COMPARATIVE ESKIMO DICTIONARY
With Aleut Cognates

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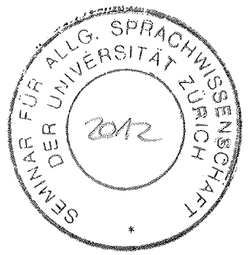

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INTRODUCTION

Eskimo-Aleut languages are spoken across the top of North America, from the Aleutian Islands to East Greenland, and on the coast of the Chukchi Peninsula, the eastern extremity of the Asian continent. Although relationships to other language families are open to question, the connection between the Eskimo and Aleut branches is certain, first suggested in Cook and King (1784) and formulated by Rask in 1819 (Thalbitzer 1916 and 1921). The Eskimo sub-family in turn comprises at least two branches: Yupik and Inuit. Sirenikski has been proposed as a third branch, as discussed below.

The Yupik languages, spoken in an area which probably included the Eskimo 'homeland' (see Fig. 1), are more sharply differentiated than the different varieties of Inuit, which form a rough dialect continuum (see Fig. 2). For the purpose of this introduction, these varieties will be referred to as languages, since the dictionary represents them in a parallel fashion to the Yupik languages. Some transitions within Inuit are more abrupt than others. Intelligibility today between the two ends of the continuum is minimal. At one end of the continuum the Seward Peninsula dialects are distanced from neighboring Inuit by the phonological influence of a Yupik substrate. In earlier times there must have been a Yupik continuum from St. Lawrence Island and the opposing shore of Chukotka northwards and across the Bering Strait, through the Seward Peninsula and south to the Pacific coast of Alaska, later broken by the Inuit intrusion onto the Seward Peninsula, probably less than five hundred years ago. At the other end, East Greenlandic has undergone massive word-replacement (owing to ritual name-avoidance) on top of certain accelerated phonological developments (but not so much so nor so deeply so as to be considered an Inuit grouping separate from other Greenlandic in this work). North Greenlandic, note, is a late intrusion from Canada, but has been drawn lexically more and more into the Greenlandic group of dialects in recent times.

More problematical is the relationship to the rest of the family of Sirenikski, spoken fluently today in Chukotka by only two elderly people. This highly divergent form of Eskimo has unique traits both archaic and innovative, and has undergone strong influence from neighboring Chukchi (as have the other two Eskimo languages in Chukotka). Sirenikski has apparently borrowed extensively from neighboring and dominant Central Siberian Yupik, often with total or partial adjustment to fit Sirenikski phonology. Today, Sirenikski is closer to Yupik than to Inuit. However, Sirenikski may actually be a third branch of Eskimo along with Yupik and Inuit. Thus PY-S (Proto-Yupik-Sirenikski) may be a fictitious entity but is used here for convenience, since in many cases where a Proto-Yupik form is also represented in Sirenikski (but not Inuit), it is impossible to determine whether or not it was borrowed from Central Siberian Yupik.

The basic criterion for setting up a PE (Proto-Eskimo) comparative set in this dictionary is that attested cognates should exist in at least two of the ten languages (or dialect groupings, in the case of Inuit) including at least one from each side of the family. A similar principle holds for PY (Proto-Yupik) and PI (Proto-Inuit) sets *mutatis mutandis*. The homogeneity of these hypothetical proto-phases in space and time is subject to doubt, however, as innovative traits, both phonological and lexical, have diffused across boundaries at different stages. The break between PY and PI is nevertheless abrupt enough in terms of phonological and lexical isoglosses to sanction the traditional division between the two major branches of the family. Because of the large number of borrowings from Central Siberian Yupik into Sirenikski and Naukan Siberian Yupik and the difficulty of distinguishing borrowings from cognates, cases where related forms are present only in these Siberian Eskimo languages and nowhere else are not always entered as sets. Forms found in only one of the ten Eskimo languages are included in an appendix following the bases if an Aleut cognate can be identified. Note also that Bergsland (1994) in Appendix 10 gives a list of loans and diffusions between Eskimo languages and Aleut.

In some cases a form in a modern language may include morphemes which extend the posited proto-form. Occasionally, certain modern forms may not include suffix morphemes found in posited proto-forms. No distinction has been made in this edition between cases where a derived word in a daughter language is derivable from the posited proto-form purely by recognized processes (described below) and those cases where the derived word — while clearly belonging to the comparative set — is derived by other than recognized processes, i.e. through unexplained correspondence sub-rules, contaminations, anomalous changes, etc.

A dash indicates that there is no attested cognate in a given language. That is, either no cognate exists or else none is recorded in available sources. In general, no distinction has been made between the following cases: 1) a cognate has been sought by elicitation from a range of speakers of the language in question but has not been found and therefore presumably does not presently exist in that language, and 2) no cognate is attested in available sources but one may yet exist in the language and might be found by elicitation.

The symbol ➡ found in a main set indicates that although no reflex is given in the main set, a reflex will be found in a derivative set beneath the main entry.

When cognates on successive lines bear exactly the same meaning, the gloss has not been repeated but can be assumed to carry down from above. Glosses from original sources in other languages are given in English translation, and all forms are phonemicized unless there is some reason for uncertainty. In such cases, forms are cited as given in the source named. Uncertain proto-form glosses are followed by a question mark. The criterion for entering a cognate set indented as a derivative beneath a main entry is that it should not be completely predictable

from the constituent base plus postbase(s) but should contain morphological or semantic idiosyncracies of linguistic interest. Cross-references to ingredient postbases are given when these postbases have been set up as proto-form sets in the postbase section. The criteria for postbase sets are the same as for base sets. When a decision between two competing proto-form reconstructions is problematical, both of them are given, separated by 'or'. Two proto-forms separated by 'and' are given when there are two different formative patterns for a derivative set embodying the same idea. It should be borne in mind that parallel derivatives may develop independently in the different languages. (Thus it is possible to reconstruct a 'proto-Eskimo' form *qinəʁun for 'telescope'!) Moreover, some derivatives must have spread locally, so, strictly speaking, their assignment to a particular proto-stage is not always justified.

Probable cognates in Aleut, a much more distantly — but clearly — related language, are cited in brackets following PE, PY, PY-S or PI forms. A PY (or PY-S or PI) form that has an Aleut cognate must have been present in PE as well; however, since it is attested today only in Yupik (or Yupik-Sirenik or Inuit) the proto-form reconstruction is in PY (or PY-S or PI) and not PE. Proto-Eskimo-Aleut reconstructions have not been attempted, but the sound correspondences necessary for reconstruction can be found in Bergsland 1986. (Only the most important ones are mentioned below.) Such reconstructions would not look very different from the PE ones except in distinguishing a PE-A t_1 and t_2 (the latter perhaps from an affricate *c) and apparently also a PE-A c_1 and c_2.

