A Grammar of Central Alaskan Yupik (CAY)

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by

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The fundamental laws which governed the growth of culture and civilization seem to manifest themselves conspicuously, and the chaos of beliefs and customs appear to fall into beautiful order. But investigation goes on incessantly. New facts are disclosed, and shake the foundation of theories that seemed firmly established. The beautiful, simple order is broken, and the student stands aghast before the multitude and complexity of facts that belie the symmetry of the edifice that he had laboriously erected…

The phenomena, as long as imperfectly known, lend themselves to grand and simple theories that explain all being. But when painstaking and laborious inquiry discloses the complexity of phenomena, new foundations must be laid, and the new edifice is erected more slowly. Its outlines are not less grand, although less simple. They do not disclose themselves at once, but appear gradually, as the laborious constructions continue.

Franz Boas
Introduction,
Publications of the Jesup North Pacific Expedition,
Vol. 1, 1900, 3–4

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Foreword

This is a grammatical description of Central Alaskan Yupik (CAY hereafter), an Eskimo Language spoken traditionally in small villages in Southwest Alaska, but now also in major Alaskan cities outside the traditional Yupik-speaking areas, by those people who have moved to or, in an increasing number of cases, been born in the urban areas among dominantly English speakers. Yupik, pronounced as [yúppik], is the self-designation of the people, meaning a 'real person' (*yu-p'ik* person-genuine).

Of CAY dialects, of which there are at least five (as given in § 1.2), General Central Yupik (GCAY), as it is called, is the target of this documentation, which is basically a largely revised and expanded version, with extensive remodeling, of the same author's "Sketch of Central Alaskan Yupik, an Eskimoan Language" (Miyaoka 1996) in the Smithsonian's *Handbook of North American Indians, Vol. 17, Languages*. More or less heavier emphasis is laid upon the Kuskokwim, Coast area, and Nelson Island dialects, followed by the Lower Yukon (see below for the dialects).

This, however, comes with an important caveat. Like any living language, CAY should never be considered as a single stable or monolithic entity. It is very often the case that each village or small local area is perceived (and clearly pointed out) as having its own dialectal characteristics by which it is easily discerned from another. It is full of generational and idiolectal variations and vacillations within itself, in addition to dialectal differences, particularly in matters lexical. This may particularly be the case with a language such as CAY, which has not only a very wide area of distribution and is experiencing very rapid acculturation and decline under the strong pressures of the predominant language (English) and culture (American), but which has been further influenced by different degrees of outside influences, depending upon family and individual history, intermarriage and school education, etc. See § 1.3 for post-contact and current status.

i) It cannot be over-stressed that the Yupik people tend to be reluctant to generalize things in their environment (social, natural and supernatural), to say nothing of their language. Crude generalizations in matters linguistic may be easily doubted and flatly rejected, as is the case with their non-linguistic culture. Their traditional teaching of children in general is based on concrete illustrations and telling stories rather than abstract explanations, very much unlike teaching in American schools. Morrow and Mather (1994: 40), long-time non-Native and Native collaborators in matters anthropological, speak of the ten-

dency of the people to 'avoid generalized analyses of meaning and motivation' and to 'see the academic predilection for critical analysis as leading people from meaning toward discord and confusion'.

This applies all the more so to the language in such matters as acceptability of lexical items of wide range and some grammatical usages (due to their rapid decline among non-conservative speakers). Most conspicuous to the speakers, however, is nothing but lexicon instead of grammatical patterns. A remarkable fact is that Yupik people are very sensitive to lexical differences in actual speech of other persons even among one's own family, so it is frequently observed that people argue against one another either for fun or seriously. They may also be very much aware of some phonological differences of their (sub)dialects (but hardly of grammar). Not surprisingly, Yupik speakers often let slip that there seems to be neither such a thing as a coherent language (as CAY), a typical dialect (as GCAY or even Kuskokwim), nor a 'representative' speaker (either of the language or a dialect).

ii) Fully aware that neat and easy generalizations about a language are doomed to fail, this writer has taken care, within practical (individual or social) limitations, to avoid hasty generalizations by constantly cross-checking any piece of information obtained with as many speakers as possible. Accordingly, everywhere in this description, utmost cautions are taken to avoid hard and fast generalizations or inflexible conclusions in all instances, which some readers might prefer to have. Every speaker, however, may readily find many examples (words or sentences) cited in this grammar that he or she openly claims are not 'my language' or just say 'no'. It would not be surprising to find many Yupik illustrations acceptable only to a portion of CAY speakers and subject to disagreements (responding 'no') from other speakers, since acceptability in general varies, empirically speaking, to a considerable extent according to speakers, not only between regions, but even within families – moreover, meaning of 'no' by speakers needs to be correctly judged with the utmost care, since it may not necessarily be grammatical or idiolectal/dialectal, but may be pragmatic/contextual, a mere personal preference, etc. Modest experience with the language will lead one to conclude that it would be practically impossible indeed to find a 'representative' speaker of CAY or a single speaker who will accept (nearly) all the Yupik examples in this documentation without reservations. Asterisked Yupik illustrations (with beginning *), either words or sentences, mean that, although given for the purpose of discussion or comparison, they *are ungrammatical or unacceptable.* Ones with ? are *questionable* or *hardly acceptable*.

Added to differences between old or 'conservative' and younger or innovative speakers, the most difficult areas to handle with this widely fluctuating and

rapidly changing language may include numeral expressions and some transitive constructions, in particular, aside from vocabulary.

iii) CAY is a very rich and expressive language with fine grades of semantic and functional distinction made within words. Although I have striven to examine the subject as assiduously and comprehensively as my abilities and opportunities allow, this grammar is necessarily far from an exhaustive or a definitive treatment. Yupik examples, which are chosen to be as illustrative as possible of the point under discussion, are reduced to the minimum for this book under space limitation. Accordingly, the grammatical description presented here may hardly be anything but *an* abstraction (which the people dislike). Even aside from the speakers' different responses, which are to be duly expected, this is inevitably another grammar which "leaks" (Sapir 1921: 39). There is of course a multitude of points that will need correction, revision, and deeper understanding. As such, even after many years of studying CAY, this book admittedly remains a merely preliminary stage for a fuller grammatical documentation and explanation. It must be so, given that 'a hundred linguists working a hundred years could not get to the bottom of (fully document and explain) a single language' (Krauss 2007: 16).

iv) Obviously this is an old-fashioned grammar that is not 'fortified' by recent theoretical formulations. However, it is not a beginners' school grammar either and demands a certain extent of linguistic background. It is intended to be something that will be of interest not only to non-speakers (either linguists or not) who are interested in the current language, its depth and subtleties, but also be of some help to the present and future speakers who will appreciate the beauty, richness, intricacy, and orderliness of the language. Despite some possible prejudices among speakers against an academic grammar, this will, I hope, be something to help understand the language and serve to 'explain' part of the fluent speaker's inner (unconscious) knowledge of it. In addition, proper awareness of phonological rules (§ 7) will help to avoid easy etymologizing or metanalysis of words (morphemes), which the simple phonological system (with only four vowels) of the language may tempt ones to do. (A "deep root" may be not more than a conjecture.) The last thing I want is to produce more material only for theoretical 'tinkerings' or dilettantish hasty hypotheses.

Based upon my comprehension that the genuine object of linguistics is a "word" (§ 2), this is a morphology-based description, which does not mean that syntactic phenomena are slighted. In this language particularly, to my perception, morphology and syntax are too interwoven to validate separate treatments (cf. Part 1 Preliminaries). The foregoing documentation consists of a fundamental grammar as its main part, accompanied by a suffix list and references, together with (recorded) sources for the language. However, it remains nothing

but an ever on-going work subject to constant correction and revision. Any comment and suggestion, factual and interpretational, would be fully appreciated.

Three different writing systems co-exist in this publication: phonological and phonemic representation (both in academic symbols) as well as the currently adopted "practical orthography" (as explained in § 3). What may seem redundant, especially in early chapters, will, I hope, serve to help propagate the orthography currently enjoying a greater acceptance and usage in traditional Yupik-speaking areas and beyond.

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i) Information on the Yukon dialect was provided by, among others, the late Paschal L. Afcan (originally from Akulurak, between 1967 and 1999) and the late Martha Teeluk (from Kotlik, between 1967 and 1969) and information on the Kuskokwim dialect by the late Levi Lott (from Tuluksak, between 1967 and 1969), the late Evon C. Azean, Sr. (from Kangiganak since 1980), Elsie Mather (from Kwigillingok since 1977), Marie Meade (from Nupapitchuk since 1977), Dorie Wassilie (from Tuntutuliak since 2004), to each of whom I cordially extend my utmost gratitude for their patient and dedicated cooperation. Their rare insights as fluent and sophisticated native speakers have brought many grammatical subtleties home to me.

Going back to the beginning, I cannot leave out the names of three persons, Julia Simons, Bertha Lincoln, and the late Frank Amadeus, who were the first teachers of the language to me at the fishing camp of Umkumiut, Nelson Island, where I spent the summer of 1967.

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Two-letter abbreviations of speakers' names (first and last) are given as the sources of information.

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July 15, 2012

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The Grammar consists of fifty-four chapters (§ 1 through § 54) in ten parts.

Footnotes and examples are respectively referred to as, e.g. "fn. 4" and (24), within one and the same chapter, while ones in a different chapter (e.g. § 10) are referred to as, §-10-fn.4 and § 10(24).

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Abbreviations and conventions

Different kinds of abbreviations (one-, two-, three- or two-letter) are used for mnemonic help, some with differentiating subscripts. In addition two letter abbreviations are for first and last names of consultants (see *Acknowledgements* in *Foreword*) and four-letter ones for *References/sources* (pp.1576–1604).

A	agent
A_{IMP}	impersonal agent (primary or extended)
A', A", …	agent of upper-clause complex transitives
(A, P, T,..)	demoted A, P, T, …
C	consonant
E	extended argument
E_{APL}	applicative
E_{ADV}	adversative
F	fricative
G	genitive
N	(1) noun/nominal (stem, inflection); (2) nasal
P	patient
(P1, P2, …)	phonological rules
R	ditransitive recipient
S	intransitive subject
Sa	agentive/active intransitive subject
T	ditransitive theme
V	(1) verb (stem, inflection); (2) vowel
<u>V</u>	full vowel (vowel other than /ɨ/)

du.	dual
pl.	plural
sg.	singular
vd.	voiced
vl.	voiceless

EC	epenthetic consonant
EV	epenthetic vowel
EX	root expander
NP	noun phrase
PI	expletive (prop) |*pi*-| verb
SF	suffix

Two-letter combinations below of N, V (including VPc) are used for (derivational) suffix classes (§ 4.2.5.1, etc.):

NN	nominal elaboration (suffix)
NNh/VVh	(dis)honorific
NNl	locational
NV	verbalization
NVrv	relational verbs
NVN	renominalization
VN	nominalization (suffix)
VNnm	nominalizers
VNrl	relativizers
VNV	reverbalization
VV	verb elaboration
VVa	adverbial
VVc	comparison
VVe	evidentiality
VVm	modality
VVn	negation
VVt	time/aspect
VPc	verb particlizer
VVsm	simplex verbs
VVcm	complex transitives

Three-letter abbreviations are used in glosses:

ABL	ablative case
ABM	ablative-modalis case
ABS	absolutive case
ADV	adversative (maleficiary)
ALL	allative case
ANP	anaphoric
APL	applicative
APP	appositional mood
APS	antipassive
ASP	aspect
ATN	attention calling
AUG	augmentative
BEN	benefactive (beneficiary)
CAU	causal; causative
CHR	cohortative
CMP	comparative

CNA	conative
CNJ	conjecture
CNN	connective mood
CNNbc	causal (*because*) connective mood
CNNbf	precessive (*before*) connective mood
CNNid	indirective connective mood
CNNif	conditional (*if*) connective mood
CNNqs	quasi-connective moods
CNNst	stative connective mood
CNNth	concessive (*although*) connective mood
CNNwl	durative (*while*) connective mood
CNNwn	contemporative (*when*) connective mood
CNNwv	constantive (*whenever*) connective mood
CNS	constancy
CNT	continuous
CNV	converb
CRF	coreferential marker
CSQ	consequential (‘so that’)
CST	constant
CTR	contrafactuality (‘but’)
CUS	customary
DEMad	adverbial demonstrative
DEMnm	nominal demonstrative
DES	desiderative
DIM	diminutive
DIS	distal non-extended (demonstrative)
DUR	durative
EMP	emphatic
ENC	enclitic
END	endearment
EQL	equalis case
EVD	evidential
EXC	exclamative
EXT	extended (demonstrative)
FOC	focus
FRQ	frequentative
FUT	future
GEN	general
HAB	habitual
HNR	(dis)honorific
IGN	ignorative
IMD	immediate

IMN	imminent (future)
IMP	impersonal
INC	inchoative / inceptive
IND	indicative mood
INF	inferential
INJ	interjective
INS	instrumental
INT	interrogative mood
ITM	intermittent
ITR	iterative
ITS	intensifier
LCV	locative verb
LNK	linker
LOC	locative case
MOD	modal
MOM	momentary
NEC	necessitative
NEG	negative
NEX	nonextended (demonstrative)
NVN	nominal cyclical expansion
OBL	oblique
OPT	optative mood
PAS	passive
PCL	particle / particlizer
PEJ	pejorative
PPS	pseudo-passive
PRC	precedence
PRF	perfective
PRG	progressive
PRH	prohibitional
PRL	perlative case
PRO	pro-(verb, noun)
PRP	prop stem (|*pi*-|)
PRV	privative
PRX	proximal nonextended (demonstrative)
PST	past
PSV	passive
PTP	participial (mood / relative clause)
PUR	purposive
QST	question
RDP	reduplication
REA	reactive (responding) =*wa*

REC	reciprocal
REF	reflexive
REG	regularity
REL	relative case
RPR	reportative/reported
RPT	repetitive
RQT	rhetorical question
SFL	sentence filler (expletive)
SFN	softener
SPL	spotlighting
STT	stative
SUP	superlative
TAM	tense-aspect-mood
TKN	teknonym
TND	tendency
VNV	verbal cyclical expansion
VOC	vocative

Dialect/language abbreviations (cf. § 1.2) are given in [ ] in connection with native forms and their English translations: So two-letters (seven of them below) are clearly distinct from first-second name abbreviations of consultants (Acknowledgements in Foreword) which are given at the end of an example/illustration as a whole.

