for Sino-Dene.

CONCLUSIONS

As to the second question raised at the beginning of this paper, my conclusion is that Sapir was essentially correct about the Sino-Dene linguistic relationship, though, naturally, he only saw part of the picture. There are too many correspondences in basic vocabulary and morphology to be ignored, or dismissed simply because of an author’s stance as a non-specialist. (Sapir was a Na-Dene specialist, while Shafer was a Sino-Tibetan specialist, but both came to the same conclusion.) Rather than quibbling about the background of scholars, should one not evaluate the evidence itself? Most critical statements have avoided this option: an impartial examination of each comparison, noting strong as well as weak features, and supplementing the original comparisons with reconstructions and attested forms. That this has not been forthcoming in the several decades since Sapir, Shafer, and Swadesh represents a shameful abdication of duty by the American linguistic community. (Pinnow, a German, is a notable exception.)

Kaye (1992, p.280) accounts for Sapir’s being “led astray” into Sino-Dene “because he did not know how to deal with the probability of coincidence (i.e., accidental resemblances).” But if this were so, and the hypothesis were merely an
artifact of the scholar, why did Sapir connect Na-Dene specifically with Sino-
Tibetan? Why not Chukchi, Gilyak, Ainu, or any number of other languages
geographically closer to Na-Dene territory? If Sino-Dene consisted only of “acci-
dental resemblances,” would these not be found as readily in any of those languages
as in Sino-Tibetan?

The answer, of course, is that the resemblances defining Sino-Dene are not
accidental, and can be plausibly ascribed only to genetic relationship. The compari-
sons in Appendix A include pronouns; demonstratives; interrogatives; basic anato-
mal terms such as ‘tongue’, ‘eye’, ‘heart’, ‘foot’, ‘hand’; basic designations such
as ‘sand’, ‘stone’, ‘water’, ‘bark’; and verbals and descriptives such as ‘to see’, ‘to
think’, ‘dry’, ‘black’. Historical linguists agree that words with these meanings are
resistant to replacement and borrowing. The idea that all of these resemblances are
accidental is one that defies probability, the more so when morphological parallels
(see above) and phonetic regularity (see Appendices A and B) further corroborate
the lexical material.

Krauss’ assertion, noted above, that Sapir was “carried far beyond any objectively
justifiable conclusions by his enthusiasm” is contrary to all we know about the man.
Mere enthusiasm might have carried him for a matter of days or weeks, but Sapir’s
preoccupation with Sino-Dene is documented over a period of at least twelve years
(1921-1933). By Krauss’ (1986, p.180) own account, Sapir’s comparative Sino-
Dene ledger consists of 525 pages. This was no passing fancy, but an insight
confirmed and reconfirmed by painstaking research. My own examination of the
ledger (on microfilm) reveals a large number of promising comparisons (a small
number of which are listed in Appendix A, below) mixed with a few others that
now appear questionable. This would be expected in any pioneering study (cf.
Morvan, quoted above).

This leads to the first question raised at the outset, to which Kaye (1992, p.281)
finds that Sapir “lost faith” in Sino-Dene, and long-range comparison in general,
toward the end of his life. (Kaye, in a personal communication, now specifies this
period as 1935-1939.) It should be noted that Kaye cites nothing from Sapir’s
writings — published or unpublished — in which there is any intimation of such
a loss of faith. Furthermore, as late as 1993 Sapir was still discussing Sino-Dene
with his students at Yale (Swadesh, 1952), and the same year he wrote to the young
Nicholas Bodman that “I still believe [Sino-Dene] is true,” and wrote out eleven
Sino-Dene comparisons for him (reported in Kaye, 1992, p.279). These hardly seem
like the acts of a man who was losing faith in a theory. If so, would he have wanted
to lead young scholars astray? Golla (1993) also notes that there are some indications
that in the late 1930’s Sapir planned to resume work on Sino-Dene “through
immersion in Sinology. We know for sure that he made plans to spend his 1937-
38 sabbatical in China.... His first heart attack hit him while he was on his way to
Hawaii, however, and he lived only another year and a half, most of that time an invalid.”

I further see no “mystery” (Kaye, 1992, p.279) that Sapir never published his evidence for Sino-Dene. Swadesh’s (1952, p.179) explanation was that Sapir “wanted to work out more fully the detailed phonology on both sides of the Pacific,” a task he did not live to finish, as just noted. Furthermore, after weathering severe attacks on his proposals for Algic (Sapir, 1913) and Na-Dene (Sapir, 1915), families that are widely accepted today, Sapir would naturally have been hesitant to publish a proposal that went far deeper than any of his earlier hypotheses (cf. Krauss, 1986, p.159; Ruhlen, 1990, p.86). His mentor Boas, who did not even accept Na-Dene, would have been “angered and shocked” to see Sino-Dene in print (according to Kaye, 1992, p.281), and as it turned out, Boas outlived his student. It seems to me that Sapir accepted the reality that Boas, and most of the scholarly world at that time, were not yet ready for the sweeping implications of Sino-Dene. Not only did it connect the Old World with the New World, it implied a common origin for high cultures (China, Tibet) with cultures that many anthropologists of that time still regarded as “savage” or “primitive” (e.g., the Kutchin or Apache). Rather than publishing unpopular views, he shared the information with selected colleagues like Kroeber, with a cautionary note such as: “Don’t blab too much about my Indo-Chinese just yet. It’s not wise” (Golla, 1984, p.377). Also, as we have seen above, he discussed the subject with young people who were not hampered by the prejudices of their elders. Apart from all this, in the 1930’s Sapir’s interest was increasingly devoted to new topics: structural linguistics, phonemics, and culture and personality.