The dictionary also contains 'old' loan words, that is, from Aleut, Chukchi, Old Norse and Athabaskan languages, that meet our distributional criteria for inclusion. The forms given are reconstructions of the original borrowings and are not preceded by 'PE', 'PI' or 'PY'. In fact many if not most of these loan words were borrowed independently into several of the present-day languages or borrowed into one and diffused to other(s), rather than being borrowed at a proto-stage. Chukchi loans found only in the Siberian Eskimo languages are specifically excluded since they are probably of more recent date, and for the same reason Russian and English loans are excluded.

As a reasonable estimate, one could suggest that our reconstructed PE belongs to a period some time around two thousand years ago, whereas hypothetical PE-A would belong to a period of one to two thousand years earlier than that (cf. Dumond 1987 and Fortescue 1985). PI can be dated to around a thousand years ago in North Alaska, about the same time as the linguistic ancestor of Alaskan Yupik moved down onto the Alaska Peninsula and the Gulf of Alaska. The extension of Canadian and Greenlandic Inuit south from the High Arctic to Labrador and southern Greenland (along both coasts) took place gradually over the following centuries. Aleut is believed to have been spoken on the Aleutian archipelago for at least three thousand years, but with a later partial overlay of a single eastern dialect of the language obscuring earlier variation so that the dialect variation today is not so great as might be expected. Eskimo has been spoken on the Chukchi Peninsula for at least two thousand years, with Sirenikski possibly representing a first wave of arrivals from what is believed to be the point of origin of Eskimo culture on the Alaskan side of Bering Strait.

Forms unmarked as to dialect represent either the default dialect, as explained below, or are present throughout the language. Other dialect forms follow these default or general forms and are marked as to their dialect. Exceptions to this pattern are made clear by punctuation and dialect markings.

PE (AND LATER) PHONEMES

Non-PE phonemes are given in parentheses

Consonants

p	t	c^1		k	q	(ʻ)[2]	
v (w)	ð l	(z)	(ž)[3]	y	ɣ	ʁ	
(f) (ẉ)	ɬ	(s)	(š)[3]	(y̰)	(x)	(X)	(h)
m	n				ŋ	(ñ)	
(m̥)	(n̥)				(ŋ)		

Palatalization and labialization (both non-PE) are shown with superscripts: l^y, $ɬ^y$, n^y, k^w, q^w, $ɣ^w$, $ʁ^w$, x^w, X^w, $ŋ^w$, and $ŋ^w$. Gemination is shown by doubling consonants.

Vowels

i/i[4]	u
ə	
a	

Length is shown by doubling vowels.

Notes to charts above

1. A palatal affricate, [č], with the following exceptions: an alveo-palatal affricate, [ts], in Central Alaskan Yupik when followed by ə, a dental affricate, [t̪s], in Sirenikski, and a palatalized dental stop, [tʸ], when followed by a consonant in North Alaskan Inuit. (The sounds in daughter languages are of course not all derived from *c.)
2. Glottal stop in some Inuit; however, an apostrophe is also used for Alutiiq Alaskan Yupik to indicate a dropped intervocalic consonant which continues to affect the prosody.
3. Degree of retroflexion varies with language and dialect.
4. Reflex of *ə (the so-called 'weak' i) given only for North Alaska forms, phonetically identical to i (see Kaplan 1981a).

For purposes of alphabetization ð counts as d, ə as e, ɣ as g, and ʁ as r. ŋ follows n, X follows x, a symbol with a diacritic follows the corresponding symbol without the diacritic, and a labialized or palatalized consonant follows the corresponding plain consonant. Thus the alphabetic order is: a, c, ð, ə, f, ɣ, ɣʷ, h, i, i̯, k, kʷ, l, lʸ, ɬ, ɬʸ, m, m̥, n, nʸ, n̥, ŋ, ŋʷ, ŋ̊, ŋ̊ʷ, p, q, qʷ, ʁ, ʁʷ, ʁ̃ ,s, š, t, u, v, w, w̥, x, xʷ, X, Xʷ, y, y̥, z, ž, ʻ. (In practice alphabetization in the bases and postbases sections applies only to PE, PI and PY forms and loans, and therefore does not involve all of the above symbols). Material in parentheses indicates uncertain elements within a form and does not count in alphabetization.

The reader is directed to the works listed in the bibliography for information on standard practical writing systems — in Cyrillic, Roman, and Syllabics — used with the various Aleut and Eskimo languages. Brief discussions of the equivalences between standard writing and that used in this work will be found in the Aleut, Central Alaskan Yupik, Eastern Canadian Inuit and Western Greenlandic to proto-form index sections.

LANGUAGES, DIALECTS, AND ABBREVIATIONS

Division into dialects is problematical and uneven and often reflects available sources of information more than actual dialect differences. Note that in the following a list of subdialects of a given dialect is not necessarily exhaustive for the dialect, but only represents varieties considered especially relevant for this work and where documentation is available (and likewise for sub-subdialects). Dialects and subdialects are listed in rough geographical order.

Alutiiq (**AAY** - Alutiiq Alaskan Yupik), also called Pacific Yupik or Sugpiaq, is spoken in Alaska on the shores of Prince William Sound, at the tip of Kenai Peninsula, on Kodiak Island, and on the Alaska Peninsula.

Dialects and subdialects:

- Chugach (**C**)
  - Prince William Sound (**PWS**)
  - Kenai Peninsula (**KP**),
- Koniag (**K**)
  - Kodiak (**Kod**)
    - Afognak (**Afog**)
  - Alaska Peninsula (**AP**)
    - Perryville (**Perry**)

Central Alaskan Yupik (**CAY**) is spoken in southwestern Alaska around Bristol Bay and the lower drainages of the Yukon and Kuskokwim Rivers.

Dialects and subdialects:

- Egegik (**Eg**)
- General Central Yupik (**GCY**)
  - Lake Iliamna (**LI**)
  - Nushagak River (**NR**)
  - Bristol Bay (**BB**)
  - Kuskokwim (**K**)
    - Lower Kuskokwim (**LK**)
    - Upper Kuskokwim (**UK**)
    - Nelson Island (**NI**)
    - Yukon (**Y**)
  - Hooper Bay-Chevak (**HBC**)
  - Nunivak (**Nun**)
  - Norton Sound (**NS**)
    - Norton Sound Kotlik (**NSK**)
    - Norton Sound Unaliq (**NSU**)

For some purposes it is desirable to group Y, LI and UK as 'peripheral' GCY, and LK, and BB as 'core' GCY, with NR and NI falling somewhat in between peripheral and core.

Naukan(ski) (**NSY** - Naukan Siberian Yupik) is actually intermediate between Central Alaskan and Central Siberian Yupik, with the term "Siberian" reflecting geographical rather than linguistic position. It was spoken at East Cape on the Chukchi Peninsula of the (former) Soviet Far East, until the population was relocated to Lavrentiya and other settlements in 1958.

Central Siberian Yupik (**CSY**) is spoken on St. Lawrence Island, Alaska and on the opposite coast of Chukotka.

Varieties:

- Chaplinski (**Chap**)
- St. Lawrence Island (**SLI**)

Note that separate designations for SLI and Chap represent a difference in sources more than an actual dialect difference, although traces of subdialectal variation are present in both varieties.