K	Kuskokwim
Y	Yukon
BB	Bristol Bay
CK	Coastal Kuskokwim
LI	Lake Iliamna
NI	Nelson Island
NS	Norton Sound
PE	Proto-Eskimo
HBC	Hooper-Bay and Chevak (*Cuk* dialect)
NUN	Nunivak Island (*Cup'ig* dialect)
CAY	Central Alaskan Yupik (language)
CSY	Central Siberian Yupik (language)
GCAY	General Central Alaskan

| |	phonological (underlying) representation
/ /	phonemic representation
[ ]	phonetic representation
|	foot division inside phonemic representation

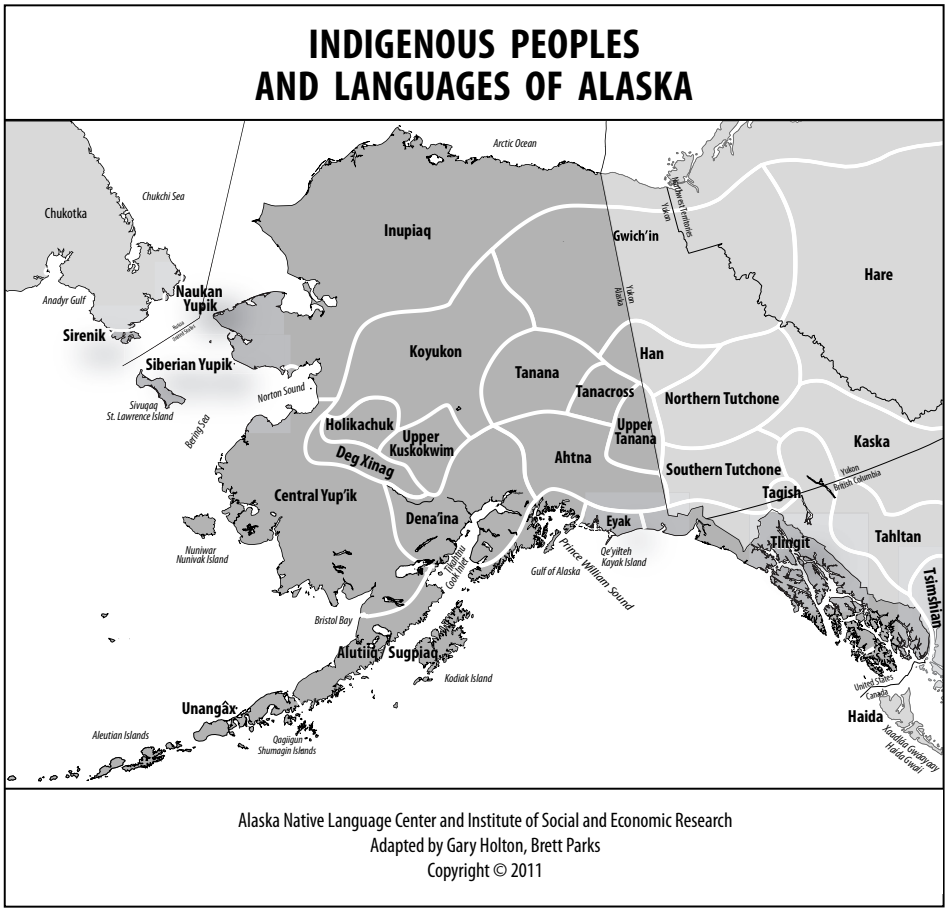
[	start of an inflection inside phonological representation
+	retaining suffix (in phonological representation)
-	(1) deleting suffix (in phonological representation) (2) suffix boundary (in phonemic representation); (3) enclitic boundary (in orthography) (4) agent coreference (e.g. A-A', REL-REL)
±	retaining or deleting suffix (as in dialect variations)
=	(1) enclitic boundary (in bound phrases) / (2) 'equal to'
≠	non-enclitic boundary (in bound phrases)
≒	approximately equivalent or quasi-equivalent
#	word boundary
→	transcategorial derivation: N→N nominal modification V→V verb modification N→V verbalization V→N nominalization N→V→N renominalization V→N→V reverbalization N→V→N→V cyclical verbalization V→N→V→N cyclical nominalization
>	argument hierarchy "higher than" (for case assignment)
>, <	"becomes", "is derived from" (for phonological derivation)
⊂	reflexivization (P⊂A)
∽	reciprocal (P∽A)
∞	medialization (P∞A, E∞A)
~	variants (positional, idiolectal, dialectal/areal)
/	alternatives
Ø	zero
. [dot]	(1) syllable division (2) to separate two or more English words as a gloss for one Yupik morpheme (3) repetition in a gloss
( )	(1) deletable segment(s), final truncation, or segment which may not occur (2) reference to example number
?	an utterance that is odd or limited in acceptability
??	an utterance that is extremely limited in acceptability
*	(1) [put before] an utterance that is either structurally or semantically unacceptable (2) [put after] a velar which behaves phonologically different from one without the asterisk
∿	permutable (in ordering)

*∿	non-permutable
§	chapter/section

1, 2, 3, 3R (sg., du., pl.)	first, second, third, reflexive-third (singular, dual, plural) person (suffixes) – combined as in:
3sg.	third-person singular subject (for intransitive verbs)
3sg.sg.	third-person singular possessor and singular possessum (for possessed nominals)
3sg.3sg.	third-person singular subject and third-person singular object (for transitive verbs)

s.o.; s.t.	someone; something
p.n.; pl.n.	person name; place name
Fa; Mo; Br; Da; Si; So; Ch; Hu; Wi; Gr; el; yo	father; mother; brother; daughter; sister; son; child; husband; wife; grand(parent); elder; younger.

Maps



Map 1: Indigenous peoples and languages of Alaska

Alaska Native Language Center and Institute of Social and Economic Research
Adapted by Gary Holton, Brett Parks

Map 2: Central Yup'ik Area

Part 1
Preliminaries

The first chapter which deals with non-grammatical information about Central Alaskan Yupik as well as Eskimo languages, its present status, previous studies and sources for this description, and its geographical placement among neighboring languages in the North is followed by four chapters which give the structural preliminaries and/or outlines for the more important characteristics of CAY. I begin with the "word", as it would, in my perception, constitute *the* starting point for linguistic study, define the language's basic units (§ 2), survey information about how the expression plane is constituted, i.e. phonology (§ 3), and about how the content plane is constituted, i.e. morphology (§ 4) and syntax (§ 5). Distinction of these last two chapters is rather arbitrary, as may necessarily be the case with such a polysynthetic language as Eskimo: A part of one chapter may well be given in the other and there may be some overlap in the two.

A chapter here is not necessarily always preliminary, however, and may include accounts of some details of a rather specific topic that is not covered in any other of the later chapters.

Finally some information is provided on the sociolinguistic aspects of the language (§ 6) that may be relevant to the grammar.

Chapter 1
Introductory

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2. CAY – Speakers and dialects 4
3. Postcontact status and current status..... 7
4. Previous studies and sources for this description 10
5. CAY's geographical placement among neighboring languages..... 13

1. Profiles of Eskimo languages

Central Alaskan Yupik[1] (CAY) is a Yupik or "Western" Eskimo language. What exactly Yupik consists of, however, remains an open issue. According to Woodbury (1984) there are five Yupik languages, which – along with the Inuit-Iñupiaq or "Eastern" Eskimo language forming a single dialect continuum from northern Alaska through Arctic Canada to Greenland – constitute the Eskimo branch of the Eskimo-Aleut family. The five Yupik languages are CAY, Alutiiq (Sugpiaq / Pacific Yupik: Alaska Peninsula, Chugach, and Kodiak Islands), Central Siberian Yupik (CSY: St. Lawrence Island in Alaska and Chukotka in northeast Asia), Naukanski, and the now extinct Sirenik(ski) (both in Chukotka) – see also Hammerich (1958). Given the remarkable divergences (both archaic and innovative) of Sirenik from the others, a more plausible classification may divide the group into Inuit-Iñupiaq and Yupik, the latter consisting of Sirenik and non-Sirenik Yupik (comprising four languages other than Sirenik); or even into three branches, Inuit-Iñupiaq, Yupik, and Sirenik – cf. Menovshchikov (1959: 310–313, 1964) for Sirenik as well as Krauss (1973, 1979) and Fortescue et al. (1994: x).

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1. The term Yupik / Yup'ik (the former being common in English writings, while the latter in Native contexts) is from the derived noun *yup'ik* /yùppik/ (from |*yuɣ-piɣ*| 'person-genuine'; § 20.1.1). The stem clearly corresponds to *Cuk*, *Cup'ik*, *Sugpiaq* in Western Eskimo languages (just below) but is also reflected by *Inuit*, *Inuktitut*, *Iñupiaq* of Eastern Eskimo. The Eastern form *inuk* is probably residuous in GCAY *inuguaq* 'small doll (i.e. imitation of person)' and the person name *Inuk* known at least from Nelson Island [ELLA 20].
   The term 'Eskimo' may be used by Yupik people themselves, often as a matter of common usage, but sometimes with a hint of amusement, but not abhorred or tabooed as strongly as among Canadian Inuit.

The distribution and prehistory of the Eskimo language family and each language involved, as well as the family classification, are supplied by Woodbury (1984).

The Aleut language is the only language related to Eskimo among all the languages in the world. In his most detailed comparative work, the late Knud Bergsland wrote, 'At first glance the relationship of Aleut and Eskmo may seem very distant, and the time of the 'split' has been estimated to several millennia. The closer once looks into the linguistic facts, however, the closer the relationship appears, …' (1989: 72–73). His noted Aleut grammar (1997a) gives a brief but most reliable comparison with Eskimo sentence structures (pp. 341–356), with more information of Eskimo-Aleut historical linguistics available in Bergsland (1951, 1958, 1964, 1986, 1989). See § 1.5 for relation-ships of Eskimo-Aleut with other language families in the north.

The most detailed up-to-date information on the current status of Eskimo languages in Alaska is in Krauss (2007).

2. CAY – Speakers and dialects

i) As of this writing (2010), CAY is the most vigorous of the nineteen remaining Native Alaskan languages since the year 2008 saw the extinction of Eyak with the passing of its last native speaker. Though seriously endangered, CAY has by far the largest number of speakers in Alaska and the most likely to have any hope of survival beyond the twenty-first century, perhaps not only in Alaska but also all the indigenous languages of the United States.

CAY is spoken along the coast of southwestern Alaska and its major river systems, including the area south of Golovin and Elim (Norton Sound), along the Yukon (up to Holy Cross) and the Kuskokwim (up to Sleetmute), on Nelson Island and Nunivak Island, down the coast to Bristol Bay, and along the northern coast of the Alaska Peninsula. The distribution is depicted in the map *Native Peoples and Languages of Alaska* (Krauss 1982) and *Indigenous Peoples and Languages of Alaska* (Krauss, Holton, Kerr, and West 2011). See the two maps in pp. l-li.

The language has been regarded as having six main dialects, mutually understandable, with measurably divergent phonological and lexical variations:

1. Norton Sound (NS – north of Kotlik at the mouth of the Yukon)[2]

2. The earliest historical record of CAY is the Norton Sound dialect recorded in Shaktoolik, probably in 1778 (ANLA 1778–2006; CY778, K1778). Twenty-eight Yupik words contained in the record of Captain Cook's North Pacific expedition (King 1784: 554–555) can be identified with the dialect both from the linguistic and circumstantial evidence – 15 body parts, 3 nature, 3 man-made objects, 2

2. Hooper Bay and Chevak (HBC – *Cup'ik* dialect)
3. Nunivak (NUN – *Cup'ig* dialect)
4. General Central Alaskan Yupik (GCAY – Yukon [Y], Nelson Island [NI], Coast area [KC], Kuskokwim [K], Bristol Bay [BB], Nushagak River [NR], and Lake Iliamna [LI], once know as the *Yuk* dialect)
5. Egegik (see Fortescue et al. 1994, Jacobson 1998).

The fairly isolated nature of Egegik among CAY dialects (with some similarity to Alutiiq) has been pointed out by Jacobson (1998: 198).

There is evidence for at least one extinct dialect that shows some resemblance to that of Nunivak meagerly documented from the Aglegmiut who were in the service of the Russians. This is suggested by a short vocabulary preserved at the Bureau of American Ethnology with the misleading place name of 'Mt. St. Elias', though we have little concrete knowledge of its exact location (Miyaoka 1974a).

See Jacobson (1998) for detailed information on Yupik dialectology, based chiefly on basic lexicon of CAY. The only grammatical description available of a dialect other than GCAY (4 above) is on the Chevak (2) due to the very valuable contribution by Woodbury (1981, 1987b, etc.), apart from scanty information from Norton Sound (1; Unaaliq) collected by Swadesh (1952a, b). Grammatically, CAY dialects seem to be basically coherent and have little difference, while we come across considerable disagreements in matters lexical among speakers.

The subject of this grammatical description is GCAY. My major Yupik consultants since 1967 listed with acknowledgements in Foreword (pp. xii–xiii) have mainly come from the Kuskokwim River Delta area (including the Coast), Nelson Island, and Lower Yukon, though some later moved to the cities.

ii) CAY suffered from an accelerated decline in vitality under ever-increasing pressure from English, especially since the advent of bilingual education in 1970 and the introduction of television to rural Alaska in the 1980s. Nonetheless, it is still spoken by about 10,000 people (42 per cent of 21,000 Yupiks according to Krauss 2007: 414). The language has a fair amount of dialect differences, pervading the traditional Yupik-speaking area of southwest

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yes/no, 5 numerals. This dialect also received the first scientific treatment by Swadesh's Kleinschmidt Centennial articles 'Unaaliq and Proto Eskimo' (1951–1952; cf. § 1.4-ii) in IJAL which are based on information from a St. Michael Islander. Despite this historical attention, the Norton Sound dialect is now one of the CAY dialects for which we have the least extensive linguistic information, including dialect position and situation (cf. Jacobson 1980; Miyaoka 1982, 1984a). See § 12.3.1 for the term *Qiimiut* as the designation for the people of the area, which represents one of the phonological dialect features.

Alaska. In addition, several thousand Yupik speakers are now urban dwellers (mainly in Anchorage). Although there were some monolinguals among the oldest people a generation or two ago, no monolingual elders are now known to remain. However, there are some preschool children, particularly (or perhaps only) in outlying villages, who are first raised solely in the traditional language. Recent and reliable information on this is provided in Krauss (1997: 6; 2007).

Bethel is the hub of the entire GCAY area (and CAY area for that matter) and it has seen a drastic change in its linguistic situation over the past fifty years. Probably more than half of its roughly 6,000 inhabitants are now non-Yupik newcomers (not only American but Asian and European as well). Even among Yupik families, many are regarded and known as 'semi-speakers', and an ever-diminishing number of children can speak Yupik. At the opposite extreme, in the remotest villages from the Yupik hub, say, in Nelson Island and the Coast area, with a population generally of less than 500 (with perhaps only 5% non-Yupiks), the language is still very strong. A 45-year old Nelson Islander fluent in Yupik, whom I met a little more than forty years ago when he was still a small boy, recently appeared before me and impressed me with an important piece of native-intuitive information that contributed an important insight into the language that I had failed to get from elsewhere in that time.

Be it at Bethel or elsewhere, the percentage of native speakers among the Yupik population is increasingly small under the pressure of globalization, just as anywhere else in the world. At the beginning of the twenty-first century, it is assumed that, of the whole Yupik population of approximately 25,000, roughly 4,000 (or more) have migrated to Alaskan cities, especially Anchorage. Indeed, the Yupik people generally seem to retain remarkably strong ties with villages even after their move to cities. It remains a question whether these ties may be of some help in slowing the otherwise rapid replacement of the language by English and the total loss of the full 'conservative' version of the language, given that the long-time urban residents, as a matter of fact, tend to show measurable (but steady) decline in native linguistic competence.

Under the increasing pressure of English, not only the number of the language's speakers but also the domains of its use have been on the decrease. Today, most of the people indeed speak both Yupik and English to varying degrees of competence, but the younger generation consists increasingly of semi-speakers who have rarely acquired the language without much attrition; the exceptions are those living in villages who have acquired it in an unreduced form directly from members of their (grand)parents' generation, for instance, who speak the full, 'conservative' version of the language. Although there is no overall survey of this matter, my general impression is that the conservative speakers of the language, if any, without heavy English influence, may only be found among speakers in their (sixties-)seventies or older. This, of course, depends upon how we define 'conservative'.

In the case of CAY, it is also particularly striking that, the linguistic attrition varies widely from one speaker to another, depending upon their age, the village in which they were raised, their residences in later life, family situations (common language, spouse, etc.), school education, post-school occupation (place and length), and so on. This is all the more noteworthy as this has greatly increased the width not only of lexical but grammatical variation and fluctuation, very often causing difficulty in generalizations in linguistic documentation (as mentioned in Foreword-i).

Accordingly, despite the hope for its survival as a language beyond the twenty-first century mentioned above, the version of CAY that will be spoken, say, in two generations from now may be a more or less heterogeneous language that will be quite beyond comprehension of many old and conservative speakers of today (see § 1.3-iii below for more details).

3. Postcontact status and current status

i) Since the earliest days of contact with the Western world, all native Alaskan languages, of which CAY now has the largest number of speakers, have undergone a steady decline in terms of their viability and numbers of speakers. However, the pressure against the native language was relatively not so strong in some regions, say, the Kuskokwim, within air access available as late as 1940's and the influence of Moravian missionaries since 1885 (see, e.g. Henkelman and Vitt 1985: 38–46, etc. on the native language situation).