Sapir’s Sino-Dene proposal can now be seen as one of the first solid connections between New World and Old World languages. At about the same time as Sapir’s hypothesis was announced (Anonymous, 1925), a scholar in Italy published his proposal of “il nesso basco-americano” (Trombetti, 1926, p.6), which tallied closely with Sapir’s Sino-Dene. Both savants caught glimpses of a genetic unity that has only recently been clarified as the widespread and ancient Dene-Caucasian family.

APPENDIX A: Lexical comparisons supporting Sino-Dene

The following comparisons are arranged according to semantic fields. Na-Dene forms are given first, followed by Sino-Tibetan forms. Sources are noted in parentheses ( ), with abbreviations noted below before the reference section. (Plain numbers, e.g. STC 46, refer to page numbers; with a number sign, e.g. P §97, an etymology number is indicated.) Following each etymology, in square brackets [ ], references are given to earlier versions (if any) of the comparison, as well as phonetic or semantic explanations, as needed.

Of the following comparisons, about a third can be found in Sapir's letters and
unpublished notes. About another third are based on the more recent works of Shafer, Nikolaev, Blažek, and myself. The remaining third are presented here for the first time. For each set I have made an effort to supplement the original comparisons with the latest reconstructions and language data available to me.

One must bear in mind the great time depth implicit in these comparisons: some ten to eleven thousand years, according to Starostin (1989b, 1991). One would expect only the most stable, basic parts of the lexicon to survive, and then only in one or a few branches of each family. Any cultural vocabulary still held in common would be of the most rudimentary type, consistent with Upper Paleolithic hunter-gatherer culture: simple ropes, cords, baskets, and the like. As noted by Shafer (1952, p.12) “the flora and fauna in the Sino-Tibetan and Athapaskan regions are almost altogether different so that comparisons of this class are necessarily almost entirely eliminated.” The few that can be made usually involve semantic shifts, as old words accommodate to a changing environment (e.g., §36, ‘pheasant–grouse’).

[Pronouns, particles:]

1. Na-Dene *Xa- ‘I’: Tlingit Xa-; Eyak x-, xw- id.;

2. Na-Dene: Tlingit yi-yi ‘you, ye, your’ (2nd pers. pl. subj., obj., poss.); Athabaskan *Xw- (2nd pers. pl. subj.): chipewyan uh-, Hupa o-h-, Navajo oh-id.; *na-Xw(a)- (2nd pers. pl. obj., poss.): Chipewyan nu-he, Navajo ni-hi ‘you, your’ (P §272, KL 43, 203);
   Sino-Tibetan: Tibetan khyi-d, Lepcha ho, Burmese kway, Garhwal khe, khyo, Gurung kih ‘thou’ (2nd pers. sing.). [NSC §143]

3. Na-Dene: Athabaskan *ŋan (=*ŋan) ‘thou’: Ingalik ŋan, Hupa nан, Carrier nαn, Navajo nι; Eyak, Tlingit nι ‘thou’ (from *ŋi(n); P §273, KL 15);
   Sino-Tibetan *na-, *naŋ ‘thou’: Old Chinese *njo (subj.), *ŋja (obj.), Lushei naŋ, Garo na-?a, Dhimal na ‘thou’ (STC 93, 160). [Compared by Sapir, 1920b; also Shafer, 1952: §3.11; Pinnow, 1976, p.105; NSC §145.]

4. Na-Dene: Haida daì ‘this’; Tlingit de ‘now’; Athabaskan *di- ‘this’: Mattolle di-, Navajo di-, Chipewyan di-rî (ND §12; P §135);
   Sino-Tibetan *day (B): Old Chinese *de? ‘this’, Tibetan a-di, Kachin daì ‘this, that’ (STC 19; DK 185). [Sapir compared Athabaskan + Old Chinese, see Golla, 1984: 376; also Shafer, 1952: §3.5; Swadesh, 1952: 179.]

5. Na-Dene: Haida gú-s-u ‘what?’, us (yes-or-no question marker); Tlingit då-sa ‘what?’, sa (interrogative particle); Chipewyan -sâ id. (P §205);
Sino-Tibetan *su ‘who?’ (PS): Tibetan, Kanauri, Vayu, etc. su, Burmese a-su id., Lepcha šu ‘what, which, who?’, sā-re ‘which, what?’, sā-tet ‘how much, how many?’, sā-ba ‘where?’, sā-lo ‘how?’ (IST 135, 144). [Comparison by Sapir, 1920b; also NSC §146.]