Sirenik(ski) (**Sir**) was spoken in Sireniki, Chukotka, and is remembered by two elderly persons, of whom Vye was Orr's, Krupnik's and Vakhtin's primary informant.

Seward Peninsula Inuit (**SPI**) is spoken on the Seward Peninsula in northwestern Alaska and adjacent islands in Bering Strait.

Dialects:

- Bering Strait (**BS**)
  - Imaqliq or Big Diomede (**Imaq**)
  - Little Diomede (**Di**)
  - King Island (**KI**)
  - Cape Prince of Wales (**W**)
- Qawiaraq (**Qaw**)
  - Fish River (**FR**)
  - Unalakleet (**Unk**)

Note that separate designations for Di and Imaq represent a difference in sources more than an actual subdialect difference.

North Alaskan Inuit (**NAI**) is spoken in northern and northwestern Alaska with extensions to Norton Sound and into Canada.

Dialects:

- Malimiut (**Mal**)
  - Kobuk (**K**)
- North Slope (**NS**)
  - Point Hope (**PH**)
  - Barrow (**B**)
  - Nunamiut (**Nu**)
  - Uummarmiut (**Uum**)

Western Canadian Inuit (**WCI**) is spoken in northwestern Canada from the Mackenzie Delta to the (south)western shore of Hudson Bay.

Dialects:

- Siglit (**Sig**)
- Copper (**Cop**)
- Caribou (**Car**)
  - Eskimo Point (**EP**)
- Netsilik (**Net**)
  - Utkusiksalingmiut (**Utk**)

Eastern Canadian Inuit (**ECI**) is spoken in the eastern Canadian Arctic including part of the western shore of Hudson Bay and extending to the Davis Strait, including Labrador.

Dialects:

- Aivilik (**Aiv**)
- South Baffin (**SB**) — including Frobisher Bay (**FB**)
- Tarramiut (**Tar**)
- North Baffin-Iglulik (**NBI**)
  - Iglulik (**Igl**)
- Itivimmiut (**Iti**)
- Labrador (**Lab**)

Greenlandic Inuit (**GRI**)

Dialects:

- North Greenlandic/Polar Eskimo (**NG**)
- West Greenlandic (**WG**)
  - Upernavik (**Up**)
  - Southwest Greenlandic (**SWG**)
  - Northwest Greenlandic (**NWG**)
- East Greenlandic (**EG**)

NWG corresponds to Schultz-Lorentzen's 'N.G.', and SWG to his 'S.G.' (the latter including Central West Greenlandic around Nuuk).

DEFAULT DIALECTS, DEFAULT AND OTHER SOURCES, AND ORTHOGRAPHIC ISSUES FOR INDIVIDUAL LANGUAGES

Alutiiq Alaskan Yupik

Default dialect: Kenai Peninsula
Default sources: (J. Leer's dictionaries and files)
Additional sources: Birket-Smith 1953

An apostrophe is used when prosody indicates that a consonant has dropped intervocalically but that consonant is not determinable within AAY. Consonants which appear only in some forms in some dialects are in angled brackets.

Entries are given in their preprosodic forms, that is, without indication of rhythmic length or prosodically caused gemination or fortition. Compressed like vowels are written long (double) if and only if it is ascertainable within AAY that they are indeed compressed and not underlyingly short. (See Leer in Krauss 1985 for information on compression, fortition, and AAY prosody.)

Central Alaskan Yupik

Default dialect: General Central Yupik
Default source: Jacobson 1984
Additional sources: Holtved's notes for Mountain Village & Hooper Bay, Hammerich's ms. lexicon for Nunivak, and Lantis's notes for Nunivak

Entries are given in their preprosodic forms, that is, without indication of rhythmic length or prosodically caused gemination. ə deleted for prosodic reasons (in dialects other than NSU) is not written. ə which appears only in some forms is in angled brackets. In those dialects (Eg, Nun and HBC) in which compression occurs, compressed like vowels are written long (double) if and only if it is ascertainable within that dialect that they are indeed compressed and not underlyingly short.

Nun forms are written as pronounced with final fricatives rather than stops, and with geminated fricatives devoiced. However, if a Nun form differs from the form used elsewhere only in one or both of these two ways, then the Nun form is not listed separately.

w is distinguished from v and y from z even though in some dialects w becomes v under certain conditions and similarly y becomes z. w is distinguished from ɣʷ even though they are in complementary distribution except when geminated. w̥ as written here is equivalent to xʷ. Initial ua, ui, and ia are indistinguishable from waa, wii, and yaa respectively, and are written here in the latter form. Initial ə is written even when silent or almost silent and its presence ascertainable mostly — and sometimes only — from its effect on prosody.

Naukanski Siberian Yupik

Default source: Menovshchikov 1975
Additional sources: Manuscript dictionary by I.V. Avtonova, dictionary files by Emel'yanova (annotated by E. Golovko), wordlist by Tasyan Tein from *I Bylo Tak*, and forms received via S. Taghyuq from Akukin by D. Orr and from N. Enmenkau and other Naukan speakers present at the 7th Inuit Studies Conference in Fairbanks; Bogoraz texts.

Underlying ia and ai are phonetically identical, realized as [e:] and written ē in Soviet sources. There is a slight diphthongization of this sound, giving something close to [ea] (see Krauss 1985). We write ia for all such vowels, whether the source is ai or ia. On the other hand, underlying au and ua are phonetically distinct. Underlying au is realized as [a:]; written ā in Soviet sources, and we write aa here. Slightly diphthongized ua sounds like [ɔa], is written ō in Soviet sources and ua in this work. (Underlying iu is realized as [i:] and written here as ii; ui undergoes no change.)

The present/habitual postbase aqə- is deleted from verbal forms as cited in Soviet sources.

Central Siberian Yupik
Default source: Badten et al. 1987
Additional sources: Rubtsova 1971, Vakhtin and Emel'yanova 1988

Entries are given in their preprosodic forms, that is, without indication of rhythmic vowel length or "overlength" (see Krauss 1975).
w as written here is equivalent to ɣʷ, and ẉ as written here is equivalent to xʷ.

The present/habitual postbase aqə- is deleted from verbal forms as cited in Soviet sources.

Sirenikski
Default source: Menovshchikov 1964
Additional sources: N. Vakhtin's Sir dictionary files compiled from texts gathered by Men., Rubtsova and himself, dictionary files by Emel'yanova, word list from Miller, forms received from Vye by I. Krupnik and D. Orr

The present/habitual postbase cəqəʀ- is deleted from verbal forms as cited in Soviet sources. With transitive forms as customarily cited (because of the addition of certain postbases), it is not usually possible to distinguish ɣ/ʀ bases from xtə/Xtə. Vowel length is problematical. Theoretically, long vowels should not exist; however vowel length is sometimes indicated in the default source marked here with an acute accent perhaps actually indicating prototonic stress. Also forms that may be borrowings from CSY (rather than cognates) sometimes apparently have shortened the original long vowels. It is not always possible to distinguish between cognates and recent CSY borrowings which have undergone partial or complete adaptation to Sirenikski phonology. Nevertheless, all forms reported by our informants as Sirenikski rather than CSY are included with the understanding that some may in fact be borrowed.