The assimilation policy of the American educational system was most influential in this decline by openly suppressing the use of any language other than English in the classroom (Miyaoka 1980). The older Native people still retain vivid but gloomy memories of those old days when they had to go without lunch, had their mouths taped shut, or received even more severe corporal punishments, just because they uttered a single native word in school. Some parents, perhaps fearing reprisals from teachers or feeling that knowledge of Yupik would somehow interfere with their children's ability to absorb English, which they saw as essential to the future success of the younger generation, ceased to speak their own language even at home. Until the late 1960s it was actually illegal to teach in any language other than English.

It was not, however, only the language that was discouraged or prohibited in school. The native-cultural background of the children as well was totally neglected or denied in the school curriculum. Approved curricula usually included the same standard subjects taught in public schools of the continental United States, and used the same white American-type teaching materials. As such, they were not culturally oriented toward the children of rural Alaska. Even though the number of village schools for native children gradually increased,

high school students had to attend boarding schools in Southwestern Alaska, etc. far away from their homes together with children from different native linguistic communities, and all of this during the most important years of their formative period. The estrangement from the native environment into which these children were born went far in breaking down their cultural, linguistic, and family ties. To be successful in this educational system inevitably implied alienation from one's own family and native heritage. The expansion of the U.S. policy of English-only schools steadily served to oppress the native cultures, thereby diminishing the viability of the native language, although the explicit linguistic assimilation may not have been as successful with regard to discouraging Yupik retention as was the case with most of the other native languages in the United States.

ii) The rapid decline of the language came ironically (though reasonably) after the introduction of bilingual education in 1970 in particular (Miyaoka 1980), aside from the rapid adoption of the 'American way of life' (below). The U.S. assimilation policy continued until at least 1970 when bilingual education started in the CAY area for the first time in the schools of the Bureau of Indian Affairs (parallel to some other native areas in the lower 48 states, such as among the Navaho in the American Southwest). Public schools of the State of Alaska also joined the effort to expand bilingual education statewide. The expansion of bilingual education has indeed served to reinforce native linguistic awareness and ethnic identity. But these new policies, especially those of the BIA, soon turned out to be basically assimilationistic in nature in that the essential purpose of bilingual education was to facilitate a swift shift from native languages to English (as openly expressed by BIA officials; Miyaoka 1980) instead of healthy bilingualism for the years to come.

The people gradually began to realize, however, that bilingual education as such constituted a kind of Trojan Horse that would not help retain their language, but instead more endanger it by facilitating the shift to English. Accordingly, there have been attempts at providing a bilingual education geared toward retaining both languages in more native-oriented schools (e.g. efforts along the line of immersion programs). At the time of this writing it may be difficult to predict the outcome of this process, though many tend toward pessimism with regard to the retention of GCAY. See Krauss (1973, 1979, 1994, 1997) in particular for the tremendous changes in the language situation and the fundamental issues involved.

iii) The increasing influence of English on CAY in recent years, especially after the introduction of television and the heavy influx of non-native populations into southwestern Alaska particularly since the 1980s, has been more easily noticed among the younger generation. Many of them have various degrees of passive competence only. Lexically, the language they speak is now more or

less Anglicized. This is not simply a matter of the amount of English words and (Yupikalized) loanwords. Categories concerning traditional subsistence life and Yupik-like grammatical features that are alien to English and American culture have tended to be most susceptible to erosion. The most serious losses are notable in the use and the system of the rich demonstratives (as directly connected with their traditional subsistence life; § 12) and in indirect expressions (§ 6.1).

Many young speakers have difficulty in acquiring the creative morphology that is characteristic of the language. Their speech is apt to be morphologically less synthetic than the traditional speech retained among older people (§ 4.1.3.1-v) as an obvious consequence of the influence of analytic English. The syntax has necessarily followed suit. As a result, the speech of younger people is gradually becoming something more or less difficult to understand or even alien to their own elders, who in turn often criticize it for being "babylike." In turn, the more conservative language of the older set, with all of its intricacy and richness, has become difficult to understand for younger people. This has also led to new cultural misunderstandings between the generations, adding to long-standing cultural gaps between the Yupik and outsiders. This linguistic change among the younger generations seems to feed back into that of the older generation, who are apt to adjust to the former (instead of the other way round) and to avoid their traditional way of speaking as a whole.

While the older generation used to see English as a language forced upon them from the outside, younger people generally have come to accept it more or less willingly and positively. This change of psychological attitude toward their traditional language and the expanding role of English can be expected to be a crucial and negative factor for language retention and revitalization. Since 1970, with the advent of bilingual education and literacy in Yupik (cf. practical orthography, § 3.6), a growing portion of native speakers has re-embraced their own language. These speakers are eagerly attempting to revitalize and enrich the language through its wide and creative use in many domains of life. But it should be added that, among a significant portion of the Yupik people, the future and ongoing loss of the language is not the overarching issue that it is among some other native groups in the lower 48 states and other parts of the world.

The general tendency in a growing number of native communities is that children no longer learn Yupik as their mother tongue. As a result, the language is certainly threatened as the intergenerational transmission in the home wanes. Even though one may believe, as stated above, that the language will survive this twenty-first century, one would reasonably wonder whether it can be a language intelligible to today's elder speakers as a basic medium of communication. One cannot foresee the future, but it is often difficult to be optimistic and, for me, it seems reasonable to say that the traditional CAY has already fallen into the category of "definitively endangered" languages (Brenzinger 2007). Barring urgent efforts to reverse the present decline, both from outside and in-

side, as well as drastic attitude changes among Yupik and an invigorated determination for preserving their own language, a gloomy prognosis may not be unrealistic.

One of the most recent and vivid report through a native speaker's eyes on language situation and revitalization efforts of CAY is available in Mather (2004).

4. Previous studies and sources for this description

i) Missionaries of different Christian denominations began working in various dialect areas of GCAY in the nineteenth century. While the Russian Orthodox began their evangelization efforts in the Bristol Bay and the Yukon area in the early 1840's (with a mission established at Nushagak and Ikogmiut [Russian Mission]), the Moravians arrived the Kuskokwim in 1885, and Roman Catholic Jesuits worked mainly in the Yukon area beginning 1886, with each denomination devising its own writing system for the native language. The latter two were more active than the Russian in producing their ecclesiastical literature (the Bible, liturgy, hymns, etc.) in their writing systems and in accumulating lexical and grammatical materials.

In the late nineteenth century, Helper Neck, a native of the Kuskokwim area (from Akiachak *Akiacuar*), evidently inspired by the Moravian missionaries' literacy work as a "stimulus diffusion" (Kroeber 1940), developed his own writing system starting from a pictographic stage, and developed it into a syllabic system. Partial knowledge of it may be still minimally retained by some elders, but its practical command is totally lost. This "Alaska Writing" was described by Schmitt (1951) from Neck's manuscripts and by Hammerich (1977) using a manuscript from a Nunivak native, both illustrating numerous features of the history of the development of the art of writing.

With the assistance from Helper Neck and other Helpers, the Moravian work on Yupik language progressed fairly well, mainly in the Kuskokwim area, and the whole New Testament *Kanerearakgtar* [*Qaner-yara-qegtaar* 'good word'] was completed in 1954 by Rev. Ferdinand Drebert (cf. Drebert ca. 1944), being accepted enthusiastically among the natives (Henkelmann and Vitt 1985: 218–221, 366–373, etc.) and being still used in the church with a lingering attachment to it among the older generation. Parts of the Bible, including the Old Testament, and hymns have now been transliterated into the practical orthography (below).

Short grammars were written by the Moravians Schultze (1889, 1894) and Hinz (1944), and by the Jesuits Barnum (1901; cf. JCIR) and Martin J. Lonneux (undated manuscript). The Moravians' linguistic works were influenced by the West Greenlandic and Labrador grammars and dictionaries that had reached a

high standard (starting from Kleinschmidt 1851 under the historical setting since Hans and Paul Egede through 1720's – see Bergsland and Rischel 1986).

ii) Academic attention was first directed to CAY by Morris Swadesh, who published a number of articles, both descriptive and comparative, based on the Unaaliq [NS] material that he collected from a speaker over the course of a few days (Swadesh 1951, 1952a, b, c, d; cf. fn. 2). Gordon Marsh, who had worked on Aleut (Marsh & Swadesh 1951), was the first linguist at the University of Alaska and left some lexicon from Sleetmute, Upper Kuskokwim (late 1950's).

The professional period of inquiry gathered momentum in the 1960s. A serious scientific study of CAY began in 1961 at the Department of Linguistics of the University of Alaska, Fairbanks, by Michael E. Krauss especially with his then two students, the late Irene Reed (cf. the written source IRES) and Martha Teeluk (originally from Kotlik). A fruit of the intensive research of the period includes the college level classroom grammar by Reed et al. (1977), the very modest version (ca. 150 pages) of which was completed in early 1969 by Miyaoka and his collaborator, the late Paschal Afcan (born at Akulurak, Yukon delta) as instructional material at the University.

The Yupik dictionary with ca. 8,000 entries compiled by Jacobson (1984a) with the full collaboration of many speakers and a few linguists has benefited all concerned, both native and non-native, and its enlarged new version, to be published in the very near future, reportedly contains 10,114 entries (Michael Krauss, p.c. – without access to this writer). The 1984 Dictionary has been most helpful as the substantially only lexical source for my grammatical documentation, with supplementary help from the Moravians Hinz (1944) and Drebert (ca. 1944).

Recently Jacobson also published an important pedagogical grammar (1995) by richly enlarging Reed et al. (1977) with exercises, short vocabulary, and information on CAY dialectology, etc. Another publication of his (1998), a dialect atlas of more than 200 pages, will remain a uniquely valuable contribution to Yupik dialectology, all the more so given the rapidly diminishing dialect differences and the passing of knowledgeable old speakers of the language.

An in-depth description of a single CAY dialect, i.e. of Hooper-Bay / Chevak (or Cup'ik), has been accomplished by Woodbury (1981) in addition to sophisticated works on syntax (1985b, 1985c), rhetorical structure and prosody (1985a, 1987b, 1989), etc. Mithun has made enlightening contributions in various grammatical topics of GCAY, such as suffixal morphology (1998, etc.) and polysynthesis (2009, etc.), prosody and discourse (1996), valency change (2000), and so on. Krauss (1973, 1979, 1985) describes details of linguistic work on CAY done in 1970s and the early 1980s, in addition to the most fundamental work of v) mentioned below as his another important contribution. Miyaoka's work on Yupik is given in the References.

iii) The linguistic work at the University of Alaska under the leadership of Michael Krauss constituted a true beginning toward the recognition of the language in Alaska, and ultimately, in a way, of American Indian languages all across the United States.

Arduous research conducted at the UAF Department of Linguistics resulted in a primary version of the "Practical Orthography" (§ 3.6). Its creation was the initial task toward the preparation of a bilingual education program (started in 1970). See Afcan ([1970] 1976), who read 'on behalf of all the Yuk Eskimos' an account of the excited acceptance of the new writing system and the significance it was projected to have on the future of the language. The orthography was largely disseminated through a significant quantity of Yupik material and books published by the University's Eskimo Language Workshop. It was revised around 1973 into "New Orthography" (also called "Revised Orthography") and has been the basis for the Yupik bilingual programs started in 1980 – although the old version is still used by some people, native and non-native, who learned the practical orthography in its earlier form.

Several factors were carefully discussed in the first stage of determining the (old) practical orthography. One of the most important was whether it could provide an easy transition to and from the English (Roman) alphabet. Another prime determinant was attaining maximum similarity with previously existing Eskimo writing systems, not only within but also beyond GCAY. Similar external forms among many Eskimo languages, we agreed, could not only facilitate the reading of the other languages, but would be important in helping people become aware of how much their languages resemble each other, even if mutually comprehensible only to a marginal extent. This in turn might contribute toward strengthening ethnic identity. It must, however, be noted that some disagreement in the choice of letters between the GCAY orthography and the closely neighboring Inupiaq system of northern Alaska (see e.g. MacLean 1986) had to remain. The adoption even of the famous syllabary as among the Canadian Inuit, was also taken into some consideration (since the language has much fewer syllables than languages such as English), though this was not pursued, in large part because it would constitute a vast departure from the English alphabet.

The practical orthography is enjoying a wider acceptance, if gradually, among the native (and non-native) people and institutions concerned, but it must be remarked that sufficiently correct users of it seem to be still rather limited in number. See § 3.6 for the advantages and disadvantages of the current practical orthography.

Woodbury (1997) devised a Cupik version of the orthography that better reflects the slightly different phonological system of the dialect (Chevak), which is fragmentarily illustrated (§ 2.3.2, § 3.2.3, § 3.2.5.1, etc.)

iv) Apart from the missionary documents in the earlier writing systems, the current expansion of bilingual education and resurging interest in the language among the people concerned has produced an unprecedented amount of written materials (primarily schoolbooks for the elementary grades, but gradually beyond that level as well). Since the mid-1980s an increasing amount of oral narratives – folkloristic and historical (ethnographical) – particularly by elders, has been transcribed and published in the practical orthography (with or without English translations). In addition, a few original writings entirely in Yupik have begun to appear, e.g. CAUY [see *References/sources*, pp. 1577–1601], based on extensive field research and interviews pertaining to pre-Christian Yupik ceremonies (Elsie Mather 1985), and ELNG, still the only full-length work of creative writing (novel) composed in Yupik (Anna Jacobson 1990). The textual corpora for CAY may now encompass 10,000 printed or electronically entered pages (Michael Krauss, p.c.). Another remarkable feat achieved by native speakers is the first Yupik dictionary of Cup'ig dialect (Amos and Amos 2003; 535 pages).

These recently published materials have been put to limited use for the purpose of this grammatical documentation. However, the primary source for the information in this volume was directly supplied by Yupik speakers themselves, who directly communicated their understanding, usages and insights to the author.

v) Michael Krauss has made tremendous effort since early 1960's to assemble a (near-)exhaustive collection of the linguistic material – original and photocopied manuscripts and typescript documents comprised of academic research papers; fieldnotes, particularly pertaining to Central Alaskan Yup'ik place names, phonology, and verb forms; wordlists; ethnographic, religious, and traditional texts; and educational materials – or any of twenty Alaska Native Languages for that matter –, cataloguing with meticulous notes. The collection forms an invaluable asset to the knowledge of Central Alaskan Yupik and the people concerned, with the *Guide to the Central Alaskan Yup'ik Language Collection* (1778–2006) through Alaska Native Language Archive, University of Alaska Fairbanks. His map *Native Peoples and Languages of Alaska* (Krauss 1982) is widely distributed for academic and practical use.

5. CAY's geographical placement among neighboring languages

i) Eskimo-Aleut is located in the North Pacific Rim, an arch extending from Korean Peninsula and the Japanese Archipelago on one end to California (at approximately the same latitude), which looms linguistically as a somewhat delimited region in that, flanked by widely distributed language families in

northeastern Asia and in northwest North America, it is generally characterized by isolates (such as Ainu, Nivk [Gilyak], and Yukaghir) and small families containing only a few branches or sister languages (such as Chukchi-Kamchatkan and Eskimo-Aleut) apart from a few representatives of Tungusic languages (Miyaoka et al. 2007). This narrow belt of isolates and small families extends across the Bering Strait and down along the northwest coast of North America, with language distribution becoming more dense and typological diversity increasing well into California, where it reaches its peak. Though containing two languages, Chukchi and Alaskan Yupik Eskimo, with a substantial number of about 10,000 speakers, they are all severely endangered or even moribund.

On the eastern side of the Bering Strait, the American continent north of Mexico contains around sixty indigenous language families of which about sixty percent are concentrated in the small region of northwestern North America.[3] The full number includes approximately 150 genetic units (Campbell 1997: 107–55, cf. also Mithun 1999: 326–586 and Miyaoka1992: 1048–1066).[4]

Certainly, the North Pacific Rim, as such, is a region neither so wide nor so high in the number of languages for the Pacific as a whole, compared with some other regions in the world. But it is a corridor teeming with languages of diverse and often obscure lineage, with over forty genetic units of such obscurity as to have led Boas (1911: 58) to the idea of 'uncertainty of definition of linguistic families' as he became absorbed in the Northwest Coast Indian languages and the Jesup North Pacific expedition (1897-1902; Boas 1905 [1902]), which covered indigenous groups from the Columbia River to the Amur River. Krauss (1996b) gives detailed information about the linguistic diversity and the current status of the whole area. See also Miyaoka (2009).