Sino-Tibetan: Old Chinese *duy ‘who?’, Lushei to ‘who, whose?’, Tibetan du ‘how much, how many?’, Lepcha to ‘who, which, what?’ (DK 185).

7. Na-Dene: Haida -c̲, -a̱t̲, -l ‘with, of’; Mattole -t, -i-t ‘with, along with, together with’ (ND §38; P §255);
Sino-Tibetan: Tibetan la (locative), Nyising alo id., Aimol, Lamgang -le ‘with, and’, Lepcha -lā ‘also’. [Compared by Sapir, 1920b; cf. also LDC §214.]

8. Na-Dene: Eyak di- (negative); Athabaskan: Mattole do- ‘no, not’, Navajo dò-dà, Chiricahua Apache dò-dāh id. (P §239);

[Anatomical:]

9. Na-Dene *laus(-?a?) ‘tongue’ (Pinnow): Tlingit lút; Eyak lait; Yakutat (Eyak) kha-l eth; ? Navajo -lát-åh ‘point, tip, summit’ (P §68); Sino-Tibetan *let ‘tongue’ (B): Magari let, Kachin šin-lét, Old Chinese *lat (IST 14, 77; DK 225). [LDC §11]

10. Na-Dene *?a?-qa ‘mouth’ (Pinnow): Tlingit q’a-X’a-X’e; Eyak xa? ‘mouth, jaws, eating’ and/or qa ‘to bite, hold, carry in teeth or beak’; Athabaskan: Chasta Costa ya-, ya- ‘mouth’ (in compounds) (P §79);
Sino-Tibetan *m-ka (B), *kha-H (PS) ‘mouth’: Tibetan kha, Lushei ka, Lakher pø-ka (STC 120-21). [Comparison by Sapir, 1920b; also NSC §20.]

Sino-Tibetan *myak-*mik ‘eye’ (B): Old Chinese *mjôk, Burmese myak, Tibetan mig, Lepcha a-mik, Gyarung te-mňak, Mongsen -nik, Tengsa -nyik (STC 190). [Sapir (1920b) compared Tlingit and Sino-Tibetan; also Shafer, 1952: §10.3; NSC §5.]

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13. Na-Dene: Haida (Skidegate) \textit{XII} ‘neck’, \textit{Xe}f ‘region of the neck’ (Sapir, 1923), (Kaigani) \textit{h}íl ‘neck’; Athabaskan *-\textit{ýw}u-\textit{l}: Chipewyan -\textit{yúl} ‘windpipe (trachea)’, Hupa -\textit{w}ol id. (G 110);

Sino-Tibetan *(m-)*\textit{gu-}[r]: Old Chinese *\textit{ghu} ‘throat’; Tibetan m\textit{-gul}-m\textit{-gur} ‘throat, neck’, Bunar kwæn-\textit{gul}, Rgyarong m\textit{-gi} id., Lepcha tæ\textit{-gol} ‘gizzard (of fowl)’ (IST 123; Benedict 1976: 179). [Shafer, 1952: §16.4]

14. Na-Dene: Haida qán ‘chest’ (of body);

Sino-Tibetan: Burmic *\textit{ya}n ‘chest’: Burmese \textit{yín}, Atsi vän-kån. [LDC §24]

15. Na-Dene: Tlingit té\textit{X} ‘heart’; Athabaskan *t\textit{óy}-\textit{w} ‘(female) breast’ (Sapir, 1920a): Kutchin \textit{t}\textit{a}gu, Tanaina \textit{t}\textit{ogu}, Hare \textit{t}\textit{oy} id.;


16. Na-Dene: Eyak -\textit{c}a\textit{-l} ‘finger’; Athabaskan *\textit{c}a\textit{-l}-*\textit{c}a\textit{-l} ‘finger, toe’: Chipewyan -\textit{θ}a\textit{ll}- ‘finger’, -kël-c\textit{-a}l-\textit{-é} ‘toes’, Kutchin -džell ‘finger, toe’;

Sino-Tibetan: Kuki-Naga *M-\textit{c}al ‘finger’: Lushei -\textit{c}al, Bom-m\textit{-c}ar, Hlota tsù, Kom -\textit{c}é (IST 238, 260, 325). [Shafer, 1952: §16.1]

17. Na-Dene: Tlingit č\textit{d}X\textit{-l} ‘first (index) finger’; Eyak caq\textit{-s} ‘fingers, toes’.

Sino-Tibetan: Tibetan m-\textit{3ug-gu} ‘finger, toe’, Choni m-\textit{3ug}, Burig zu\textit{-h} (IST 81, 98, 107).