Seward Peninsula Inuit
Default dialect: King Island
Default source: L. Kaplan's ms. dictionary - King Island unless otherwise specified
Additional sources: Menovshchikov 1980 for Imaqliq, essentially the same dialect as Diomede, Kaplan's Diomede files, Kaplan's Qawiaraq ms. dictionary, Jenness 1928 for Wales

Forms are given with consonants deleted or lenited by consonant weakening (see Kaplan in Krauss 1985). Geminate consonants are only contrastive after the first short vowel of the stem. Otherwise, length of intervocalic consonants is not contrastive and depends on position in the word, so all such consonants are written single. The present/habitual postbase žaq/taq/ɣaq- is deleted from verbal forms as cited in Soviet sources. Although phonemically triple vowels may result from consonant deletions in the King Island dialect, these are almost always across morpheme boundaries and do not figure here. Half-long a (written a·) results from deletion of a syllable-final uvular following the vowel a.

North Alaskan Inuit
Default dialect: Barrow
Default source: ANLC ms. dictionary (MacLean et al.)
Additional sources: Kobuk Junior Dictionary (Sun et al. 1979) and/or W. Seiler's manuscript dictionary for Malimiut

Intervocalic recessive continuants which appear only in certain forms/derivatives are in angled brackets. Palatalized t is written c. For Kobuk (northern Malimiut) diphthongs which are leveled and assimilated are written as if they were full contrasting diphthongs. Reflexes of *ə are written i to distinguish them from reflexes of *i which cause palatalization of alveolars and — in Malimiut — some velars. i and i are almost always indistinguishable phonetically. In other varieties of Inuit, this distinction is not nearly so important as in NAI and is therefore not noted. (See Kaplan 1976 and Rischel 1974.)

Western Canadian Inuit
Default dialect: Copper
Default source: M. Métayer 1953
Additional sources: Lowe 1983, 1984b, Rasmussen's texts for Net and Car, etc.; available section (the a's only) of D. Pryde's ms. dictionary, Dorais 1990 for Net and Baker Lake, Owingayak 1986 for EP

Where dialect forms have either s or h, only the s form is given. Net, Car and Cop always have geminate xx, XX and ff for C+*s, and have h initially and intervocalically rather than single s, but these dialects do have ts (tt in Cop).

Glottal stop (written apostrophe) is indicated only when phonologically distinctive.

y before another continuant (including a second y) is written as in other WCI but pronounced as an alveopalatal affricate in Sig; ts is written as in other WCI but pronounced tc in Sig.

Eastern Canadian Inuit
Default dialect: Tarramiut and other Eastern Canadian dialects as given in Schneider
Default source: L. Schneider 1966, 1985
Additional sources: L.-J. Dorais 1978, 1975b, etc., for NBI and SB, Spalding 1979 for NBI and R. Jeddore — or Peck where noted — for Lab; note that Schn.'s 'adg' usually means Car but sometimes refers to Aiv

For ECI ʀs is written rather than qs as further west, though the actual phonetic difference may not be as great as the difference in writing suggests. Also ʀ plus a stop is written even for Tar though q plus the stop might be more accurate phonetically. For consistency yy and qq and ʀʀ are written rather than ty, ʀq or qʀ as in Schn. and y is written for Iti ž. Syllable-final consonants deleted by 'Schneider's law' (discussed below) are indicated in brackets. (When there is doubt C is written). Labials or velars plus C are given in their assimilated Tar forms (i.e. CC, or ts for *Cs/Cɬ). For modern Lab (which has largely neutralized the

uvular/velar distinction, especially finally and before a consonant) ɣ and xx (Jed.'s qq) are written for *ɣ/ʀ and *ɣɣ/ʀʀ (except when the citation is of an earlier preneutralized form, e.g. Bourquin, who also has the q/k distinction finally), and qq is written for Jed.'s kq. For consistency yy is written for Jed.'s tj , and ff for Jed.'s pv.

Greenlandic Inuit (GRI)
Default dialect: West Greenlandic (central)
Default source: Schultz-Lorentzen and Berthelsen et al. (Ordbogi/ Oqaatsit) Additional sources: M. Fortescue's ms. word list for Up; Fortescue 1991 supplemented by Holtved's files for NG and Robbe & Dorais 1986 for EG

Forms are cited with all assimilations as in the new orthography, but s and š are distinguished as in the old (Kleinschmidt) orthography. Verbal ɣ-final and t-final bases are distinguished as in the old orthography although this is sometimes spurious. Verb-forms ending in -poq in the old orthography are given as t-final bases.

The old orthographic forms are cited when they show relevant unassimilated clusters of consonants or vowels. Assimilation processes were being generalized at the time when old spellings were fixed, ca. 1850-1870. Sometimes, old orthographic clusters are spurious (i.e. attempts at historical reconstruction), and we note these cases.

For phonetic accuracy c rather than s is written word-initially for EG, and C is written at the end of historical ɣ-final or t-final verbal bases.

For phonetic accuracy h is written for NG corresponding to a single s (or š) in WG, but as in WG ss is written when double. Earlier labial plus C clusters are given in assimilated (CC) form. NG (unlike WG which is the basis for the practical orthography) has syllable-final q and k on verb bases and they are written as such. Very recent vowel sequence changes are not indicated, e.g. *ua to aa and *ui to ii.

Aleut (Al)
Default dialect: Atkan
Source: Bergsland 1980, 1986, and 1994 supplemented with additional items and comments from Bergsland

Forms cited have been converted to the phonemic orthography employed in the present work, with nominal vowel-final bases indicated by a hyphen before final X. Eastern Aleut (EA) and Attuan (Att) dialect forms are indicated where appropriate.

Additional points:
'Positional (nominal) bases' and 'emotional (verbal) roots' (see Jacobson 1983) are marked accordingly: the former are followed by a hyphen to indicate obligatory possessed marking, and the latter are given with yuɣ- (a typical postbase for such roots) in parentheses following them. 'Deep roots' (usually monosyllabic and occuring as part of a longer base) are not treated as independent entries, but a relationship between bases containing a particular deep root is indicated by 'cf.' and information in square brackets. Yupik 'postural roots' (see Jacobson 1983) are given without any of the obligatory suffixes.

Yupik verbal tə-final bases usually correspond to PE bases ending in t; in Sir there is a fluctuation between tə bases of this sort and bases in final t (compare under t-[1]). In Inuit east of NAI, verbal bases in ut(i)- ('with, for') are cited with the i in parentheses, since this regularly drops except before truncating postbases. Nominal bases are cited in absolutive citation form, not as underlying bases (except the positional bases mentioned above and certain others requiring obligatory possessor marking).