Geographically, a wide distribution of a single language or a single linguistic family over an extended area may, more often than not, reflect a relatively recent and large-scale expansion in which one culture may have swept away smaller aboriginal languages or families. But it also is plausible that the linguistic diversity of the North Pacific Rim reflects an older stage in which diverse

3. In terms of Cultural Areas (A. L. Kroeber), the North American region comprises the Arctic and Subarctic, the Northwest Coast, a portion of the Plateau, and California. The only other region in North America that comes somewhat close in linguistic diversity is, though beyond of the scope of this book, in the Southeast part of the continent, centered on the Gulf of Mexico. Outside these two regions one finds a relatively small number of widely distributed language families (Algonquian, Siouan, Iroquoian, etc.).
4. The fact that the "geographical centre of gravity" (see fn. 8) of the indigenous languages lies in the Northwest could arguably be seen as linguistic support for the coastal theory of migration to North America (as first suggested in the early 1960s by C. J. Heusser et al. and recently supported by Canadian archaeologists) rather than the conventionally held "ice-free corridor" theory – cf. Miyaoka 1992.

small languages of different lineages jostled with adjacent languages without either being fully absorbed or typologically leveled by encroaching newcomer languages. Such small languages may certainly have interacted in various directions and to varying extents for a long time, ultimately resulting in drastic typological changes and a genealogical trail too complex or opaque to trace with certainty. The genealogical diversity and obscurity is naturally paired with the typological diversity as found in the North Pacific Rim. Typologically diverse as this is, it is true that the area also is dominated by highly synthetic or polysynthetic languages, which by itself is a remarkable contrast from Southeast Asia.

In talking about linguistic differentiation in America, Sapir ([1916] 1957: 455, fn. 48]) does not consider it at all inconceivable that Eskimo-Aleut may ultimately be shown to be the latest linguistic arrival in North America after with the widely expanded Na-dene (now not including Haida unlike Sapir's).

ii) To Morris Swadesh who was interested in the prehistory and typology of languages across the Bering Strait (Swadesh 1962), Eskimo-Aleut was, at one point, reminiscent of the all-suffixing synthetic structure of four geographically contiguous languages of the Northwest Coast, namely Kwakiutl and Nootka (Wakashan family), and Quileute and Chemakum (Chemakuan family) (Swadesh 1948: 106).[5] He further wrote a paper "Linguistic Relations across Bering Strait" (1962), dealing with Eskimo-Aleut and Chukchi-Kamchadal as part of a network to 'include' the mentioned American languages on one hand and Ural-Altaian, Ainu, Gilyak, Sumerian etc. in the Eurasia on the other, on the assumption 'it may be easier to connect Eskimo with Chukchi, then Chukchi with Uralic, and finally Eskimo with Uralic.'

More recently Fortescue (1988b, 1998b, 1994a) listed shared typological traits by surveying various attempts to genetically connect Eskimo-Aleut with various Old World language groups and talked about language relations across Bering Strait (1998), though Campbell (1997: 188) concluded that these shared traits are indicative of general typological tendencies, found not infrequently elsewhere in the world, and thus quite possibly shared only accidentally and not adducing strong evidence of a possible genetic relationship. To the knowledge of the North Pacific Rim, Fortescue (2011) has furthermore contributed a very important investigation which plots the orientational system (cf. § 12) of all the languages involed.

5. He in fact suggested the possibility that the all-suffixing language area developed in an epoch when Wakash-Chemakuans were in geographic contact with Eskimo-Aleuts, before the wedging-in appearance of Eyak-Tlingits and Haidas in their present location, eventually becoming more eager to find evidence for an interhemispheric relationship.

The 'Eskimo-Uralic Hypothesis', a part of Swadesh' "network", was proposed by Rasmus Rask, C. C. Uhlenbeck (cf. Hein van der Voort 2008), Aurélien Sauvageot (1953), etc. since the beginning of the nineteenth century.[6] Together with this hypothesis, the relationship of Eskimo-Aleut and Chukchi-Kamchadal was under careful and critical review by Bergsland (1959, 1979). He also paid a careful attention to the Amerinidan neighbors, including Eyak, Tligit, Athabaskans of interior Alaska and western Canada and the Algonquian of eastern Canada, finding in Eskimo and Aleut practically 'no immediate linguistic traces of the contacts' (1979: 13–14). The genetic relationship of Eskimo-Aleut and Chukchi-Kamchadal was also rejected by Menovshchikov (1974), though not denying old contacts with each other and with the Eurasian languages to the west.

Krauss in his survey of Na-Dene and Eskimo-Aleut (1979: 805) believes one must conclude that Proto-Athabaskan and Proto-Eskimo were not in contact, although they were both in Alaska at one time, the former in eastern Alaska, interior, perhaps extended into Canada already and the latter in western Coastal Alaska ("Beringia").

As shown in later chapters, CAY (like other Eskimo languages, for that matter) is an "agglutinative" language with the use of suffixation almost to the exclusion of other morphological processes (§ 4.1.1). It has basically no consonant clusters at the beginning or end of a word and only two consonants medially (contrasted with, say, Bella Coola at one end and Itel'men or Nivkh [Gilyak] at the other), and has no pre- or postpositions apart from postpositional location nouns (like 'interior', 'area below'; § 11.2).

On the other hand, the features reminiscent of the so-called "Altaic"-like languages to the west might conceivably deserve a more through inquiry, which might turn out to show nothing but another spurious typological resemblance but still a possibility of Eskimo-Aleut being geographically cut off from the "Altaic continuum" in Eurasia by the wedged-in Chukchi-Kamchatkan languages in a remote past.

Thus, we have no genealogical evidence yet for connecting Eskimo-Aleut with any other language (family) in the north, apart from one indubitable trait of aboriginal contact between Chukchi and Siberian Yupik, which left a conspicuous number of loan particles and conjunctions from the former to the latter (but hardly to Alaskan Eskimo or Aleut) – Comrie 1981: 251–252, de Reuse 1994: 330–455.[7]

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6. Far beyond this, "Can Eskimo be related to Indo-European?" was a question raised by Hammerich (1951).
7. According to Menovshchikov (1964: 26), it is possible that some essential and structural differences from all the other Eskimo languages may suggest that Sirenik people, isolated from other Eskimos for a long period of time, had contacts with some other linguistic families.

All this above may lead us to assume that that Eskimo-Aleut underwent an isolated development in the vicinity of its own Urheimat – presumed to be located somewhere in western coastal Alaska,[8] generally where CAY has been historically located, in general – for a considerably long period of time before its rather late expansion eastward (into Eastern Eskimo). During this period there was little, if any, significant contact with other genealogically separate languages, possibly resulting in a rather isolated type of language (family) of its own.

8. Given as the "geographical centre of gravity" (Sapir 1916) of Eskimo-Aleut languages, in refutation of the ethnological theory of their origin among the Caribou Eskimo (an Eastern Eskimo group west of Hudson Bay), a previous hypothesis revised by archeologists around the 1960s (cf. Miyaoka 1984: 113–117).

Chapter 2
A word in Yupik

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1. A word as a "form"

The "word" weighs heavily in the grammar of CAY (and other Eskimo languages, for that matter), perhaps much more than those of a majority of the world's languages, though the word would be a fundamental and inevitable entity in any human language, either an isolating language as Classical Chinese or a "polysynthetic" one like Eskimo. This would be a necessary consequence of converting thought or feeling into speech sounds in a human language, with all its pre-linguistic, i.e. physiological and psychological, limitations and constraints.

I fully agree with the standpoint expressed by the late Rokuro Kono 河野六郎 (1912–1998)[1] in prefacing the six-volume *Sanseidoo Encyclopaedia of Linguistics* 三省堂言語学大辞典, in that 'the genuine object of linguistics is a word' (Kamei et al. [eds.] 1988–1896, 1: ii; [translation mine]). At the same time, I must confess my great indebtedness to Edward Sapir who laconically described a word as 'merely a form' (1921: 33), and beneath whose passages, one may

1. R. Kono is regarded by the late Professor Chino Eiichi (1832–2002) in one of his numerous enlightening books of general linguistics (2002: 175–229) as one of 'ten linguists who established the modern linguistics' (incl. B. de Courtney, F. de Saussure, V. Mathesius, S. Karchevski, A. Martinet, I. Meshchaninov, E. Sapir, R. Jacobson, and A. Meillet) particularly in view of his deep insights in linguistics and established grammatology 文字論 (not 文字学), cf. lexigraphism 表語性 of writing (§ 2.5-ii)

infallibly detect the echo of the words of Benedetto Croce (1866–1952), who claimed that linguistics is 'nothing other than the Aesthetic' (*estetica* as investigation of a fundamental capacity of human beings) and that 'aesthetic activity is … a matter of giving form, and nothing other than a matter of giving form' ([1902] 1992: 156, 17).

i) Polysynthesis has been a highly important feature in the typological characterization of Eskimo,[2] although linguists have not necessarily reached a consensus on precisely what type of language it refers to (see e.g. Fortescue 1994b, Baker 1996, Evans and Sasse 2002, Matissen 2004, Mahieu and Tersis eds. 2009, etc.).[3]

Fully aware of the messiness of the problem, which may derive from the actual arbitrariness in what one deems to be a word, for one thing, and also from its long-standing confusion of polysynthesis with the concept of "incorpora-

2. The term polysynthesis was applied to Greenlandic Eskimo at least as early as the Danish Eskimologist WilliamThalbitzer (1911: 1057).

3. The term itself was first used most probably by the French philosopher and linguist, and president of the American Philosophical Society, Peter S. DuPonceau (1760–1844) in an account of linguistic typology in his correspondence (July 31 and August 30, 1816) with the Moravian minister John Gottlieb E. Heckewelder (1743–1823; [1819] 1876: 390–392, 416) about the Delaware Algonquian grammar written by the latter's predecessor David Zeisberger (1721–1808) – see Miyaoka (2002: 55). DuPonceau, who built on the emphasis laid on linguistic study by Thomas Jefferson, his predecessor at the Society, while influenced by Wilhelm von Humboldt (cf. fn. 4), was well-versed in American Indian languages and well-read in the linguistics of the time, as was Heckewelder. DuPonceau's first use of the philological term polysynthetic as early as 1816 precedes the first *OED* citation of the term from 1821 Southey. His definition "...des langues qui comprennent le plus grand nombre d'idées dans le plus petit nombre de mots possible" (DuPonceau [1835] 1938a: 89) reminds substantially of the same as Greenberg's quantitative index of morphemes per word (Greenberg [1954] 1960). Thalbitzer, once writing on Eskimo as a linguistic type (1930: 898), "summed up the words of two parallel texts, one hundred Greenland words were, on an average, translated by six hundred sixty-six English words, this being the shortest translation possible, if every significant element of the Greenland words were to be accounted for".

   DuPonceau's set of five linguistic types (exposed in the same letter of July 31, 1816, and found in the first edition of *Encyclopaedia Americana*, vol. 10, 1832: 82) – i.e. asyntactic, analytic[al], synthetic[al], mixed, and syntactic or polysynthetic – which may have attracted more attention in North America than in Europe, is elaborate enough and at least comparable to the notable classifications by famous European erudites of the day – cf. Miyaoka (1992b: 1026–1028). Incidentally, there is another important reason why DuPonceau is mentioned here, as it concerns the very nature of 'words'– see § 2.5-ii (lexigraphism).

tion",[4] the term polysynthesis is employed here as a purely morphological process notably in the Sapir-Greenberg-Mithun tradition, referring to the high degree of synthesis of a word (morphemes per word), irrespective of the morphological processes employed in each language and not counting clitics. Noun incorporation, the use of which I refrain in my work (§ 4.1.1-i), is employed in recent Eskimo linguistics, e.g. by Sadock (1980, 2003) for Greenlandic, roughly covering verbalizing (denominal) derivations (§ 4.2.5.1-i, § 37, § 38). See, however, nominal "stranding" (§ 4.2.5.5.2-i, § 25.2.2-i) and "discharging" 放出 (Kono 1989: 1582, 1996: 1298) which is basically a process contrary to noun incorporation in its wide sense.

In § 2.4, minimum illustrations are provided to give some preparatory idea of GCAY words and other larger units employed, i.e. two kinds of bound phrases (§ 3.1).

ii) Modern linguistics owes the concept of "double articulation" to André Martinet (1949), a feature which, no one would disagree, is the very source for the economy and productivity of a human language, and without which a language would be 'a tool unusable for its purpose' (Hjelmslev [1943] 1953: 29).[5] The term "articulation" itself, however, is bivalent – both 'dividing' and 'jointing together' (*Oxford English Dictionary; OED*). While Martinet' double articulation (into morphemes [monèmes] and into phonemes – 二重分節)[6] is based on the first sense, the term is used in the second sense of "bilateral articulation" (二面結節; § 2.2, Miyaoka 2002) as a speech process of linearization. Cf. Sapir's use in "…unifying accent. But stress has done more than *articulate* or unify

4. As is well known, Wilhelm von Humboldt (cf. fn. 3), using information about North American languages received from DuPonceau, proposed the concept of incorporation (*Einverleibung*) in Classical Nahuatl (Uto-Aztecan, Middle America) in 1836 (Humboldt 1971, 1994). Heymann Steinthal at least, who looked upon himself as the successor to Humboldt, referred the Eskimo (and Mexican) languages to the Humboldt's *Einverleibung* type (1893: 135–154 [and 112–134]). Its unfortunate and notorious confusion with polysynthesis continued throughout the rest of the nineteenth century, and it was left to Sapir to make a sharp distinction between polysynthesis and noun incorporation as a kind of N+V stem compounding (1911a but, notably, not 1911b) – see Mithun (1984) on incorporation and § 41.2-i for its lack in Eskimo. Furthermore, the confusion seems now to be compounded by a basically different school of linguistics.
5. Martinet, while repeatedly discussing the disparity between a *monème* as the minimal sign and a '*mot'* (placed in quotes) in defining double articulation (1960: 112–113, 1965), has not assigned a place to the latter but apparently 'discarded' it instead (1960: 102–109; Matthews 2001: 88).
6. Japanese terms in *kanji* 漢字 are added when they may suggest helpful hints about the basic concepts concerned.

sequences that in their own right imply a syntactic relation" (1921; 118). Although the direction may sound opposite (top down vs. bottom up), the two "articulations" would *not* simply be the opposite sides of the same coin.[7] It is not a 'coin'-like bilateralism.

iii) A "form" 形 – or "articulus" 節 in bilateral articulation as understood here – is a realization or embodiment of one or more "pre-formal" but categorized abstract units (cf. *-emes* from Martinet's "first" and "second articulation", i.e. morphemes and phonemes) according to predetermined "grooves" (Sapir 1921: passim) or collective "patterns" 型 unique to the language concerned.[8]

2. Bilateral articulation

That a linguistic sign has two terms, sign-content and sign-expression, implies that there are two articulations that are necessarily paired with each other, namely, morpho-syntactic articulation on the content plane and the phonological articulation on the expression plane.[9] Each articulation should be a bottom-up dynamic process, implying that a phrase, clause, and sentence formation is also a matter of articulation, just like word formation.

2.1. Words and syllables as minimal forms

Words here are taken as a phenomenon on the content plane, while syllables belong to the expression plane. One may take a word to be the minimal "form" (or minimal unit that can be uttered in isolation) of morpho-syntactic articulation, following patterns on the content plane unique to the language, but *not* in terms of the (grammatical and semantic) content packed therein.