18. Na-Dene: Athabaskan *\textit{l}a\textit{-t} ‘hand’: Mattole -\textit{l}a?, Navajo -\textit{l}a?, Chipewyan -\textit{l}a, -\textit{l}á, etc.;

Sino-Tibetan *\textit{la}k ‘hand’: Burmese \textit{la}k, Tibetan \textit{lag}-pa, Akha à-\textit{l}à?, etc. (STC 32; Matisoff, 1985: 423). [Compared by Sapir, 1920b; cf. also Trombetti, 1926: 20; Shafer, 1952: §10.1; NSC §28.]

19. Na-Dene *\textit{q}i\textit{-k} (Pinnow): Haida (Skidegate) x\textit{ai} ‘arm’ (Sapir, 1923), (Kaigani) x\textit{á}y (xy\textit{á}y) ‘arm, wing’; Tlingit Xik ‘upper arm’ (P §60);

Sino-Tibetan *\textit{k}ai: Boro a-\textit{ka}y, ha-\textit{ka}y ‘arm, hand’, na-\textit{ka}y ‘hand’; Kachari a\textit{-kai} ‘hand’ (Matisoff, 1985: 438).

20. Na-Dene *\textit{que} ‘foot’ (Pinnow): Eyak -\textit{qi}-; Athabaskan: Hupa -\textit{xe}?, Kato -\textit{k}we?, Navajo ké-, ké?-; Tlingit -\textit{ke} ‘to track’ (G 115, P §57);

Sino-Tibetan: Kuki-Naga \textit{ke} ‘foot, leg’: Lushei, Hrangkhol, Haka ke, Hmar khe-, Kapwi ki id. (IST 233, 238, 253). [Compared by Sapir, 1920b; also Shafer,
1952, §8.1; Swadesh, 1952, p.180.]


22. Na-Dene: Tlingit tıy ‘elbow’;
Sino-Tibetan: Lepcha thu in kā-thu ‘elbow’ (kā ‘hand, arm’).


25. Na-Dene: Haida s-ku ‘back’; Tlingit quX ‘back, backwards’; Navajo -ya-yah ‘behind’ (P § 69);


27. Na-Dene: Haida s-k’áw (sk’yaaw) ‘tail’; Tlingit kí ‘rump, buttocks’;

[Natural environment:]

28. Na-Dene: Tlingit sà–sé ‘clay’; Eyak c’aʔ id. (NDE ‘clay’).

29. Na-Dene: Athabaskan *sá-y-–*sá-x ‘sand’: Kato sai, Navajo sáí, -zái, Chipewyan ʔáï, Kutchin séy, Slave ʔáï (H 7, 15; G 112);
Sino-Tibetan *r-luŋ-*r-luk ‘stone’ (B): Kachin luŋ-n-luŋ, Dimasa loŋ, Meyol lagⁿ, Megyaw kā-lok, Lashi lu·k (IST 170, 182; STC 32). [For the correspondence Haida-G- = Sino-Tibetan -ŋ- k cf. §37, below.]

31. Na-Dene *čan (Pinnow): Haida čá-n ‘mud’; Kutchin ʒính ‘muddy water’, Hupa ʒaŋ, -ʒaŋ id., Chipewyan ʒá ‘sediment’ (ND §14, G 113, P §172);  

32. Na-Dene *thó· (Sapir), *tu· (Krauss) ‘water’: Navajo to, Kato to·id., Chipewyan tū ‘water, lake’, Hupa to· ‘body of water, river, ocean’ (K 126, G 111, KL 139);  
Sino-Tibetan *tway ‘water’ (B): Old Chinese *tuyʔ; Kachin mà-dí·, Lushei tui id., Burmese tue ‘to flow’, Lepcha tū ‘to wash’ (STC 45, DK 184). [Compared by Trombetti, 1926, pp.21, 145; also Shafer, 1952, §6.1; NSC §82.]

33. Na-Dene: Haida dál ‘rain (drizzle)’ = [dáll] (Sapir, 1923, p.153);  
Sino-Tibetan: Kuki-Naga *ryal ‘hail’: Lushei rial, Rangkhol ril, Meithei lel, Thado ge·l (IST 245; STC 54). [For the correspondence: Na-Dene *d- = Sino-Tibetan *r-, see also §36, §55.]

34. Na-Dene: Athabaskan *seŋ-*ceŋ ‘star’: Ahtna sónʔ, Carrier sám, Chipewyan tōn, Mattole ciŋ, Navajo sóʔ (K 126, KL 65);  
Sino-Tibetan: Old Chinese *seŋ ‘star’; Hruso li-coŋ, Yatshumi ciŋbi, Tengsa lū-tiŋ tiŋ (IST 177). [Sapir (1920b) compared Athabaskan and Chinese. Cf. also: NSC §74; LDC §105. Note variation of s-c (ts) in both language families.]