Final 'strong' q (or ʀ) behaves under suffixation in a manner parallel to k (or ɣ) as regards truncation. Strong q (written as q*) is differentiated only for CAY, CSY, NAI and GRI. Parentheses for the latter indicate fluctuation — usually strong in singular only. Where q* does not follow ə (or VV in CSY), it may reflect a contraction. Not all available information concerning q* is incorporated into this edition; for some languages information on this point is not readily available, and moreover, in many cases the distinction between q* and 'weak' q is highly variable depending on speaker or is totally absent.

It is assumed that PE had no double vowel sequences and had syllable-final obstruents that could have been stops or fricatives (written here as the latter except for t). Original geminate consonants are assumed, though reduced in Yup and Sir, though the status of some PI geminates is in doubt (the second consonant is then written in parentheses). Original continuant + stop and continuant + continuant clusters are assumed, also stop + continuant with deleted ə. PE ɬ is assumed to derive from pre-Eskimo (perhaps pre-Eskimo-Aleut) clusters like *tl (if not from contact devoicing). ɬ is written in PE forms intervocalically and next to a fricative but not next to a stop, where neutralization is assumed.

PI forms have word-final stops (as do PY and PY-S nominal forms). Unlike PE forms, PI forms may have vowel sequences. They also have ž rather than ð, as do PY and PY-S forms, but ə and c like PE and PY; s and š are assumed for both PI and PY in certain positions.

PRINCIPAL SOUND CHANGES FROM PROTO-ESKIMO TO THE MODERN LANGUAGES

Subscripts on abbreviations in the following indicate to which of the ten Eskimo languages (as considered in this work) the dialect in question belongs. Thus, K_{AAY} is the K dialect of AAY. that is, the Koniag dialect of Alutiiq Alaskan Yupik, while K_{CAY} is the K dialect of CAY, that is, the Kuskokwim dialect of Central Alaskan Yupik.

In discussing Inu "original i" means i from PE i rather from PE ə, that is, not i.

A. Consonants

1. PE k: Intervocalic *k goes to ɣ in Inu, except after intitial vowels of words. Remaining k, and other stops, may reflect earlier geminates or clusters. More generally *k goes to ɣ non-initially in EG_{GRI} and in 'weak' position in non-Qaw SPI. *qVk- goes to qVq- in WG_{GRI} and EG_{GRI} *k goes to c following original i(C) in northern Mal_{NAI} in some morphemes. Final *k goes to x in Sir and Nun_{CAY}. Initial *k is dropped in some words (including when from PE t) before ə in GCY_{CAY} and NS_{CAY} (e.g. əntə- from *tənət- by way of kəntə-), and when followed by əx in AAY and CSY.

2. PE q: Intervocalically *q goes to ʀ in Inu, except after initial vowels of words Remaining q, and other stops, may reflect earlier geminates or clusters. More generally *q goes to ʀ non-initially in EG_{GRI} and in 'weak' position in SPI, and to X in Tar_{ECI} and Lab_{ECI} , but in the latter neutralized to k word-finally and to kx when geminate. Final *q goes to X in Sir and Nun_{CAY}. Initial *q is dropped when followed by əX in AAY, and CSY.

3. PE p and t: *p and *t are generally preserved, but *p is weakened to v in 'weak' position in non-Qaw SPI. *t is assibilated to [t^s] before i in WG_{GRI}. Intervocalically, *t goes to l in EG_{GRI}. Final *t goes to y in Sir (and ž in PH_{NAI}). *t goes to s after original i in NAI and GRI (less regularly also in $NBI_{ECI}$and Net_{WCI}) and in NAI to c finally. *tət usually goes to cət (AAY cəst; CSY əst) in Yup, but in HBC_{CAY} to cit, and in NSY to sit.

Note that Eskimo *p corresponds to Aleut h initially and m̥ medially. Eskimo *t may correspond to either t (*t_1) or to c (*t_2) in Aleut (or medially to s before ə). Note also that there is no t before i (and no c before ə) in PE, a fact that may be related to the complex t ~ c ~ s relationships between Eskimo and Aleut.

4. PE c: *c is preserved in AAY, CAY and FR_{SPI}. and is also found in older Sig_{WCI}, NSY and CSY lexical data. Cases of s rather than c in AAY and CAY may reflect (apart from loan words) various sources, including *əcV-, *cəC-, *tð, and *ty. Otherwise *c goes to s, but with traces of c remaining in NAI geminate/cluster tc (which is ts in WCI, ECI, and GRI and tt in $NBIE_{CI}$, Cop_{WCI} and NWG_{GRI} but not Up_{GRI}). *c is preserved initially in EG_{GRI}. *c goes to h (or h-like allophones) in Nu_{NAI}, Uum_{NAI}, Cop_{WCI}, Net_{WCI}, Car_{WCI}, and NG_{GRI}, with PI *ks and *qs usually becoming xx and XX respectively and *ps often becoming ff (but ss in NG_{GRI}). Intervocalically *c goes to š (except after original i) in Mal_{NAI} and into z in 'weak' position in non-Qaw SPI. PI *ss and *šš go to ts in Up_{GRI} and *ss goes to ts in EG_{GRI}. Initial *c is dropped before ə in some words in core GCY_{CAY} (e.g. əła from cəła in other CAY, ultimately from *cila).

Note that Eskimo c may correspond to Aleut c (*c_1) or to Aleut s (*c_2).

5. PE ð: *ð is usually dropped between full vowels (except when geminated or after i from *ə, — i.e. ɨ — in Inu) in Yup and Inu, in the former also following a consonant (and otherwise merged with y intervocalically). Preconsonantally and intervocalically before ə, ð falls together in Yup with PE y (q.v.). In Sir *ð goes to ž (before a full vowel) and to c (before ə, apparently under Chukchi influence). In CSY and NSY *ð sometimes goes to ž intervocalically or in clusters with other continuants. There are various reflexes of *ð in Inu: ž in SPI, NAI and Net_{WCI}, y in other WCI and ECI, š in WG_{GRI}, h in NG_{GRI}, l in EG_{GRI} (becoming tt when geminated) and also in Cop_{WCI} and PH_{NAI} before other continuants. In many instances a recessive ž in nominal bases in Inu (written in this work in angle brackets for NAI) does not represent the reflex of *ð, and the same is true of recessive ɣ in verbal bases. *ð may may go to s before i (e.g. Inu isiq, Yup (ə)səq from *əðiʀ) or to l (see *aðiʀ), but in CSY *ð may also go to z (along with *y). *ð is dropped before *ə in Inu bases like qaa- from *qaðə-, kuuk from *kuðəɣ and qiiq from *qiðəʀ. In AAY and CAY *Vðə goes to Vi in such cases (in CSY and NSY only in the case of *iðə and *uðə). *ð becomes š after a stop in SPI and NAI (except Nu_{NAI}, where after k and q it becomes ž). Furthermore š from *ð merges with s in WCI and ECI, (and in recent WG_{GRI} š merges with s also intervocalically — though not in conservative central WG_{GRI}). *ð goes to ɣ before v or ɣ in ECI.

Note that *ð alternates with t after a consonant in postbases and inflections such as PE indicative *ðuʀ, tuʀ.