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7. It might be the case that viewing human speech as merely the other side (i.e. spreading out) of the principle of double articulation has possibly lead to obscuring the concept of a word.
8. The Chinese 「形」 'form' can also be verbal 'to realize, represent' and the Japanese *kata-chi* (form / 形) is a derivative of *kata* (pattern / 型) with the obsolete suffix, cf. also its derived *su-gata* (figure / 姿).
9. The 'plane' here has bilateral implications as postulated by Hjelmslev ([1943] 1953), to whom 'l'unité minimale essentielle est la syllabe' and the corresponding 'syllabes de contenu' on the content plane are minimal 'syntagmes' which often practically coincide with words (Hjelmslev 1966: 145–146) – a logical consequence from the glossematic isomorphism of expression and content. Morphological articulation is nothing but 'syn-tax' in its literal sense.

While words are minimal formal units on the content plane by definition, morphemes (as their building blocks such as root, stem, affix, etc.) constitute "pre-formal" (i.e. abstract) functional units. In parallel, it is the syllable (音節 'sound-joint') that is the minimal "form" on the expression plane (that can be uttered in isolation) that also follows phonological patterns unique to the language, while phonemes are pre-formal functional units.

Linguistic units employed in this CAY grammar are schematically given as follows:

Table 1: Bilateral articulation

	pre-formal	*form* (*articulus*)
content plane (morphosyntactic)	morpheme	word < (enclitic < non-enclitic) bound phrase [articulus] < phrase < clause < sentence [articuli] ...
expression plane (phonological)	phoneme	syllable < foot < larger phonological units

In this bilateral articulation as a "form-giving" process, with a word and a syllable as the minimal realized form (articulus) on each plane, both articulations proceed simultaneously bottom-up by joining together respective entities (morphemes and phonemes). On the content plane, this proceeds according to the informational structure that the speaker is following as well as the "grooves" or collective patterns unique to the language. Morphemes and phonemes are hierarchically brought together on each plane – the former into words, phrases, clauses, sentences, etc., and the latter into syllables and feet as they become simultaneously overlaid by a number of phonological features such as length, stress, pitch (intonation) (and their associated harmony, rhyming, sandhi, aspiration, nasalization, glottalization, etc.) but, most importantly, (potential) pauses that demarcate a one-dimensional form (§ 2.2.2).

A single morpheme can be articulated into a word (i.e. can be realized as a single form or articulus), while two or more morphemes can also form a single word. Thus a word may be either monomorphemic as in example (1a) or multimorphemic as in (1b, c) given in § 2.4-i, even if a multimorphemic word may not necessarily be fully disjointable into as many morphemes due to the amalgamation that may naturally arise within a "form". Example (2) is also a single word.

Similarly, syllables may be mono- or multi-phonemic. In CAY, a word may consist phonologically of a single syllable (in the shape of [C]V[C]) or a long stretch of syllables and morphologically of a single morpheme or a long stretch of morphemes.

It is *not until* "formed" that a word or a syllable can be uttered in isolation.

Phonological articulation 'backs' morphological articulation and lends it its well-formedness and its intuitive acceptance as a word (below). The simultaneous phonological articulation fortifies the formhood of the morphosyntactic

articulation, even though the articulations on the two planes may not necessarily proceed in perfect correspondence with each other (hence "mismatches"; § 2.2.3). It may be the case that the way in which the formhood of morphological articulation (of words in particular) can be fortified by its simultaneous phonological articulation could be conceived more easily in polysynthetic languages, particularly of the "non-templatic" type, with a dynamic morphology (§ 4.1.3).

The parallelism between the two planes itself implies that words, as distinct from morphemes which are pre-formal, could not be taken as something intermediate in level or size between morphemes and so-called phrases (a higher unit comprising two or more words), or as a higher unit beyond that of a (phoneme and) syllable.

See § 2.3 for bound phrases, enclitic and non-enclitic, as contrasted with words.

2.2. A glimpse into the "form"

i) A linguistic articulation as a form is intrinsically linear by nature (Saussure's Principle One for the nature of the linguistic sign),[10] that is, a one-dimensional expanse. But, in this respect, one may ask what it is that gives form to an expanse. If it is two-dimensional 'sides' that lend form to a tri-dimensional expanse of a 'solid' and if it is one-dimensional 'lines' that lend form to a two-dimensional expanse of a 'side', then two a-dimensional 'points' (a beginning and an end) are what lend form to a one-dimensional, i.e. linear, expanse. Forms such as lines should have no internal divides. If human speech is based upon the linear production of sounds, these 'points' would be nothing but (potential) pauses[11] (physiologically either with or without breathing) at the beginning and the end of each form; cf. Anderson's "potential pause locations" (1985: 151). Fundamentally, therefore, a word as a form will not have an internal pause without leaving behind a formally incomplete fragment. As a "formally satisfying unit" (Hattori 1950), it would not be until it is 'formed' that a word attains psychological reality – see also § 2.5-i.

In this connection it might also be of some help to be reminded of the simple fact that an isosceles triangle as a form, for instance, is taken as such only if it has certain features (three lines or boundaries with two of equal length), however large the expanse or space (i.e. content) enclosed by the lines may be. This

10. Given the intrinsic linearity of human speech, constituent order in articulation is destined to take on different functions, either on the word-, phrase-, sentence-level, or further, depending upon languages (§ 4.2.5.2, § 5.4, etc.).
11. See Chao (1968: 153–154) for Chinese, etc.

could suggest that grammatical and semantic content is secondary to words as a linguistic "form".

Besides the psychological reality, an important corollary of morphological articulation or the formhood may be that only when it is articulated or formed can a word undergo change or dilution/bleaching in content as a whole, a phenomenon that may be found in any human language. Expletives[12] (or meaningless particles far beyond more or less opaque lexicalizations or grammaticalizations) could be expected to serve in languages merely as empty fillers of syntactic or phonological slots. Expletivity would be a sheer necessity for the mere formhood of "words" as such.

In this vein, some rare morphological processes in languages, apparently anomalous or idiosyncratic, could be understood *only if* words are viewed as nothing but a form (Miyaoka 2002: 143–147) – § 2.3.3.

ii) As a matter of fact, it tends to be commonly accepted that a word is a static, fixed, or ready-made entity established prior to each speaker and stored as a single 'concept'. In languages like Eskimo, however, words may also be a dynamic, flexible, and continuous form-giving process by which each speaker is capable of producing a new word, even with a sentence-like content, a-matter-of-coursely or far from being nonce or ad-hoc, although within certain limits (as illustrated in § 4.2.5.4.1 in particular), and strictly following collectively shared predetermined morphological and phonological patterns unique to the language concerned (cf. § 2.5-i).

As such, a CAY word has the potential to be full of content and functionally equivalent to complex sentences in many other languages, packed with a variety of concrete, abstract, and grammatical concepts (as if to the bursting point). At the other extreme, in the same language, it may also be an expletive devoid of content that merely fills out a sentence – e.g. cushion-like "sentence fillers" (§ 53.6), which may have an important pragmatic effect. There should be nothing surprising about this, given that a word as a mere form is, as Sapir (1921: 33) exquisitely defined it, "… a definitely molded entity that *takes in as much or as little of the conceptual material* of the whole thought as the genius of the language cares to allow" [emphasis mine]. If it were the case, this may lead to the conclusion that, as far as a word is concerned, its syntactic or semantic rele-

12. Expletives are words that are 'empty' in content but simply 'fill' a phonological and/or syntactical slot (cf. Latin *explere* 'to fill out') and are not necessarily limited to isolating languages characterized by high monosyllabicity (below). Whereas a word can be empty content-wise, a morpheme on the content plane, by definition, must be 'full' (not meaningless). One may be reminded that Louis Hjelmslev felicitously coined the glossematic terms "plereme" (with the same root 'to fill') corresponding to morphemes and "ceneme" ('empty') to phonemes (then perhaps implying the "meaningless morpheme" as an oxymoron).

vance is secondary, and therefore attempts to define or analyze a word primarily from a syntactic and/or a semantic standpoint could ultimately lead to the denial of the concept of a word, or at least, for instance, to unrestrained use of the term "compound" in linguistics descriptions for surprisingly varied entities across languages. CAY incidentally has no compounds per se, as will be shown below (§ 2.4, etc.).

2.3. "Mismatches"

Returning to the subject of bilateral articulation, it does not necessarily proceed in perfect correspondence on two planes (expression and content), even though the two terms of any linguistic sign, which presuppose each other, are symmetrically paired. It would not be surprising that each plane has its own motives in the form-giving process. Terms within one plane bear multifarious 'se tenir' relations among themselves, independent of any within the other plane (cf. Hjelmslev [1943] 1953 and Saussurian 'valeurs'). These plane-internal mutual relations of the terms, together with the pre-linguistic limiting conditions and constraints (§ 2.1), are responsible for the abundance of apparent mismatches between the two units on different planes, which understandably induce us to make a distinction between a "morphological / grammatical word" and a "phonological word".

Given the nature of bilateral articulation as part and parcel of human speech controlled by the brain and speech organs, however, asymmetries or mismatches between the two types of "articuli" on the two planes would be a natural consequence of it. Nor would it be surprising that word boundaries do not necessarily match syntactic boundaries as in possibly controversial CAY "locative verbs" (12), which, *despite* having two inflections (nominal and verbal) involved, are regarded as single words, here suggested "phrasal compounds" (§ 2.4-vi; § 4.3-v).

Since a "word" here is taken to belong to the content plane in contrast with a "syllable" on the expression plane, this grammatical description does not commit to two kinds of "words" (grammatical/morphological and phonological) but sticks to only one kind of "word" by treating it as immediately contrasting with what we call a "bound phrase" (拘束句; with two types, i.e. clitic and non-clitic – § 2.3), which in turn contrasts with (free or syntactic) "phrase". This hopefully may help dissolve some of the "mismatches" and may suggest the possibility that part of what are commonly treated as "compounds" may well be reconsidered in view of "bound phrases".

In addition to mismatches, a word as a mere form is not so directly constrained by function as are syntax (in view of linguistic communication). Less functional constraints will allow for more freedom of form, given what the

American anthropologist A. A. Goldenwiser called "principle of limited possibilities" (1913). This could possibly be the very basis for how a word can vary surprisingly in size and in function as well as in content, probably contributing to tremendous intra- and cross-linguistic diversity, and it would be easy to see that the formhood itself of a word is at least partly responsible for the much greater diversity of linguistic morphology, or even that linguistic morphology is destined to be much more diverse and complex, than syntax – hence, by the same token, linguistic diversity than non-linguistic culture (in view of environmental adaptation). See Miyaoka (2007: 150–158).

To add, articulation as a form-giving process is not only a matter of speech but is a matter of writing by recourse to visual forms as well (§ 2.5-ii), not surprising given that writing is a more or less exact transfer of speech.

3. Words, bound phrases, and phrases

i) A word may be a "free/independent word" 自立語 if it occurs as a single form or articulus to be uttered in isolation without any other word being inserted, while a language may have a "clitic" 倚語, which is typically articulated in phonetic dependence (i.e. clining) upon another word (host).[13]

A CAY free word is either mono- or multi-morphemic and may be subject to a great extent and variety of suffixation, which is by far the predominant morphological process in the language (§ 4.1.1). The language has no stem compounding per se (despite the oft-expressed generalization that the process is a universal feature of language),[14] though it has two specific types of what we call "phrasal compounds" – e.g. (12) below.

ii) On the other hand, CAY has a limited number of monosyllabic words, which are predominantly enclitics 前倚語 marked by = (equal sign) at the beginning, as in (3), apart from one exceptional proclitic 後倚語 or procliticized, as in (15). A CAY enclitic is monosyllabic and monomorphemic. Though dependent, it is still a word by itself with some independence and is utterly distinct either from a suffix (derivational or inflectional) or a free word. The concept of a clitic, so called in descriptions of many languages of the world, is known to be a knotty problem in that the demarcation between an affix and a clitic may not be as rigid, possibly being more or less gradual (cf. Nevis 2000: 392, Dixon and

13. Shiro Hattori once proposed three basic principles for rigidly distinguishing a bound (dependent) word from a free (independent) word (Hattori 1955: esp. 470–479), while also distinguishing between a "free form" 自由形式 and a "bound form" 付属形式 – note that his 'form' is totally distinct from mine, however (§ 2.1).
14. E.g. Asher (1994: 5.2553–2554), despite Sapir (1921: 68) and § 4.3 also.

Aikhenvald 2002: 25–27, Terasaki 2004: 43). But, as stated above, this is hardly the case with CAY where the demarcation is generally clear (with a few caveats), and suffixal morphemes are never cliticized (or realized as enclitics) while enclitics never become suffixes. A CAY enclitic may be followed by one or more enclitics, still forming a single articulus (as much as four enclitics in succession attested). CAY enclitics (of which there are only about a dozen; § 54) are inflectionless, as is typically the case across languages of the world (though there are languages which have inflectable clitics – cf. Nevis 2000: 394).

iii) Other morphosyntactic units or "articuli" immediately beyond the word (either free or clitic) also seem to remain a matter of controversy. Descriptions of many languages, well-known or exotic, seem to show that the categories "word" and "phrase" may not be strictly binary, but to suggest (at least) another level of articulation – variously interpreted and named – which is intermediate in formal cohesiveness between words and phrases, each possibly with its defining features.

There are some phonological features beside the form-defining (potential) pause and insertability (§ 2.2.4) which distinguish a word from one or more higher levels of articulations. In CAY there are a number of phonological adjustments, both segmental and prosodic, which may conspire to clearly distinguish a free word from the two kinds of "bound phrase" – enclitic and non-enclitic (§ 2.3.1) – and a free word from a (free or syntactic) phrase (§ 2.2.1). A bound phrase, consisting of two (or more) words, forms a single articulus, just like a word, that has no internal (potential) pause, as amply illustrated in the phonology chapters (§ 7 through § 9).

Important references on the word in Eskimo languages would be Sadock (1980, etc.), de Reuse (1994), and Woodbury (2002) among others.

3.1. Clitic vs. non-clitic bound phrase

As stated, an enclitic is a (dependent) word by itself, though with some independence (unlike a suffix), and requires a host (free word) to attach to so as to form an "enclitic bound phrase". On the other hand, two (or more) free words, i.e. a free phrase, which can be either separated by a pause or by another word, or can be interchanged in position (permutation), may nevertheless be articulated as a single articulus, thereby forming a "non-enclitic bound phrase", with the boundness or fixedness varying (either strongly or weakly bound – § 2.3.2). This means that a word (except for a clitic) may be uttered either in isolation or articulated in phonetic dependence upon another (preceding or following) word. In actual utterances, two (or more) such free words with some syntactical rela-

tion in particular are more likely to be articulated as a non-enclitic bound phrase.

In this grammar, CAY enclitic bound phrases are indicated by the internal boundary = as in (4), (5), while non-enclitic bound phrases are indicated by the internal boundary ≠ (unequal sign) as in (6), (7), (8) only if needed for the sake of description, though in practical orthography the former is represented by the hyphen, and the latter by a space – § 3.6. A (free) phrase is usually indicated only by a space, but may be indicated by internal boundary # for the sake of comparison.

3.2. Strongly vs. weakly bound

As stated, a bound phrase is a single form or articulus (just like a word) in which two or more words are phonologically bound together with no internal pause. It is nothing but a "word-like phrase" (Sapir 1921: 145, fn. 19). Some bound phrases, however, are "strongly bound", while others are "weakly bound". Between their two extremes there may be a very wide variety, both inter- and cross-linguistically, in terms of fixity, productivity, types, and functions, and the demarcation may be more difficult to make in some languages than in others. More strongly or cohesively bound phrases may tend to become fixed over time and to become "compounds," with more or less lexicalization or grammaticalization, possibly obtaining different phonological features, while more weakly bound phrases may be closer to free or syntactic phrases, hence possibly a gradual transition between the two extremes. CAY shows no compounds (above) that are so "strongly bound", except for one type of fixed phrase (as distinct from phrasal compounds mentioned above), that is, "juxtaposed phrases" for numerals (e.g. [7]; § 14.3.3, § 16.3), which may perhaps be a relatively recent innovation.