35. Na-Dene: Haida slŋ ‘day, weather, sky’, (Kaigani) sáŋ id., sánɡa· (sangyaa) ‘night’;  

[Fauna and flora:]  
36. Na-Dene: Athabaskan *dəŋ ‘spruce hen/grouse’; Ahtna deŋ, Han dey, Chipewyan -di, Navajo dih ‘grouse’ (G 111, KL 90);  

37. Na-Dene: Haida ṭGo·-lGu ‘heron’, Tlingit laq·-laX· ‘heron, crane’; Eyak ?aŋla·-niq· ‘seagull’ (P §155);

38. Na-Dene: Eyak Gama ‘maggots’; Athabaskan *Gûn: Kutchin gîò ‘worm’, Hupa, Tututni, go ‘worms’, Kato go ‘worms’, Galice go ‘worm, maggot’ (G 116; KL 93);

39. Na-Dene: Tlingit šexw ‘red alder’;

40. Na-Dene: Eyak təXXs-təXXgs ‘cottonwood’; Athabaskan *təyës: Ahtna təyes, Minto təyeθ, Galice təs, Navajo təs (K 127, KL 107);
Sino-Tibetan: Tibetan stag-pa ‘birch tree’, Balti, Burig stak- (IST 80). [LDC §85; Note apparent metathesis TVKS-STVK.]


42. Na-Dene: Tlingit lûn [lun] ‘bark (of tree)’; Eyak təh id.;

[Verbal and descriptive roots:]
43. Na-Dene: Haida (Skidegate) tá-[tha-] ‘to eat’ (Sapir, 1923, p.146); Athabaskan *-taʔ ‘to eat’: Hupa -tan, -tûn, Kato -tan (Sapir 1920a);

44. Na-Dene *Gaen (Pinnow): Haida gîn-qen ‘to see, look’; Tlingit -Gên, -Gén, -Gên id.; Athabaskan *ges id. (from *Gen-s): Navajo gén ‘wait and see!’ (ND §98, P §295);
Sino-Tibetan *kyen (B), *qen (PS): Old Chinese *qen-s ‘to see’; Tibetan mkhyen-pa ‘to know’, Lushei en ‘to look’ (STC 51, DK 311). [Compared by Sapir, 1920b; cf. also Swadesh, 1952, p.181; LDC §122; Note the similar suffixes in Old Chinese and Athabaskan.]
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45. Na-Dene: Haida -slŋ ‘to wish’; Athabaskan *zin ‘to think, feel’: Sarsi -zin, Galice -san, Mattole -si-n, -siʔn, -siʔl, Tolowa zūn, Navajo -zin (H 3, 9); Tlingit ʃi ‘to think’ (from *d-sin?); Sino-Tibetan *sam: Tibetan sem-s ‘to think’, sem-s ‘soul, spirit, mind’, b-sam-pa ‘thought’, Tsangla sem ‘mind’; Lushei thiam ‘to know’; Old Chinese *syom (or *sam) ‘heart’ (STC 51, 126; DK 259) [Compared by Sapir, 1920b; also, Shafer, 1952, §15.2].


47. Na-Dene: Tlingit wuq ‘wide, broad’; Eyak wəX id.
Sino-Tibetan: Old Chinese *paʔk ‘wide, broad’; Haka pak, Kachin ba id., Tibetan ā-phag ‘to be enlarged, increased’ (IST 49, DK 143).

48. Na-Dene *ya- ‘all’ (Pinnow): Tlingit yá-X ‘entirely, severally, all’; Athabaskan *ya- ‘all, distributive pl.’: Mattole ya-, ya- ‘all’ (P §87);

49. Na-Dene: Athabaskan *-qaʔ: Navajo b-kàn- ‘it is sweet’, Hupa ła-xaʔn ‘sweet’, Chipewyan -kàn ‘to be sweet’;
Sino-Tibetan: Old Chinese *kam ‘sweet’; Rawang gam ‘be tasteful’. [Sapir (1920b) compared Athabaskan and Chinese; also Shafer, 1952, §15.1 Note 1- prefix in Athabaskan, and cf. Sino-Tibetan *r-, as in Kachin la-ga, Tibetan r-ga ‘old’ (STC 110).]

50. Na-Dene: Athabaskan *Goŋ- ‘(to be) dry’: Kutchin -goŋ, Chipewyan, Navajo -gàn (K 126, KL 34); Tlingit -qwan ‘to dry salmon’ (Sapir, 1920b);
Sino-Tibetan *kan ‘(to be) dry’ (B): Old Chinese *kân; Kachin kan, Burmese khan (STC 166). [Sapir (1920b) compared Na-Dene and Chinese; cf. also Nikolaev, 1991, §11.11; NSC §115.]

51. Na-Dene: Haida xil-ăr ‘to be dry’, xil-gal ‘to become dry’;

52. Na-Dene: Athabaskan *-żwəŋ(a) ‘black (thing)’: Kutchin -ʒaj, Chipewyan żan, Sarsi -zini, Navajo -zin, Beaver zûn ‘be dark’ (H 7, 22, K125, KL 35);
Sino-Tibetan *s(y)im (B): Garo sim ‘black, blue, dark’, Dimasa sim-sum id., 
Lushei thim ‘dark, darkness’ (STC 81). [NSC §126]

53. Na-Dene **cUXw ‘yellow, green’: Tlingit s'ûw ‘blue, green, greenstone’;
Athabaskan *cUXw-*cuXw?: Tanaina -cök ‘yellow’, Chipewyan -tôoy?, San 
Carlos Apache -côg id. (H 7, K 127, P §249);
Sino-Tibetan *tšak (B) = *cak: Old Chinese *thjäk ‘red’, Garo gi-ččak id.,
§11.3.]