(Proto)-Eskimo *ð corresponds to ð in Aleut (where the proto-Eskimo-Aleut value is preserved or has gone to z, especially in certain Atkan postbases). In some cases the protophoneme has been preserved in Aleut but has gone to *y in PE between full vowels other than i.

6. PE y: Intervocalically *y goes to s before ə in AP_{AAY}, to z before ə in CAY (except in HBC_{CAY} and Eg_{CAY}). In Nun_{CAY} *y goes to z before a consonant, and to s before a consonant in K_{AAY}. When geminated *y goes to s in Nun_{CAY} and $Perry_{AAY}$ — in the latter *y also goes to s after a consonant before VV. *y goes to z only before i in CSY, but in most CAY *y goes to z when geminated within morphemes (in NS_{CAY} before any double vowel) or before a voiced consonant. Next to a stop *y goes to s (as in uksuq from *ukyuʀ) except in Sir and NSY, where *y is devoiced, (i.e. y). Geminated *y (non-productively) goes to tc in Inu (GRI ts), and to c in Sir. Initial *iy- goes to is- in Inu, but falls together with *iŋ- before vowels in certain bases in Yup as y-, except as c- in HBC_{CAY} and Nun_{CAY}, and as s- in AAY but only when not underlyingly from iu- or ia- (and in some Y_{CAY} as s- even if from such a source). *y goes to s also in some forms in Inu when initiating closed syllables as in pisuk- from *piyuɣ-. *y is usually vocalized to i before or after a consonant in Inu (e.g. ukiuq from *ukyuʀ) but to n before ŋ. *y is also vocalized to i when in combination with ə (e.g. tui from *tuyə). *y is neutralized with *ð as ž in Iti_{ECI} (and as an alveopalatal affricate before a consonant or when geminate in Sig_{WCI}).

7. PE l: *l is generally preserved except in some bases in Sir that have c (e.g. ucəma- from *ulima-). *l is devoiced when geminated in Nun_{CAY} and $Perry_{AAY}$ (where it is also devoiced when before another consonant or between a consonant and VV). *l goes to ž before another continuant in Point Barrow NAI and (optionally?) in Net_{WCI}. *l goes to tt when geminated in EG_{GRI}, corresponding to (recent) NG_{GRI} glottalized l and WG_{GRI} ɬɬ (from C plus l). *l goes to lʸ in NAI following original i (but not in PH_{NAI} or southern Mal_{NAI}).

8. PE ɬ: *ɬ is generally preserved in Yup and Sir, though sometimes it goes to s intervocalically in the latter (as in si- from *əɬi-). In Inu *ɬ is usually merged with l intervocalically (except in e.g. iɬuaq- outside of GRI), but otherwise *ɬ has various reflexes in more easterly dialects: t in southeastern SB_{ECI}, s in southwestern SB_{ECI} and Tar_{ECI}. In Cop_{WCI} *ɬ is merged with *s as h, and also in 'past' contemporative inflections like -xuni, -Xuni (Nu_{NAI} -xxuni, -XXuni) in NS_{NAI} (alongside -xɬuni, -XɬuniI). Although geminate WG_{GRI} ɬɬ (EG_{GRI} tt) is secondary, EG_{GRI} distinguishes Cs (coming from *Cɬ) from tt. *ɬ goes to ɬʸ after original i in NAI (but not in southern Mal_{NAI} or PH_{NAI}), and *ɬ goes to l in 'weak' position in non-Qaw SPI.

Note that ɬ is largely merged with l in Aleut (completely so in eastern EA).

9. PE v: *v is generally preserved intervocalically in Inu, though weakened to w in various dialects (in SPI regularly in 'weak' position). Initial *iv- goes to uy- in WG_{GRI} and EG_{GRI} and to yu- in GCY_{CAY}, NS_{CAY} and C_{AAY}. *v is dropped between certain vowels in GCY_{CAY} and NS_{CAY}, also WG_{GRI} and EG_{GRI}, leaving optional glide (note WG_{GRI} siu-, EG_{GRI} suu-, CAY ciu-, AAY cuu- corresponding to CSY sivu-). In Yup initial *uva- goes to wa- except to wa- in HBC_{CAY}, NS_{CAY} and NSY, and to k^wa- in Nun_{CAY}, and to mə- in Sir. Otherwise *v is preserved in all NSY, CSY, HBC_{CAY} and Eg_{CAY}. In core GCY_{CAY} *v goes to w when non-geminated between vowels except before ə or morpheme boundary. In AAY *v goes to w or (u)ɣ$^{(w)}$, though sometimes it is dropped in PWS_{AAY} before a single vowel intervocalically, and in AP *v goes to f before a consonant (thus kuɣluku and qauxcia corresponding to CAY kuvluku, qafcin). Geminated v is devoiced in WG_{GRI} (but goes to pp in EG_{GRI} and Up_{GRI}), Lab_{ECI}, Nun_{CAY} and $Perry_{AAY}$, but is glottalized in Iti_{ECI} and (recent) NG_{GRI} . In $Perry_{AAY}$ *v goes to x^w also between a consonant and VV.

Note that v alternates with p after a consonant in postbases and inflections such as Inu indicative -vuq/puq. Eskimo v corresponds to Aleut m medially, and Eskimo uv- corresponds to Aleut w- (Atkan m-).

10. PE ɣ: Intervocalically *ɣ is usually dropped within morphemes in AAY, CAY and NSY except next to ə (and in HBC_{CAY} and Eg_{CAY} sometimes it is retained elsewhere too). In AAY, CAY and NSY *ɣ is also dropped under productive 'velar dropping' (dropping of ɣ, ʀ, and ŋ between single vowels), and *aɣa goes to ii in these areas. A retained ɣ in these areas may reflect an original geminate or *ɣð. *ɣ is dropped intervocalically within morphemes in Inu except when geminated or after *ə (though in more easterly dialects also after the latter). Intervocalic *ɣ is more widely dropped in EG and also between two i's in NG_{GRI} and in 'weak' position in SPI. Postbase-initial *ɣ is usually lost in both Yup and Inu. In EG_{GRI} and WG_{GRI} 'fringe' dialects (including all NWG_{GRI}) intervocalic *ɣ goes to ŋ when preserved, and in northern Mal_{NAI} it goes to y following original i in some morphemes. Geminated ɣ is devoiced in WG_{GRI}, EG_{GRI} (to kk as also in Up_{GRI} and Kap Farvel GRI), Lab_{ECI}, Nun_{CAY} and K_{AAY}, but glottalized in Iti_{ECI} and (recent) NG_{GRI}. Often dropped before a single vowel in AAY (especially in C_{AAY}), with resulting gemination of preceding consonant (as in kammuk, but kamɣua). There is no phonemic distinction in the voicing of ɣ in most K_{AAY}, where it is usually voiceless.