CAY, though with no compounds per se, manifests high productivity at the word level only by means of suffixation, while some other languages may instead do so at the bound phrase level, a highly remarkable case of which may be the very productive "verbal complexes" 用言複合体 in Japanese which serve as predicates (Kono 1955, 1989, etc., Miyaoka 2002).[15]

On the other hand, especially in such languages as Chinese, with a configurational structure and a limited productivity at the word level, the locus

15. The productivity of its verbal complexes largely owe to a small number of inflectable enclitics (§ 2.3-i) or to many kinds of cliticised formal verbs which are capable of recursive transcategorial conversions. Incidentally, Japanese grammars have conflated most verbal suffixes, the inflectable enclitics, and even cliticised formal verbs into "auxiliaries verbs" 助動詞, a loan concept from Western grammars (Miyaoka 2002: 81, 102–118).

of lexical creativity tends to be at the bound phrase level, which produces new lexical units (except for borrowings) in an innovative and extensive way, which would possibly be the case with a considerable portion of so-called compounds in the language.[16]

If articulation on the content plane is, as presumed above, a single continuous process in which both the so-called morphology and syntax are intrinsically one and the same, with the main difference being a matter of a single form vs. two or more forms (articulus vs. articuli), one might be inclined to think of the possibility that the two are not autonomous.

3.3. Detached or hetero-articulations

Two or more free words may form a syntactic phrase (or a clause), leading to the issue of constituent (or word) order. Even though grammatically or semantically related words in languages tend to occur adjacent to each other, we very often come across instances in which a single phrase of two (or more) words is split by another syntactically remote word, that is to say, "de-articulated". In CAY where word order is largely free, nominal phrases (e.g. appositive; § 16.1), which are typically articulated as bound phrases, as well as relative or nominal clauses (§ 17, § 18) are easily split by another syntactically remote word, as in (13), (14), § 20(115), and even word order crossing of two nominal phrases may occur (§ 27 [115]). Splitting or de-articulation may occur also with (clitic- or non-clitic) bound phrases.[17]

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16. Chinese was a polysynthetic language for Vladimir Skalička (1909–1991) who talked of polysynthesis in reference to compounding (incl. noun incorporation; fn. 4) – 1951 *Typ polysyntheticky / Typ češtiny,* Slovanké nakladatelství, Praha (according to Chino Eiichi). Its so-called compounds, however, may perhaps be considered as more or less weakly bound phrases that are easily transferable to phrases. The more remarkable case of this may be represented by the "ionization" (so called since the 1930s) in which "compounds" (bisyllabic and most frequently verb + object nominal combinations) in the language are frequently subject to this form of disjunction or detachment, causing the two words to fill the predicate and the nominal argument slots of a clause. Cf. Chao 1968: 159–160, 426–434, etc., e.g. 地震 (earth-quake) vs. 地了 一次 震 (earth-ASP one-time quake) 'there was an earthquake one time', although the degrees of separation and insertability do possibly vary. By contrast, the Japanese 地震 [jisin] is a fixed compound and can never separate. A more striking instance than this is one provided by Chao (1968, 433), 幽默 *yōumò* 'humour(ous)', a phonetic transliteration (!), which may occur in 他 很 幽默 (he very *humor*) 'he is very humorous 'vs. 我 幽 他 一默 (I *hu-* him one-*mor*) 'I made a joke with (humored) him'.
17. Though a typologically rare feature, Cysouw (2005) offers an extensive survey of "pre-posed" enclitics in the 'wrong place', an example of which is also attested in

All these aberrant detached or hetero-articulations could hardly be understood unless the word is 'merely a form' that is not directly or strongly constrained by content (grammatical and semantic). Even though cases such as preposed enclitics may seem unstable, reversal to a functionally explainable order for them, would not be so easily predicted (if not impossible; cf. Haspelmath 1996: 55). Morphology should be seen to have its own motives largely independent of the content or the function. If the function is a controlling factor, pre-posing itself would hardly be expected to have come about in the beginning.

4. Illustrations from CAY

The different morphological units in CAY discussed above are briefly illustrated with orthographical and phonological representations (with rhythmical accent ´ [vowel lengthening], regressive accent ` [consonant gemination], and foot division | marked; § 3):

i) *Words*:

(1) a. *angyaq* /áŋ|yaq/ 'the/a boat'
boat.ABS.sg.
b. *angya-t* /áŋ|yat/ '(the) boats'
boat-ABS.pl.
c. *angyà-cuár-mi* /áŋ|yàc|cuáɣ|mi/ 'in the small boat'.
boat-small-LOC.sg.

(2) a. *angyar-pa-li-yu-kapigte-llru-unga*
/áŋ|yàx̣|palí·|yuká·|pixtɬ̓ɬ|x̣uú(·)|ŋa/
boat-AUG-make-DES-ITS-PST-IND.1sg.
'I wished very much to build a big boat'

Coast Tsimshian (Canadian Northwest Coast, southeast of Alaska) which marks the grammatical relation of a word not on its head or dependent word, but on a syntactically remote or less related word that it happens to precede (Sasama 2001). In this Tshimshianic language, the function of arguments is marked by an enclitic attached to the preceding word instead of being articulated as a part of the nominal itself or its head:

jakwa=ɬ káp=ta *qá:q=a* *hó:n* 'A raven is eating fish.'
TA 3A eat CN raven CN fish

where the preposed enclitic (known as 'connective') *=ta* is triggered by the A argument ('raven') and *=a* by the O argument ('fish') (Sasama 2001: 99, e.g. 267).

b. *angyar-pa-li-yu-kapigte-l-qa*
/áŋ|yàx̣|palí·|yuká·|pixtɬ́ɬ|qa/
boat-AUG-make-DES-ITS-VNnm/VNrl-ABS.1sg.sg.
i. 'my strong wish to build a big boat' – nominalization
ii. 'the one that I wished very much to build a big boat for' – relative clause.

ii) *Enclitics*:

(3) *=llu* 'and', *=tuq* 'I hope', *=wa* reactive – as in (4) and (5) below.

iii) *Clitic bound phrase*:

(4) *angyaq=llu* /áŋ|yaqɬu/ 'and the boat'.
boat.ABS.sg.=and

(5) *tai-li=tuq* /tái|lituq/ 'I hope he will come'.
come-OPT.3sg.=hope

iv) *Non-clitic bound phrases*:

(6) *angyaq ≠ qaa* /áŋ|yàq|qaa/ 'the boat (, is it)?'
boat.ABS.sg.≠QST
– The interrogative particle *qaa*, however, may stands as a free word, meaning 'is that right?'

The following two are not compounds, although two stems are involved:

(7) *qulà ≠ àtaúciq* /qulà|àt|taú|ciq/
ten≠one.ABS.sg.
'eleven' – juxtaposed phrase or numeral (§ 16.3),
– strongly bound but not a word, compound or a phrasal compound (below), thus **qula+atauciq* /qùl|laá|taú|ciq/.

(8) *Nuna-m ≠ Iqu-a* /nunàm|(m)ìq|qua/
land-REL.sg.≠end-ABS.3sg.sg.
'Sheldon Point (Nunam Iqua)' – place name (§ 11.6.3)
– not a compound like **Nunam+iqua* /nuná·|mìq|qua/. It is neither a phrase, thus no permutation like *Iqua Nunam or splitting like **Nunam ≠ qaa Iqua* (for 'Sheldon Point?' – by a question particle).

v) (*Free*) *phrases vs. bound phrases*: A nominal phrase (appositive, coordinate, attributive, adjunctional) except for a juxtaposed one (7) may either be a free phrase or a bound phrase, that is, a "biarticulus" or "multiarticulus") or a "monoarticulus". It is typically articulated as the latter, i.e. a bound phrase like (9b)

(9) a. *May'a-m* *arna-an* /Màỳ|yam áɣ̆|naan/
p.n.-REL.sg. woman-REL.3sg.sg.
'of May'aq's woman' – attributive phrase
b. *May'a-m* ≠ *arna-an* /Màỳ|yàm|(m)áɣ̆|naan/
p.n.-REL.sg. woman-REL.3sg.sg. – same

Compare these with (11).

A nominal phrase as such, except for a juxtaposed one (7), is amenable to permutation and insertion of another word (10):

(10) a. *arna-an* (≠) *May'a-m* '(of) May'aq's woman'
woman-REL.3sg.sg. p.n.-REL.sg.
b. *May'a-m ≠ qaa* *arna-an* 'of May'aq's woman, is it?'
p.n.-REL.sg.≠QST woman-REL.3sg.sg.
c. *arna-an ≠ qaa* *May'a-m*
woman-REL.3sg.sg.≠QST p.n.-REL.sg.

By contrast the following example (11) is segmentally identical with the preceding '(of) May'aq's woman', but is morphologically different.

vi) *Phrasal compounds*: The following two kinds of word belong here – female teknonymies (based on her/his eldest child) and locative verbs ('to be at/in [someone's] – '). No permutation or insertion is possible.

(11) *May'amarnaan* /màỳ|yamáɣ̆|naan/
p.n.ABS/REL
'a female name (lit. May'aq's mother)'
– note the difference in prosody from the bound phrase (9b). See § 4.3.6-ii and § 11.6.2 for the difference from male teknonymies.

(12) *angya-an-*(*e*)*t-uq* /áŋ|yaá(˙)|n(i̇)tuq/ 'she is in his boat'
boat-LOC.3sg.-be.at-IND.3sg.
– the locative verb is uniquely characterized by the two inflections (§ 4.3.6), which is a contraction of *-an* < *-ani* LOC.3sg.sg., *et-* 'be', *-tuq* IND.3sg. from *angya-ani et'-uq* as retained in the Cug dialect (Nunivak Island), cf. see § 4.3-v, and § 27.8.

vii) *Detached phrases*: In the following examples the appositive phrase [*yuina-a-t pingayu-n*] 'sixty' is split by the intervening *neqe-t* 'fish' (head of the phrasal numeral):

(13) *yuina-a-t* ***neqe-t*** *pingayu-n* 'sixty fish'
20-EV-ABS.pl. fish-ABS.pl. three.ABS.pl.

On the other hand, in the following example again, the appositive phrase [*unacungaq arnaq*] 'this (endeared) woman' is split by *wani*, but this is the case where an adverbial adjunct, a sentence filler (§ 53.6) in particular, very commonly lands in the so-called "Wickernagel's position":

(14) *U-na-cungaq*$_S$ ≠ ***wani*** *arnaq*$_S$ *kit-u-u-ga?*
this-EX-ATD.ABS.sg. SFL woman.ABS.sg. who-EX-be-INT.3sg.
'Who is this (endeared) woman here?' = § 12(99)

viii) *Proclitic* (*procliticized particle*): exceptional as mentioned in § 2.3-ii.

(15) ***am***=*neri* /ám=niɣi/
hurry=eat-OPT.2sg.
– truncation of particle *ampi!* (§ 53.1-i) occurs as a proclitic before the optative verb *ner-i*.

(16) *ta=pik-na* /ta=pík|na/ 'that one up above there (anaphoric)'
ANP=up-EX.ABS.sg.
– proclitic only in the Norton Sound (§ 12.2.3.6-ii), while the other CAY dialects have *ta-* as the obsolete prefix only in the two demonstratives *ta-una* and *ta-mana* 'that one'.

5. Implications of formhood

One of the most important implications of formhood of a word should be the much greater linguistic diversity itself, morphological than syntactic (and than non-linguistic or cultural), in view of indirect function as mentioned in § 2.2.3. Two others may be added:

i) *The collective "form feeling"*: It was an impressive experience for me to observe how consistently and productively Yupik speakers follow the morphological and phonological patterns of articulation (like word formation and syllable-based accentuation) unanimously while, in several summers during the 1970s and 1980s, I offered classes of Yupik practical orthography and introductory grammar at Bethel in the training program for Native bilingual teachers (generally 30 or so people). In order to explain the morphological and phono-

logical patterns of the language, I often attempted carefully to elicit the reactions of the Yupik speakers by presenting them (orally or in writing) with many constructed but correctly patterned words, which included very long and elaborate words of my own coinage that they had presumably never used or heard before, but sometimes by interspersing some intentionally misconstructed or misprounounced words or phrases. Strikingly, their reactions were perfectly unanimous, with the entire group of speakers responding either affirmatively or negatively, except for a few cases in which a dialect difference turned out later to be involved (especially in prosody if not lexical). They seemed to have been very keen on "forms", either words or syllables (two minimal forms in bilateral articulations) in striking contrast with pre-formal units, morphemes or phonemes, the analysis of which was usually found not easy for them to grasp. To me this was a tense and rigorous fieldwork in a way but taught something very real about the speakers' collective and intuitive "form-feeling" for words (Sapir 1921: passim). Incidentally, I have encountered no Yupik speaker, either in the groups or elsewhere, who wrote (11) or (12) as two separate words.

ii) *Lexigraphism fundamental to writings*: However vague it may be for a linguistic group, the collective form-feeling for words and syllables can reasonably be seen as the very basis for the two kinds of writing systems – syllabic 音節文字 and lexigraphic or logographi 表語文字 ('word-representation') – that correspond with the two minimal forms, given that they are intuitively "most salient of all the linguistic categories" (cf. Taylor 1995: 176).

It was the Americanist DuPonceau (fn. 3) again, originating the term polysynthesis, that first noted the "lexigraphic" or "logographic" nature (instead of 'ideographic' 表意) of Chinese characters (1838b: xxii-xxiv, etc. and 110), a century earlier than Y. Chao (1940).[18] We are aware that DuPonceau's understanding itself was based on the then current recognition among the missionary linguists that Chinese characters are "words" – Joshua Marshman (1814) in particular who wrote the first Protestant grammar of Chinese. Notably, however, it is again R. Kono ([1977] 1994), mentioned in § 2.1, who bequeathed to us the insight that the fundamental function of *any* kind of writing, including alphabets or syllabics, is word representation or lexigraphism 表語性.[19]

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18. Despite Chao (1940), the use of「表意」(ideographic or meaning-representation) seems to have continued in China probably until the 1990s when the term「表詞」(word-representation) began to be used (Hirofumi Hori, p.c.).
19. In this connection, it may be of interest that the running and cursive Japanese *hiragana* syllabic writing (as opposed to the square *katakana* forms and distinct from the Chinese calligraphic logography) makes full use of the characteristic of brush calligraphy in that its unbroken or successional style 連綿体 of writing has the function of representing the basic form, i.e. a word or an enclitic phrase, as a whole in one succession (Miyaoka 2002: 33).

Chapter 3
Phonological preliminaries

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1. Representations

"Phonemes", the minimal abstract units of speech realization on the expression plane, can be either vowels or consonants (in parallel with "morphemes" with regard to content). The cover symbols V and C are used for vowels (three "full vowels" V /a, i, u/ and the "fourth vowel" or schwa /ɨ/ – § 7) and consonants (§ 8). The two form the nucleus and the satellite of a syllable, respectively. Phonemes are articulated and combined into a "syllable". A syllable is the minimal "form" of articulation on the expression plane (in parallel with a word at the corresponding plane of content). See § 2.2.

Two levels of representation are distinguished on the expression plane, the "phonological" (underlying or morphonemic) and the "phonemic" (surface), which are respectively enclosed between vertical bars | | and between slashes / /. The latter is clearly characterized by surface contrast and is derived from the former by generally regular applications of phonological adjustments (P1) through (P24) in § 7, together with adjustments specific or idiosyncratic to certain morphemes. The phonological representation is used to establish "underlying" forms and to explain phonological or morphophonemic derivations. Syllables are moraic at the phonological level, for example, |*atata*| 'later' with 3 morae vs. |*ataata*| 'uncle (paternal)' with 4 morae (which are phonemically /a.tá·|ta/ vs. /àt|tá·|ta/ both with foot division (|) inside – see below for their representations).

Although phonological representations employ a few diacritics and conventions (cf. *Abbreviations and conventions*, pp. xlii–xlix) to explain adjustments specific to certain morphemes, both the phonemic and the phonological representations employ the same inventory of vowels in Table 2 and consonants in Table 3, except for the parenthesized seven consonants which are marginal, i.e. four labiovelar (labialized or 'round lips') fricatives and three voiceless nasals. They do not occur at the deepest underlying level but are the results of intermediate phonological derivations: cf. segmental adjustments (P12, 13) in § 7. For the symbols, the Americanist notation rather than IPA has been adopted.