54. Na-Dene: Tlingit X'an ‘red’; Eyak qa; Athabaskan: Carrier del-k'en id. (NDE
‘red’1);
Sino-Tibetan *kyaŋ (B): Old Chinese *khjêŋ ‘red’; Kachin khyen-čeŋ id.,
Tibetan s-kyaŋ-ba ‘to be ashamed’ (STC 45, 175).

55. Na-Dene: Tlingit dex ‘ashamed’;
Sino-Tibetan *s-rak ‘ashamed, shy’: Bunan s-rag, Burmese hrak, Mikir the
-rak (STC 106).

[Social terms:]
56. Na-Dene: Tlingit ðîk, ‘(her) brother’;
Sino-Tibetan *ik ‘older brother’ (B): Mikir ik, Burmese ac-kui (STC 36).

57. Na-Dene: Athabaskan -v3 ‘brother, sister’ in Hupa -ŋ-?oŋ ‘older brother’,
Navajo -d-e•zii ‘younger sister, mother’s sister, wife’s sister’ (G 109, 111);
Sino-Tibetan *cyäH (PS): Old Chinese *cyä? ‘older sister’; Tibetan a-che id.,

58. Na-Dene: Tlingit sì ‘daughter’; Eyak ci--ci-y ‘(man’s) daughter, (man’s)
brother’s daughter’; Athabaskan *-ce?: Hupa -ce? ‘man’s daughter’, Mattole
-ci-y-e? id., Navajo -ci? ‘man’s daughter, brother’s daughter’, Mescalero -cë?
‘daughter, son’ (P §29);
Sinto-Tibetan *tsa (B) = *ca: Maru, Atsi co ‘child’, Tibetan cha (-bo, -mo)
‘grandchild, nephew, niece’; Old Chinese *ca? ‘son, child’ (STC 27, DK 258).
[Compared by Sapir, 1920b.]

59. Na-Dene: Athabaskan *qëy ‘brother-in-law’: Tututni -këyo, Galice -këyo, 
Hupa -qëy (G 116);
Sino-Tibetan *krwë (B), *Kwriy (PS): Burmese khrwë-ma ‘daughter-in-law’,
Kachin khri ‘paternal aunt’s daughters, sister’s children; son-in-law’; Old

60. Na-Dene: Athabaskan *-wa•G: Ingalik na -vaX ‘war’, -maX ‘to struggle, wrestle’, Hupa mahn ‘war party’, Chipewyan -bà, -bây ‘to go to war’, bân-è, bâné ‘war party’, Mattole -bah, -bây ‘to go to war’, Navajo -bà? ‘war’ (G 110, KL 10, 62);

[Artifacts:]

Sino-Tibetan: Tibetan s-kud-pa ‘thread’ Balti s-kud-, Burig s-kut id.; Kuki-Naga *t-khit ‘to tie’, Kachin git ‘to bind’ (IST 80, 102, 270, 410). [The transition from anatomical terminology to technological is evident within Na-Dene.]

62. Na-Dene: Athabaskan *wat+: Kutchin vit, vid-i ‘sleeve’, Chipewyan -bår id., Carrier bad ‘mittens’ (KL 10);
Sino-Tibetan *wat: Burmese a-wat ‘clothes’, wat ‘to wear’, Gyarung te-wyet ‘clothes’, Rawang nuŋ-wat ‘to cover breasts (nuŋ) with breast-cloth’ (STC 24). [“Sleeves [in the Sub-Arctic culture area] usually consisted of half-length flaps, except in the Eastern Sub-Arctic, where separate fur sleeves were worn.” (Driver, 1969, p.149)]

63. Na-Dene: Tlingit tIx’ ‘rope, string’, -ték’ ‘to make three-stranded rope’;
Athabaskan: Babine né-l-tik ‘robe, blanket’, Carrier ná-l-tí id.;
Sino-Tibetan: Tibetan thig ‘carpenter’s cord, marking string, a line’, thig-u, thag-u ‘short cord or rope, string, twine’ [Comparison by Sapir, 1920b.]

64. Na-Dene: Haida qikw ‘basket’, Tlingit qakw;

65. Na-Dene: Haida (Skidegate) stän ‘charcoal’, (Kaigani) stañ-a-l id.;
Sino-Tibetan: Chinese thân ‘coal, charcoal; lime’ (= ashes). [Compared by Sapir, 1920b, and see Golla, 1984, p.376. The comparison may be doubtful if
the connection with Tibetan *thal*-*ba* ‘dust, ashes’ etc. is correct (STC 173, n. 461).