11. PE ʀ: In Yup *ʀ is sometimes dropped intervocalically, but rarely when following after the first syllable vowel; it is also dropped by productive 'velar dropping' (dropping of ɣ, ʀ, and ŋ between single vowels). In Inu *ʀ is dropped intervocalically within morphemes except when geminated or after *ə (though in more easterly dialects also after the latter). Intervocalic *ʀ is more widely dropped in EG and also in 'weak' position in non-Qaw SPI. In EG_{GRI} and Up_{GRI} *ʀ is nasalized to ɾ̃ when preserved. In modern (Nain) Lab_{ECI} ʀ is neutralized with ɣ (more uvular variant between a's). Geminated ʀ is devoiced in WG_{GRI}, EG_{GRI} (to qq, as also in Up_{GRI} and Kap Farvel GRI), Lab_{ECI}, Nun_{CAY} and K_{AAY} (but glottalized in Iti_{ECI} and recent NG_{GRI}, with stop-like onset in Tar_{ECI}). *ʀ is often dropped before a single vowel in AAY (especially in C_{AAY}), with resulting gemination of preceding consonant. There is no phonemic distinction in the voicing of ʀ in most K_{AAY}, where it is usually voiceless.

12. PE ŋ: Intervocalically *ŋ is often dropped within morphemes in AAY, CSY and NSY except next to ə (in HBC_{CAY} and Eg_{CAY} sometimes retained elsewhere too). In AAY, CAY and NSY *ŋ is also dropped under productive 'velar dropping' (dropping of ɣ, ʀ, and ŋ between single vowels), and *aŋa goes to ii in these areas. In AAY and CAY initial *iŋ- before a vowel goes to y- (or c- or s-, as for *iy- under 6) before a, and in some bases in all Yup and Sir also before other vowels (cf. PE iŋuɣ). *ŋ is sometimes also dropped intervocalically in Inu, most widely so in EG. Word-finally *ŋ goes to k in more easterly Inu. *ŋ goes to nʸ after original i in northern Mal_{NAI} in some morphemes.

13. PE m and n: Word-final *m goes to p in more easterly Inu, but is otherwise preserved. Initial *n is dropped in Yup and Sir before i (which becomes y, but s for some Y_{CAY}, before an immediately following vowel). In Sir it becomes y before other vowels in many bases, possibly reflecting a PE *nʸ but this may be a general development for initial *n that is blocked before a nasal or alveolar/palatal consonant beginning the next syllable (exceptions appear to be due either to loans from CSY or to contractions). (Note that n is phonetically palatalized in certain contexts in neighbouring Chukchi according to Bogoraz.) In some bases initial *n has dropped also before əl/ən in

GCY_{CAY} at least (e.g. ənəq from *nənəʀ and ələʀ(-) from *nələʀ(-)). Single intervocalic *n more widely dropped in EG_{GRI}. Word-finally *n goes to t in more easterly Inu. *n goes to n^y after original i(C) in NAI (except for PH_{NAI} or southern Mal_{NAI}).

Eskimo m corresponds to Aleut h initially, and n to Aleut t initially (though Aleut like Yupik drops initial n before i, and also usually before *ə-).

B. Consonant Clusters
A cluster of a fricative plus a stop goes to stop plus stop in Inu, but in WG_{GRI} and EG_{GRI} and much of ECI a cluster of a uvular consonant plus stop produces a pharangealized geminate of the second consonant. A cluster of a nasal plus another consonant goes to the corresponding non-nasal (fricative if the second consonant of the cluster is a fricative, and stop if it is a stop) plus consonant in Inu following an earlier change of n+C to ŋ+C in WCI and ECI (as in aɣlu, tuktu, B_{NAI} allu, tuttu, from *anlu, *tuntu). *nq goes to qq and *lq goes to tq in SPI (both go to tq in NAI). *l plus stop generally goes to t plus stop in Inu, but goes to k plus stop in the eastern part of Inu (before assimilation) — compare also under alpaɣ- and (for possible parallel *ðv to ɣv change also in NAI) qaɣvaʀ-. These changes are apparently the result of the diffusion of innovations within Inu such that PI itself must be posited as still having nasal+non-nasal clusters. *kl and *ql go to kɬ and qɬ except in Nu_{NAI}, where they go to xl and Xl. *pl goes to pɬ (but in CSY to fɬ) in Yup, and to pl in Mal_{NAI} and Nu_{NAI}, to, pɬ in SPI, and to vl in the rest of Inu. There is some variation in Inu as regards other original labial plus non-labial fric. clusters (p + fric. favoured as the outcome in SPI, Mal_{NAI} and WCI, v + fric. in B_{NAI}, though p + corresponding stop is also found). *n plus consonant and *ŋ plus consonant largely neutralized to ŋ plus consonant in CSY (in most bases), but to n plus consonant in NSY. Increasing regressive assimilation in clusters to the east within Inu: stop plus continuant goes to geminate continuant outside of Mal_{NAI} (where the stop is represented by a glottalized element as also in Nu_{NAI}, Net_{WCI} and Car_{WCI}) and SPI. In the latter, however, *tž, *tl and *tc go to šš, ɬɬ and ss respectively (also Yup and Sir have ɬ from *tl), and in Qaw_{SPI} also PI *ty goes to ss, as in WG_{GRI} (EG_{GRI} ts) — see pumyuɣ- — though PE ty seems to have produced Inu s(i) in early derivations such as tasiuq- under PE tatyuʀ- (and compare katyuɣ-). Alveolar plus other consonant (labial or alveolar) goes to velar plus consonant in ECI and GRI (though *tl, *tž remain as ll and žž/yy- as in B_{NAI} and WCI — and PI ts, NAI tc, remains as such). In WCI, however, voiced continuant clusters of this type go as ECI (e.g. naŋmak-, NAI nanmak-) whereas *l + stop goes to t + consonant as in NAI (thus atpa — compare ECI akpa). Labial plus another consonant into geminate consonant east of — and including — Melville Peninsula ECI (not Aiv_{ECI}), but PI *ps goes to ts (and in NBI_{ECI} to ss). Velar plus other consonant to geminate consonant in Tar_{ECI} and Lab_{ECI} (where *ks goes to ts, however) and in GRI apart from NG_{GRI}. Uvular plus other consonant goes to geminate consonant in Lab_{ECI}. In Yup and Sir *ty goes to s or ts (NSY y, probably indistinguishable from š in Menovshchikov's writings). Productively at morpheme-boundary t+y goes to c in CAY. Also *tð has produced s (in NSY apparently y). There is some fluctuation with stop plus nasal clusters in Yup. In Inu *km goes to pm in Mal_{NAI} (B_{NAI} mm), and further east to ŋm or 'm. Metathesis of *nʀ and *lʀ (and *mʀ) is regular in Di_{SPI}, ECI (ʀŋ, but *lʀ, is assimilated to ʀʀ), and GRI (ʀn, ʀŋ - and in SWG_{GRI} also ʀm - and ʀɬ), and in Net_{WCI} *nʀ regularly goes to nŋ (also at Holman $Island_{WCI}$ according to Lowe). Elsewhere (including within Yup) sporadic metathesis of other continuant clusters occurs. In NAI *ɬʀ goes to ɬX (and also WCI), and *qv goes to Xf (in Nu_{NAI} to Xv). In Net., l (or ɬ) + C and ž + C are neutralized (with variation). Clusters of stop plus voiceless fricative go to two corresponding voiced fricatives in PH_{NAI} (and sporadically also further east). Stop plus continuant or stop plus stop clusters in Yup are usually by loss of intervening ə (these often involve v, in early alternation with p after a stop - thus most Yup has qv or kv whereas Inu and NSY have qp and kp). Voiceless nasals in Yup arise from (previous) adjacency of a stop.