A moraic syllable at the phonological level has the shape of (C)V(C) – i.e. V, CV, VC, CVC – a list that confirms that the language has consonant clusters only word-medially and (at most) two consonants across a word boundary. About a dozen of noun stems with initial *sC-* (C = /p, t, k, n/), which are mostly Russian loanwords (§ 3.3.5.2), constitute one exception. As the minimum articulation at the expression plane, a syllable is a prosodic unit which may be subject to "accentuation" – assignment of accents (§ 8). The term "accent," notoriously ambiguous, is employed here to refer to prominence assigned in the syllable sequence, realized as phonetic stress, tone, and length combined.

Two kinds of accent are to be distinguished in view of the accent assignment and the phonetic realization – "acute" (´) and "grave" (`) (e.g. /á, à/). The dis-

tinction of acute vs. grave, which does not represent a high vs. a low pitch as used in descriptions of tone languages, is conventionally employed here to indicate the difference in the direction of accentuation, that is, assigned progressively (rightward from word-initial) and regressively (leftward). Conditioned by the kind of syllable sequences, the accentuation basically proceeds on a "iambus" basis (weak followed by strong) within a phonological unit, three kinds of which are typically paired either with a word, an enclitic and a non-enclitic (bound) phrase – § 2.3.1.

As the phonetic realization of accentuation, a full vowel (V) may be "lengthened" and any consonant may be "geminated". In phonemic representations a lengthened vowel and a geminated consonant are indicated respectively by a postposed raised dot (such as /a·/) and by doubling the consonant (such as /kk/). A lengthened vowel can be predicted from the phonological representation (immediately below), but, as a result of post-accentual syllable contraction (§ 8.5), it may show surface contrast with a short (unlengthened) vowel, although this is lexically limited in occurrence and carries a very low functional load. Examples are provided with full phonological, phonemic (§ 3.1 through § 3.3), orthographical (§ 3.6), and phonetic representations (§ 3.2.4, § 3.3.6).

		phonological	*phonemic*	*orthographical*	*phonetic*
(1)	a.	|*uɣiẏ*[+*tuẏ*+Ø|	/uɣíχtuq/	*ugirtuq*	[uɣéχtoq]
		beach-IND-3sg.			
		'it (boat) beached'			
	b.	|*uɣiẏaẏ*[+*tuẏ*+Ø|	/uɣí·χtuq/	*ugi'irtuq*	[uɣé·χtoq]
		beach-suddenly-IND-3sg.			
		'it beached suddenly' – with (P18v) /ɣa/ deletion after accentuation (vowel lengthening).			

From the underlying representation in | | on the leftmost, the phonemic representation in / / is derived by a number of phonological rules – segmental adjustments (7), prosody (8), and postprosodic adjustments (9). Inside phonemic representation, a syllable division (§ 8-ii) may be indicated by a period (.) and foot division (§ 8-iii) by a bar (|) inside a representation if needed. Phonetic realizations are supplied on the right in the phonetic notation enclosed in brackets [ ].

The gloss beneath the morphemic analysis of the phonological representation is interlinearly given as a key with English gloss and/or *Abbreviations and conventions* (pp. xlii–xlix). This, admittedly, cannot cover the semantic or functional range of morphemes adequately enough.

In this grammar, Yupik forms are generally cited in the (revised) "practical orthography" (§ 1.4-iii), occasionally with the supplementary use of the phonological and the phonemic representations in order to adequately depict the mor-

phemic analysis (with the underlying constituents) and the phonological derivations involved. Orthographic rules are given in (§ 3.6).

Consonant gemination is not always predictable since some morphemes (stems and suffixes) have an inherent accent ("lexical accent"), resulting in gemination. It is indicated by a grave accent in the underlying representations. This kind of inherent accent is more common in personal names and loanwords than in ordinary native stock – see more in § 3.3.4.2, § 11.6.1, etc.:

(2)	a.	|*àka*|	/àkka/	*ak'a*	'already'
	b.	|*nùkaq*|	/nùkkaq/	*Nuk'aq*	'Nuk'aq' (name)
	c.	|*sàpakiq*|	/sàppakiq/	*sap'akiq*	'manufactured boot'.

2. Vowels

CAY has four vowels, as shown in Table 2 below. Three of them – /a/, /i/ [i-e], and /u/ [u-o] – are called full vowels for which the cover symbol V̲ (underlined V) is used. The fourth vowel /ɨ/ (i.e. barred /i/), which is phonetically a non-low central vowel [ɨ] (high) or [ə] (mid), called a schwa, is written with *e* in the practical orthography (§ 3.6.1). Phonotactically, any vowels occur in word-initial, -medial, and -final positions, while the schwa cannot occur word-finally at the phonemic level.

Table 2: Vowels

	front	*central*	*back*	
high	i	ɨ	u	accent: acute (´), grave (`) on V
low		a		lengthening: raised dot (·) after V

Any vowel can be accented. A full vowel can be combined with another full vowel (including an identical one; i.e. doubled) or can be lengthened (if accented). Lengthening is indicated by a raised dot (·) after the vowel. By contrast, the schwa can neither be combined with any other vowel nor be lengthened, while it frequently occurs as an epenthetic vowel (EV) to break up an unallowable consonant cluster (just below – cf. P7 in § 7.7).

The cluster restriction dictates that, on the phonemic level, no more than two vowel sequences (not including the schwa) may occur within a word (cf. § 7.3 and § 7.10). However, within a bound phrase (§ 2.3) having an internal enclitic or non-enclitic boundary, it is possible for three or four vowels to occur in succession (occasionally accompanied by intervening glottalization), since two word-initial or -final vowels may follow or precede the word-final or -initial vowel(s) of the following or preceding word (cf. see § 7.3 and § 7.4).

Various phonemic contrasts are illustrated below with minimal pairs. However, minimal pairs at the phonological level may not be exactly minimal but near-minimal at the phonemic level because of the intermediate segmental, prosodic, and postprosodic adjustments from the phonological representations (§ 3.1). Lengthening and gemination are indicated in the illustrations but accentuation is not (unless needed).

2.1. Three full vowels and schwa

Six possible contrasts of the four vowels including schwa are illustrated in minimal forms – (3) /a/ vs. /ɨ/, (4) /i/ vs. /ɨ/, (5) /u/ vs. /ɨ/, (6) /a/ vs. /u/, (7) /u/ vs. /i/, (8) /i/ vs. /a/, together with (9) three full vowel contrasts:

(3)	a.	/aki(q)/	*aki*(*q*)	‘other side, equivalent, money’
		/ɨkiq/	*ekiq*	‘wound’
	b.	/napa/	*napa*	‘tree’
		/nɨpa/	*nepa*	‘noise’
	c.	/patuk/	*patuk*	‘two lids’
		/pɨtuk/	*petuk*	‘dog leash’.
(4)	a.	/piŋuq/	*pinguq*	‘he gets something’
		/pɨŋuq/	*penguq*	‘hill’
	b.	/iquk/	*iquk*	‘end piece’
		/ɨquk/	*equk*	‘something carried on one’s shoulder’
	c.	/ila·tin/	*ilaten*	‘your (sg.) relatives’
		/ɨla·tin/	*elaten*	‘area outside your (sg.) house’.
(5)	a.	/uχnɨq/ ~ /uχn̥ɨq/	*urrneq*	‘oil rendering’
		/ɨχnɨq/ ~ /ɨχn̥ɨq/	*errneq*	‘dawning’ – see (P13ii) for optional nasal devoicing
	b.	/aki·tuka·qa/	*akitukaqa*	‘I think it is expensive’
		/aki·tɨka·qa/	*akitekaqa*	‘it is my pillow’.
(6)	a.	/aŋak/	*angak*	‘mother’s brother’
		/uŋak/	*ungak*	‘beard’
	b.	/iqa·ciquq/	*iqaciquq*	‘it will be dirty’
		/iqu·ciquq/	*iquciquq*	‘it will keel over’
	c.	/ila/	*ila*	‘part (of)’
		/ilu/	*ilu*	‘intestinal tract / interior (of)’
	d.	/mannia/	*mania*	‘she put it (on stove) /she shows it (to s.o.)’
		/manniu/	*maniu*	‘(you [sg.]) put it (on stove) / show it (to s.o.)!’

(7)	a.	/uka·ni/	*ukani*	‘coming this way / in the future’
		/ika·ni/	*ikani*	‘across there’
	b.	/unu·ku/	*unuku*	‘tonight’
		/ini·ki/	*iniki*	‘hang them (to s.t.)!’
	c.	/kalu·kaq/	*kalukaq*	‘feast, party’
		/kali·kaq/	*kalikaq*	‘paper’
	d.	/pilu·ku/	*piluku*	‘doing it’
		/pilu·ki/	*piluki*	‘doing them’.

(8)	a.	/iɣɣua/	*irua*	‘his leg’
		/aɣɣua/	*arua*	‘it rotted’
	b.	/imna/	*imna*	‘the aforementioned’
		/amna/	*amna*	‘the one over there’
	c.	/piɬɣui/	*pillrui*	‘he did them’
		/piɬɣua/	*pillrua*	‘he did it’.

(9)	a.	/ili·ŋuq/	*ilinguq*	‘he gets a partner/helper’
		/ali·ŋuq/	*alinguq*	‘he is afraid’
		/uli·ŋuq/	*ulinguq*	‘he gets a blanket’
	b.	/ata·ki/	*ataki*	‘let me see’
		/ata·ka/	*ataka*	‘my father’
		/ata·ku/	*ataku*	‘this evening’.

2.2. Single vs. double vowels

This includes only the three full vowels, as the schwa never occurs doubled.

(10)	a.	/ata/	*ata*	‘let me see’
		/aáta/	*ata*	‘father’
		cf. /àttaa/	*ataa*	‘he puts it on’
	b.	/atqa/	*atqa*	‘my name’
		/atqaa/	*atqaa*	‘it is his name’
	c.	/kitukcaɣluku/	*kitukcarluku*	‘fixing it (just doing, not so intently)’
		/kitukcaaɣluku/	*kitukcarluku*	‘slowly fixing it (very neatly, carefully, lovingly with lots of care)’ – reduced intensity by vowel doubling (§ 4.3-vi.b.3.2).

(11)	a.	/niɨɣli/	*nerli*	‘may she eat?’
		/niɨɣlii/	*nerlii*	‘may I eat?’

	b.	/pituq/[1]	*pituq*	‘he catches (game)’
		/piituq/	*piituq*	‘he has nothing’
	c.	/iɣniuq/	*irniuq*	‘she gave birth’
		/iiɣniuq/	*iirniuq*	‘he said he (himself) hid’.
(12)	a.	/uniɨq/	*uneq*	‘armpit’
		/uuniɨq/	*uuneq*	‘burn on flesh’
	b.	/yuk/	*yuk*	‘person’
		/yuuk/	*yuuk*	‘two persons’
	c .	/àlluúyaq/	*aluuyaq*	‘oval shaped bowl’
		/aáluúyaaq/	*aaluuyaaq*	‘swing’
	d.	/ɨłpɨŋú·tɨn/	*elpenguten*	‘you (sg.) are attaining an awareness/feeling’
		/ɨłpɨ̀ŋŋuutɨn/	*elpenguuten*	‘it is you (sg.)’.

dialect differences: A double vowel is contracted to a single vowel in the Hooper Bay and Chevak dialect before a consonant cluster, at least in:

	[HBC]	[elsewhere]		
(13)	/cisquq/ ~	/ciisquq/	*ci*(*i*)*squq*	‘knee’.
(14)	/unɣa/ ~	/uunɣa/	*u*(*u*)*nra*	‘burn on his flesh’
	/unɣa/	/unɣa/	*unra*	‘his armpit’

– note that in HBC the initial contrast is lost while it is retained before a single consonant /uniɨq/ ‘armpit’ vs. /uuniɨq/ ‘to burn on flesh’.

2.3. Vowel clusters

Since the schwa cannot form clusters with other vowels, only three combinations in both orders are possible: /ai/-/ia/ (15), /au/-/ua/ (16), and /iu/-/ui/ (17).

(15)	a.	/paiŋa/	*painga*	‘its mouth’
		/piat/	*piat*	‘they do it’
	b.	/aŋyai/	*angyai*	‘his boats’
		/akkia/	*akia*	‘its cost; he paid her back’.
(16)	a.	/naukan/	*naukan*	‘when it grows’
		/nua·kan/	*nuakan*	‘it is your (sg.) saliva’
	b.	/ɨɣa·tau/	*egatau*	‘(who) cooked for him?’
		/ɨɣa·tua/	*egatua*	‘she cooks it (usually)’.

1. There are also many speakers who use geminated /pittuq/ instead.

(17) a. /kiukan/ *kiukan* ‘when he answers’
/kuikan/ *kuikan* ‘it is your (sg.) river’
b. /kiuɣiu/ *kiugiu* ‘answer him!’
/iɣa·tui/ *egatui* ‘she (usually) cooks them’.

See § 3.2.4-ix for the phonetic differences between “closing” vs. “opening” clusters.

Three or four vowels in succession may only occur inside a bound phrase, whether enclitic (§ 54) or non-enclitic (§ 53). Note the foot (and syllable) division at the boundary (cf. also § 7.4), and see § 8.4.1-iv for the glottal stop in the non-enclitic bound phrase.

(18) |*tua=i*| > /tua·|i/ *tua=i* ‘there!’ (=*i* EXC; § 54)
|*cama=i*| > /cama·|i/ *cama=i* ‘hello (greeting)’
|*ii=i*| > /ii(·)|i/ *ii=i* ‘yes!’

(19) |*paiɣaa ≠ ataka*| > /pái|ɣaà(·)|(ʔ)atá·|ka/ *paigaa ≠ ataka*
‘he stayed with my father’
|*paiɣaa ≠ aataka*| > /pái|ɣaà(·)|ʔaá(·)|taka/ *paigaaàataka*
‘he stayed with my father’
– with the stem |*a*(*a*)*ta*-| (§ 4.3.4) for the second word.

Glottal stops seem to be more common within the four vowel succession (b) than with three vowel succession (a).

dialect variation with clusters and doubles: There are some (mostly noun) stems that replace a vowel cluster with a double vowel, depending upon dialects:

(20) /ciuvak/ ~ /ciivak/ *ciuvak ~ ciivak*
‘house fly’
/aitaɣ-mi/ ~ /aataɣ-mi/ [NUN] *aitarmi ~ aatarmi*
‘with his mouth open’ (root)’
/aiχaq/ ~ /aaχaq/ ~ /aaχiq/ [HBC] *airraq ~ aarraq ~ aareq*
‘string story, cat’s cradle’.

This variation also often occurs for Russian loanwords (together with single vs. double vowel fluctuations):

(21) /caini(i)k/ ~ /caani(i)/ ‘kettle’ – with initial /s/ also
/painkaq/ ~ /paanka(a)q/ ‘can’

/kaupa(a)q/ ~ /kaapa(a)q/ ‘beaded hair net of married Russian Orthodox woman’
/kalmainaq/ ~ /kalmiinaq/ ~ /kalmaanaq/ ~ [HBC] /kalmaaniq/ ‘pocket’.

dialect differences between clusters and intervocalic consonant retention – Intervocalic deletion of /v/ yields vowel clusters and double vowels in dialects other than Hooper Bay / Chevak (and Norton Sound) where the fricative is retained, as well as Siberian Yupik and Eastern Eskimo. See Fortescue et al. (1994: 90, 243, 244) for the comparative data.

		[HBC]	[NS]	
(22)	/nuuk/ ~	/nuvuk/	/nuvuk/	‘point, projection’
	/nuak/ ~	/nuvak/	/nuvak/	‘saliva’
	/ciuɣaa/ ~	/civuɣaa/	/sivuɣaa/	‘she wrings it (pliable wet item)’.

initial /yua-/ *vs*. [HBC] /iva-/ – the former is considered innovative. See again Fortescue et al. (1994: 147–148).