[Miscellaneous:]

67. Na-Dene *wan* ‘edge, boundary’ (Pinnow): Tlingit wán ‘edge’; Kyak wa•-l id.; Athabaskan *mán, *manx, *many- ‘edge’ (Sapir, 1920a; now reconstructed as *-wa-n?-a, *-wa-n?-ya ‘edge’ KL 10): Navajo bá-h ‘edge’, Sarsi -mä id., Chipewyan -bán-ë ‘edge, boundary’, Hupa man- ‘boundary, ocean’ (P §97; G 110);

Sino-Tibetan: Lepcha a-bón ‘hither, here, on this side, o-bón, pe-bón-ka ‘on the side, there’; Old Chinese *bhāŋ* ‘side’; Proto-Cantonese *män* ‘edge, brink’ (McCoy, 1980, p.210; DK 69). [Compared by Sapir, 1920b; Cantonese suggested by the present author. Are the two Chinese forms related?]

68. Na-Dene: Athabaskan *wa•l* ‘sleep’: Kutchin váh, Chipewyan bêl, Hupa miit, Navajo bi · t (G 111, KL 10);

Sino-Tibetan *myel* (B): Bahing myel ‘to be sleepy’, Kachin mye(n) ‘to fall into sleep or swoon’, Old Chinese *mian* ‘to close the eyes, sleep’ (STC 47, 173). [Comparison by Sapir, 1920b.]

PHONOLOGICAL NOTES

I do not wish to perpetuate the fallacy that regular sound correspondences, in and of themselves, constitute ‘proof’ of genetic relationship. However, once a body of likely cognates (like that above) has been assembled, correspondences can be abstracted and used to test the validity of comparisons, and as a guide in looking for new comparisons. Thus, when one suspects that Sino-Tibetan *r-* (initial) corresponds to Na-Dene *d-* (§ refers to etymology number, in Appendix A above. Proto-Na-Dene forms cited below (with **) are highly provisional and approximate.):

(§33) Na-Dene **dal* ‘rain’: cf. Sino-Tibetan *ryal* ‘hail’,

it is then advisable to compare other words involving Na-Dene *d-* and Sino-Tibetan *r-:

(§36) Na-Dene **dVx* ‘grouse’: cf. Sino-Tibetan *-rek* ‘pheasant’,
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§55) Na-Dene **dek' ‘ashamed’: cf. Sino-Tibetan *-rak id.

This is not an implausible correspondence, and is paralleled within the Caucasian family: Chechen dog, Lak dak' ‘heart’, while Avar rak', Tsez rok'o, and others retain the original *r- (Nikolaev, 1991, p.48, §1.30).

Another non-trivial correspondence involves Na-Dene *w-. It is generally agreed that Proto-Na-Dene had few initial labial consonants, possibly a simple contrast such as w- ~ w̪ (m) (cf. Krauss and Leer, 1981). In any case, in the above comparisons all Sino-Tibetan initial labials (p, b, m, w) appear to correspond to Na-Dene *w-:

§11) Na-Dene **waG 'eye': cf. Sino-Tibetan *myak id.

§46) Na-Dene **wVN 'full': cf. Sino-Tibetan *p/bliŋ id.

§47) Na-Dene **wVQ 'wide': cf. Sino-Tibetan *pak id.

§60) Na-Dene **waG 'war': cf. Sino-Tibetan *mak id.

§62) Na-Dene **wat 'sleeve': cf. Sino-Tibetan *wat 'clothing'.

§67) Na-Dene **wan 'edge': cf. Sino-Tibetan *man or *baŋ(g) id.

§68) Na-Dene **wVl 'sleep': cf. Sino-Tibetan *myel id.

Since the Na-Dene paucity of labials is typologically unusual, evidence from Sino-Tibetan and other Dene-Caucasian languages points to a full array of labials (*p [ph], *b, *m, *w, and doubtfully *p') in Proto-Dene-Caucasian (cf. Bengtson, 1991c; Blazek and Bengtson, 1995). The Na-Dene merger is apparently an innovation. Sino-Tibetan final -m, however, corresponds to Na-Dene -N (a nasal of uncertain quality: possibly -ŋ or -ŋ̱):

§31) Na-Dene **caN-**ŋaN 'mud': cf. Sino-Tibetan *čim-*ʒim id.

§45) Na-Dene **šN 'think': cf. Sino-Tibetan *sam 'think; heart'.

§52) Na-Dene **šwVN 'black': cf. Sino-Tibetan *s(y)im id.

§49) Na-Dene **qaN 'sweet': cf. Sino-Tibetan *kam id.

§66) Na-Dene **qiN-**quN 'house': cf. Sino-Tibetan *kyim-*kyum (*qim per Starostin) id.

These examples suggest that Sino-Dene (Dene-Caucasian) is subject to the same principles of phonetic regularity that are known to exist in all accepted families. As Sapir put it: “It [Sino-Dene] is all so powerfully cumulative and integrated that when you tumble to one point a lot of others fall into line” (letter to Kroeber, 1921: in Golla, 1984, p.374).