C. Vowels
1. PE ə (schwa): *ə is merged with i in Inu except for Di_{SPI}/$Imaq_{SPI}$ where there is a tendency to regressive assimilation (or neutralization) from ə to an *i (or vice versa) in the preceding syllable and also *i to ə before ž. Traces of the distinction are left in most NAI in the form of a palatalized series of consonants after original i only. There is some fluctuation, however, and in B_{NAI} at least *əli and *əni have generally become il^yi and in^yi and everywhere a final *ə on bisyllabic verb bases has become 'strong' (i.e. palatalizing) i after a fricative or n (so the distinction of original i vs. non-palatalizing i, written as ɨ, does not always correspond to the distinction pattern of *i vs. *ə). Sometimes ə has become a (especially before another vowel) or has been dropped in Inu. In Yup (except in NSY) and in Sir word-final ə becomes a (and this includes ə from reduced vowels in the latter). ə-adjustments (deletion and insertion to break up clusters) occur in most Yup, with rhythmically stressed ə deleted in AAY (but only in the second syllable) and in CAY outside of NSU_{CAY}. Devoicing of fricatives before voiceless consonants resulting from this deletion of rhythmically stressed ə in core GCY_{CAY} and non-Perry K_{AAY}. Initial ə is usually dropped in CSY (but not NSY) before a single consonant, as is also common to varying degrees in AAY and CAY (most markedly in AAY, least in Nun_{CAY}). This results in first syllable lengthening when it occurs in CSY and in AAY. *əʀ- usually into aʀ- in CSY. NSY initial ə sometimes goes to i (especially before l).

Eskimo ə corresponds to Aleut a or i or has been dropped in Aleut: the correspondences are complicated further by vowel harmony between adjacent syllables, for which see Bergsland 1986.

2. PE i, a and u: *i, *a, and *u are often reduced to ə in Sir, except in the first syllable (and there is no distinction of vowel length after the first syllable; length marking in Menovshchikov's writing probably just indicates

prototonic stress). Under suffixation such a Sir ə will sometimes resume its underlying identity except when followed by a velar or uvular. For example, PE yaquʀ is Sir yaqəX 'arm', but yaqun 'your arm' shows the u. Even when followed by a uvular or velar, this ə behaves differently from an original unreduced ə, viz. by not undergoing deletion before suffixes which cause other ə to delete. Many postbases retain a full vowel, and there is a tendency to retain them also after original geminates. (Note that in neighbouring Chukchi, stress is on the first — or if derived by suffixation the penultimate — syllable of the base and that ə is the only vowel there not involved in vowel harmony alternations.) *i goes to ə between alveolar consonants in Yup except in NSY, HBC_{CAY} and Eg_{CAY} (thus CAY (c)əła, CSY əsła but Eg_{CAY} HBC_{CAY} ciła, NSY siła). Initial vowels are lengthened in CSY when is ə dropped in the following syllable. *u goes to i in certain positions other than the first syllable in EG_{GRI}, Up_{GRI} and southern SWG_{GRI} (at least when not before a labial consonant or following a syllable with *u). *ua goes to iva (but in $Paamiut_{GRI}$ and some Up_{GRI} to ava). EG_{GRI} also has iʁa from *aʀa and more sporadic vowel harmony-like changes. *kVV- goes to x- before a vowel in CSY and AAY, in NSY usually to voiced ɣ- and in CAY to k(ə)x-. Similarly, *qVʀ- goes to X- in CSY and AAY, in NSY usually to voiced ʀ-, and in CAY to q(ə)X-. This Yup denaturization of vowels sometimes also occurs later within morphemes. In CSY *qVq- often goes to aXq-. In AAY and CAY medial *qaʀ goes to qəʀ, and in CAY aʀ is sometimes dropped (or goes to ə).

D. Diphthongs
Diphthongs are levelled out in CSY and NSY (perhaps under Chukchi influence) with labialization of a flanking velar and uvular consonant in certain positions if the diphthong contained a *u (thus CSY sik^waa from *sikua). In CSY *au and *ua go to aa, *iu and *ui to ii, as also *ai and *ia. In NSY *ai and *ia go to [e:] , *ua goes to [o:] (though these still may be shallow diphthongs), and *iu (but not *ui) goes to ii. Non-initial *ai and *au go to ii and uu in PWS_{AAY} and *ia goes to aa in all AAY after s, c or y. Nun_{CAY} *ai goes to aa except in endings. In WG_{GRI} and EG_{GRI} *au and *ai go to aa, though final ai is preserved in WG_{GRI} and goes to ii before a uvular in NG_{GRI}. Diphthongs are flattened in northern Mal_{NAI} (into [e:], [o:] and ii as in NSY); in SPI this involves only *ai and *au.

E. Suprasegmental Phenomena
Following the reduction of original geminates in Yup and Sir a major prosodic shift spread through Yup, rhythmically stressing (and lengthening) alternate open short syllables after the first (or after primary stress, which lies on double vowels or — in AAY and CAY — on closed initial syllables). The most complex rules of adjustment (with 'stress retraction' from short open syllables to preceding short closed syllables, and with "compression" of long Vs) are to be found in AAY, and the simplest in CSY. In Sir the pattern has been recently superimposed on an apparently initial-syllable-stressed prosody. In AAY and CAY there is secondary gemination of consonants before double vowels, and in AAY (where this only occurs after the first syllable vowel) there is a stress-related distinction between fortis and lenis C articulation. The details are not relevant to the present comparative work since Yup forms are cited in their pre-prosodic shape (before predictable lengthening, contraction and gemination). However, non-predictable gemination in Alaskan Yup is indicated: in most cases (esp. in disyllabic verbal bases ending in ə) the gemination is a means of maintaining primary stress on the base.

A Yup substratum has produced a related system of alternating 'weak' and 'strong' consonant positions in SPI (less marked in Qaw_{SPI}, where only *q, *v and some *ɣ are regularly weakened). These correspond to positions following unstressed and stressed syllables respectively in neighboring Yup. Clusters may also be affected, the details varying from sub-dialect to sub-dialect; in KI_{SPI}, at least, a *q before another stop in weak position is deleted and a preceding aa vowel is partially lengthened. The distinction between geminate and non-geminate Cs is lost after the first syllable boundary. For details on Yup prosody, including its effects on SPI, see the papers in Krauss 1985.

In Tar_{ECI} and Lab_{ECI} 'Schneider's law' reduces C_1C_2 (geminate or cluster) to C_2 following syllables that also begin with a geminate or a cluster. This applies also to recent Sig_{WCI} as regards geminate but not cluster reduction (see Lowe 1985a).