APPENDIX B: Some Dene-Caucasian Etymologies

   Caucasian *qʷəntV ‘elbow, knee’: Tsez qʷqntu ‘knee’, Khwarshi qʷontu id.,
Lezgi qünt ‘elbow’;
Sino-Tibetan: Old Chinese *s-gyit ‘knee’, etc. (see Appendix A: §23);
Yeniseian *g/i/d ‘joint: Ket ul’-git ‘elbow’, Assan kenar-xat-ken ‘elbow’ (kenar ‘arm’), pul-gat-ken ‘tibia’;
Na-Dene: Athabaskan *-GUt’ ‘knee’ etc. (see Appendix A. §23).

2. Burushaski *-sim-, -sum- in a-sim-uc ‘stars’ (singular a-si from *-si), (in the Werchikwar dialect) a-sum-un ‘star’;
Kusunda saʔn-aʔ ‘star’;
Sino-Tibetan: Old Chinese *seʔ ‘star’, etc. (see Appendix A: §34);
Na-Dene: Athabaskan *saŋʔ–caŋʔ ‘star’: Carrier səm, etc. (see Appendix A: §34). [NSC §74; LDC §105]

3. Basque kaiku ‘wooden vessel or cup for collecting milk’;
Caucasian *qwâqwV: Lezgi XwaX ‘trough’;
Sino-Tibetan *kuk ‘basket’, etc. (see Appendix A: §64);
Yeniseian *qok–: Ket xék-t(e), kík-ti ‘spoon’;

4. Basque ilhinti–illindi ‘firebrand, embers’;
Caucasian *lwîndV ‘firewood’: Andi luði, Hunzib huðu, Chamalal tunni, etc.;
Na-Dene: Eyak lid–lad ‘dead wood, dry wood’; Athabaskan: Chipewyan -lîr, -târ, -tîr, -lîy ‘to dry (leaves, bark, grass, etc., in the sun or by the fire)’. [LDC §72]

5. Burushaski čî-ki ‘musk (of person or plant);
Yeniseian *šîk ‘resin’: Ket dיוik, Kott čîk;

6. Basque mulho–mulo ‘small hill’;
Caucasian *mušalV ‘mountain’: Archi mul, Avar mešer, Andi mahar;
Sino-Tibetan: Kuki-Chin *mual ‘mountain, hill’: Lushei mual, Khimi moi, Chairel mol, Anal mul, Bom ka-mur. [LDC §113]

These examples give an idea of the common Dene-Caucasian lexicon that is now being compiled. The last three comparisons differ from the others in that either Na-Dene or Sino-Tibetan is not represented.
Note also a phonetic regularity in §1 and §4: nasal + apical cluster (-nt-, -nd-) in the western languages (Basque, Caucasian) vs. simple or glottal apical (-d, -t') in the eastern (Sino-Tibetan, Yeniseian, Na-Dene).

**ABBREVIATIONS** (Used in Appendices A and B)

<table>
<thead>
<tr>
<th>ABBR</th>
<th>DESCRIPTION</th>
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<td>B</td>
<td>Sino-Tibetan (or Tibeto-Burman) reconstruction by Benedict (1972, 1976, 1993)</td>
</tr>
<tr>
<td>DK</td>
<td>Drevnekitajskij (Starostin, 1989a)</td>
</tr>
<tr>
<td>G</td>
<td>(Golla, 1964)</td>
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<td>H</td>
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<td>IST</td>
<td>Introduction to Sino-Tibetan (Shafer, 1966-1974)</td>
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<td>KL</td>
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<td>LDC</td>
<td>Lexica Dene-Caucasica (Blažek and Bengtson, 1995)</td>
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<td>ND</td>
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<td>(Pinnow, 1966)</td>
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<td>PS</td>
<td>Sinto-Tibetan reconstruction by (Ilya) Pejros and (Sergei) Starostin (Starostin, 1984, 1989a, 1989b, 1991)</td>
</tr>
<tr>
<td>STC</td>
<td>Sino-Tibetan Conspectus (Benedict, 1972)</td>
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</tbody>
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**TRANSCRIPTIONS**

I have attempted to normalize transcriptions in the following ways: • for vowel length (a•=ä, etc.); fronted velars as ǩ, ǧ, ť̌, ŭ̌ (= ǩy, ǧy, tš, dž); uvulars as q̌, Ǧ, X̌, ř̌; affricates as ť, ǩ, 3̌, 3̌ (= tš, ťš, dž, ďž); glottal stop as ?, and glottalized consonants as ť, ǩ, etc.; h is the unvoiced pharyngeal fricative of northern Haida and Caucasian; ř̌ is the corresponding voiced fricative; ř̌ is the unvoiced lateral fricative (I is always unvoiced in Tlingit); hook (a, i, etc.) indicates nasalized vowel; ~ denotes ‘varies with’ (dialectal variation or alternative reconstructions). Otherwise, characters have their usual values. In a few cases, forms have been left as found in the original source.

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