(23)	/yualuq/ *yualuq*	vs.	/ivaluq/	*ivaluq*	‘sinew’
	/yuaɣun/ *yuarun*		/ivaɣun/	*ivarun*	‘song’
	/yuaɣaa/ *yuaraa*		/ivaɣaa/	*ivaraa*	‘she is looking for him’.

2.4. Phonetic specifications

The phonetic realizations of phonemes are specified in contextual terms:

i) The low vowel /a/ is fronted to [æ] (with less pharyngeal tension than, say, in English *cat*) after /i/, but to the low back [a], next to back velars or in lengthened form; otherwise it is low central:

(24) /azɨ́mn̥ia/ [azɨ́mn̥iæ] *asemn̄̈ia*
‘she says he broke it (s.t. as long as a stick)’
– cf. (P13.ii) for phonological forms and derivations.

(25) /ɨlá·katáx̣tut/ [ɨlá·katáx̣tut] *elakatartut*
‘they are about to dig’ – cf. (P3).

ii) The high vowels /i/ and /u/ are front and high back respectively, but more or less lowered, i.e. [e] ~ [i̲], and [o] ~ [u̲] respectively, next to back velars and (less markedly) to lowered vowels:

(26) a. /amik/ [amik] *amik* ‘door’
/amiq/ [ameq] *amiq* ‘skin’
b. /ukuk/ [ukuk] *ukuk* ‘these(du.)’
/uquq/ [oqoq] *uquq* ‘oil’.

(27) /càlliuq/ [čàllioq] ~ [čàll i̲oq] *caliuq* ‘he is working’.

(28) /yuá·ɣun/ [yuá·ɣon] ~ [yu̲á·ɣon] *yuarun* ‘song’.

iii) The front /i/ is markedly low, i.e. [ɛ], between a back velar and /a/:

(29) /mìttɨɬχia/ [mìtt̥ɨɬχɛæ] *mit’ellria* ‘one that is landing’.

iv) The vowels /u/ and /i/ may be voiced with velar friction between /q/ (~ /k/) and another vowel in a limited variety of nouns, as below – see § 7.10 (P10i):

(30) /uyá·qua/ [uyá·qo^{x}a] *uyaqurra*
[uyá·qoa] ~ [uyáqχ^{w}a][2] *uyaqua* ‘his neck’
– with underlying |*uyaquɣ*[+*ŋa*| (neck-ABS.3sg.sg.).

(31) /átkua/ [átkṵ^{x}a] *atkugga*
[átkua] *atkua*
[átkux^{w}a] *atkuwa* ‘his parka’
– with underlying |*atɨkuɣ*[+*ŋa*| (parka-ABS.3sg.sg.).

v) The high central /ɨ/ becomes [ə] next to back velar and devoiced, i.e., [ɨ̥] or [ə̥], unless next to a voiced sound.

(32) /unɨq/ [unəq] *uneq* ‘armpit’.

(33) /cɨła/ ~ /ɨła/ [cɨ̥ła] *cella* ~
[ɨła] *ella* ‘world’
– cf. (P13iv) for the devoiced vowel.

vi) Word-initial /ɨ/ may be preceded by a glottal stop, especially when followed by a geminated stop, while it is usually not pronounced or is barely heard when followed by CV (i.e. a single consonant plus a single vowel):

2. The current practical orthography (§ 9.6) has no established way of representing the sound in the third variant.

(34) /ɨqquq/ [ʔᵩqqoq] *eq'uq* 'it is shrinking'.

(35) /ɨna/ (from |inɨ|) [$^{(i)}$na] *ena ~ na* 'house'
– cf. (P17iii) for word-final /a/.

vii) A vowel preceding a back velar may be accompanied by slight pharyngeal tension:

(36) /amiq/ [ame^{ʕ}q] *amiq* 'skin'.

viii) A single vowel and a lengthened vowel contrast phonemically in closed syllables as the result of syllable deletion, as is the case in (1a) vs. (b) which are repeated below:

(37) /uɣíχtuq/ [uɣéχtoq] *ugirtuq* 'it (boat) beached'
/uɣí·χtuq/ [uɣé·χtoq] *ugi'irtuq* 'it (boat) beached suddenly / accidentally'
– cf. (P18v) /ɣa/ deletion after accentuation.

ix) A single vowel cluster and a double vowel may be realized phonetically as a single syllable, as is also the case with a lengthened vowel.

(38) /amí·ɣaa/ [a.mé·.ɣa·] *amiraa* 'his fish-skin foot gear'
– underlying |*amiɣaɣ*[+*ŋa*| (boot-ABS.3sg.sg.)
/àmmiíɣaa/ [àm.mé·.ɣa·] *amiiraa* 'she is skinning it'
– underlying |*amiiɣ*[+*ɣaa*| (skin-IND.3sg.3sg.).

(39) /ísχatká·=łu/ [ís.χat.ká·=łu] *issratka=llu*
'also my grass bag, backpack'
/ísχatkaá=łu/ [ís.χat.ká·=łu] *issratkaa=llu*
'it is also her / his grass bag, backpack'.

However, they differ phonetically in that, while /V́·/ (/mí·/ and /ká·/ as above) and /V_1V́$_1$/ (/mií/ and /kaá/) are identical in quantity ([mé·] and [ká·]), lengthening is blocked for the second vowel of the two successive identical vowels in the latter due to the two-mora limitation (P20iii). They can, however, differ in tone, that is, the former (/V́·/) has a level tone, while the latter (/V_1V́$_1$/) has a rising (or falling) tone, especially in a prime-accented syllable (i.e. word-final accented syllable – § 8.1, § 8.3).

The (·) in a vowel cluster /V_1V_2(·)/ means that V_2 may be either short or long. It tends to be short (delengthened) in "closing" diphthongs but to remain long otherwise, i.e. "opening" (e.g. /ái/ vs. /iá·/) – cf. § 3.2.3 also.

(40) /tauna/ [táuna] *tauna* ‘that (one)’
/tuani/ [toá·ni] *tuani* ‘over there, near you’.

x) Vowels across clitic and non-clitic word boundaries, that is, vowels with an intervening word boundary whether enclitic = or non-enclitic ≠ inside a bound phrase belong to two syllables: Note the difference in vowel quality as well as the syllable division in the following pair.

(41) /calí·=am/ [ca.lí·|am] *cali=am’* ‘and also, and again’
– with /=*am*/ as truncation of /*ampi*/ ‘hurry up!’
cf. /càlliam/ [càl|liæm] *caliam* ‘of the work’ – see (P18ii.a).

xi) The hiatus may be emphasized by a glottal stop especially if a double vowel or a vowel cluster is adjacent to the boundary – cf. (P18iv.a).

(42) /qàyyaá ≠ aátama/ [qày.yaáʔaá.ta.ma] *qayaa aatama*
‘my father’s kayak’.

3. Consonants

Consonants can be characterized in terms of place of articulation (§ 3.3.1) and manner of articulation (§ 3.3.2) as well as voice (§ 3.3.3), as shown in Table 3 below, where the seven parenthesized consonants – four labiovelar fricatives and three voiceless nasals – occur only at the phonemic level but not in the phonological.

Any consonant can occur as single or double (geminated) (§ 3.3.4) except for the three voiceless nasals, which are only found single.

Gemination is represented by the grave accent (`) on the preceding vowel or by doubling the consonant.

Table 3: Consonants

		labial	*apical dental*	*alveopalatal*	*velar front*	*back*	*labiovelar front*	*back*
stop		p	t	c	k	q		
fricative	*Vl*	f	ɬ	s	x	x̣	(x^{w})	(x̣^{w})
	Vd	v	l	z	ɣ	ẏ	(ɣ^{w})	(ẏ^{w})
approximant		w		y				
nasal	*Vl*	m̥	(n̥)		(ŋ̥)			
	Vd	m	n		ŋ			

See Table 5 (§ 3.6) for the corresponding practical orthography.

Any single or double consonant can occur word-medially (except for double voiced nasals), but only a single consonant can occur word-initially (except for sC- [C = p, t, k, n – § 3.1] in loanwords; § 3.3.5.2) and word-finally.

As consonants have a greater inventory than vowels, the phonotactics have a considerable number of restrictions and will be given in § 3.3.5 after all single consonants have been surveyed contrastively.

No voiceless and voiced back labiovelar fricatives in HBC – see fn. 12.

3.1. Place-of-articulation contrasts

Different positions – labial, dental, alveopalatal, front velar, back velar, front labiovelar, and back labiovelar – are illustrated for each manner of articulation:

i) *Stops*:

initial:

(43)	a.	/paiɣuq/	*paiguq*	‘he is staying behind’
		/taiɣuq/	*taiguq*	‘he is coming’
	b.	/tuluk/	*tuluk*	‘two ivories’
		/culuk/	*culuk*	‘feather quill’
	c.	/cuyak/	*cuyak*	‘two leaves’
		/kuyak/	*kuyak*	‘lower part of seal’
	d.	/pama·ni/	*pamani*	‘back there’
		/cama·ni/	*camani*	‘down there’
		/qama·ni/	*qamani*	‘in there’.

medial:

(44)	a.	/ipɨk/	*ipek*	‘diamond (suit in playing cards)’
		/itɨk/	*itek*	‘foot measurement’
	b.	/ataka/	*ataka*	‘my father’
		/acaka/	*acaka*	‘my father’s sister’.

clusters:

(45)	a.	/iɬtan/	*eltan*	‘you (sg.) are deflating it’
		/iɬcan/	*elcan*	‘as it is deflated’
	b.	/atɬiq/	*atliq*	‘saucer’
		/acɬiq/	*acliq* [Y]	‘saucer’
	c.	/niɬqcan/	*neqcan*	‘your (sg.) bait’
		/niɬqkan/	*neqkan*	‘your (sg.) food’
	d.	/akχa/	*akra*	‘its (spear) barb’
		/atχa/	*atra*	‘his name’

e. /caliskiŋuq/ *caliskenguq* ‘he works (for someone)’
/calisqiŋuq/ *calisqenguq* ‘he is beginning to ask himself to work’.

final:

(46) a. /ukuk/ *ukuk* ‘these (du.)’
/uquq/ *uquq* ‘oil’
b. /kalikaq/ *kalikaq* ‘paper’
/qaliqaq/ *qaliqaq* ‘roof; outer covering (as on a house)’
c. /cuyak/ *cuyak* ‘leaves (du.)’
/cuyaq/ *cuyaq* ‘leaf (sg.)’
/cuyat/ *cuyat* ‘leaves (pl.)’.

ii) *Voiceless fricative* – very rare except for initial /s/ and truncated finals (§ 9.6):

clusters:

(47) a. /iqfai/ *iqvai* ‘her picked berries’
/iqsai/ *iqsai* ‘his fish hooks and lines’
b. /pixtaa/ *pegtaa* ‘he releases it’
/piχtaa/ *pertaa* ‘he bends it’
c. /patxan/ *patgan* ‘you(sg.) patted him’
/patχan/ *patran* ‘of its bone marrow’
d. /niɣiɬta/ *nerelta* ‘let us eat!’
/niɣista/ *neresta* ‘louse, eater’
e. /takɬaχtuq/ *taklartuq* ‘he is lying on his back’
/taksaχtuq/ *taksartuq* ‘it would be long’
/takχaχtuq/ *takrartuq* ‘it is a little too long’.

iii) *Voiced fricative*:

medial:

(48) a. /iilia/ *iilia* ‘he is making an eye for it’
/iiɣia/ *iiria* ‘he is hiding (s.t.) of / from her’
b. /tuvun/ *tuvun* ‘object stuck in throat’
/tulun/ *tulun* ‘your (sg.) ivory’
cf. /tuyun/ *tuyun* ‘your (sg.) mail order’
c. /aɣ^{w}na/ *au͡gna* ‘one going away’
vs. voiceless labiovelar:
/atax^{w}auɣuq/ *atawauguq* ‘it’s a blessing’
– written as *awna* vs. *atawwauguq* in HBC, cf. fn. 12.

clusters:

(49)	a.	/qulni/	*qulni*	‘area above him’
		/quzni/	*qusni*	‘his (own) cough’
	b.	/ɨɣniq/	*egneq*	‘juice’
		/ɨɣniq/	*erinq*	‘day’
	c.	/manavni/	*manavni*	‘on your (sg.) fish hooks’
		/manaɣni/	*managni*	‘his own two fish hooks’
		/manaɣ̇ni/	*manarni*	‘you (sg.) say you are hooking!’

A few voiced fricative clusters show metathesis:

(50) a. /ivɣaɣ̇luni/*ivgarluni* ~ /iɣvaɣ̇luni/ *igvarluni*
‘(he) coming into view’ – cf. Cup’ig /iɣwaɣ̇-/
b. /ivɣ̇aɣ̇luni/ *ivrarluni* ~ /iɣ̇vaɣ̇luni/ *irvarluni*
‘(he) wading’ – |*ivɣ̇*-|.

iv) *Nasal*: Voiceless nasals, which occur only medially, are exemplified in § 3.3.3-ii.

initial:

(51)	a.	/malliaƙ/	*maliak*	‘their(du.) companion’
		/nalliak/	*naliak*	‘which one of them(du.)’
	b.	/nɨm ŋɨllii/	*nem ngelii*	‘around the house’

– from phonological |*ɨni-m*| (house-REL.sg.) and |*ɨŋili-a*| (border.ABS.3sg.sg.).

medial:

(52)	a.	/una·tɨn/	*unaten*	‘your (sg.) hand’
		/uŋa·tɨn/	*ungaten*	‘your (sg.) beard’.

clusters and geminates:

(53)	a.	/imkut/	*imkut*	‘those aforementioned’
		/iŋkut/	*ingkut*	‘ones over there’
	b.	/qamŋuq/	*qamnguq*	‘he begins to give up’
		/qanŋuq/	*qannguq*	‘he begins to talk’
	c.	/atmi/	*at’mi*	‘of his own name’
		/atni/	*at’ni*	‘his own name’
	d.	/ammai/	*amai*	‘his backpacked items’
		/annai/	*anai*	‘his feces’
		/aŋŋai/	*angai*	‘his mother’s brothers’.

3.2. Manner-of-articulation contrasts

Different manners – stop, fricative, approximant (in terms of stricture – as defined by Catford 1977), and nasal – are illustrated for each place of articulation:

labial:

(54) a. /apu·ɣai/ *apurai* 'he encountered them'
/avu·ɣai/ *avurai* 'he is gathering them'
b. /apauɣluq/ *apa'urluq* 'grandfather (endearing)'
/amauɣluq/ *ama'urluq* 'poor guy carried on back'
– § 3.6.2 for the apostrophe as used in the orthography.

dental:

(55) a. /ata/ *ata* 'let me see'
/ała/ *alla* 'something different'
b. /aata/ *aata* 'father'
/aana/ *aana* 'mother'
c. /uluxtuq/ *ulugtuq* 'it is wrinkled, is being rubbed clean'
/unuxtuq/ *unugtuq* 'night fell'.

alveopalatal:

(56) a. /piksun/ *peksun* 'your (sg.) egg'
/pikyun/ *pekyun* 'Monday'
b. /picuxtuq/ *picugtuq* ~ /piccuxtuq/ *pic'ugtuq* 'he wants to catch (game)'
/piyuxtuq/ *piyugtuq* 'he wants to'.

front velar:

(57) a. /aki/ *aki* 'other side, money'
/aɣi/ *agi* '(you [sg.]) go over!'
b. /kimka/ *kemka* 'my flesh'
/kimɣa/ *kemga* 'his flesh'
c. /alikn̥ia/ *aliknia* 'he says (s.o.) is afraid of her'
/aliŋnia/ *alingnia* 'he says she is afraid'.

back velar:

(58) a. /atqa/ *atqa* 'my name'
/atχa/ *atra* 'his name'
b. /uqut/ *uqut* 'oil'(pl.)
/uɣut/ *urut* 'tundra moss'
c. /nimqa/ *nemqa* 'my bandage'
/nimɣa/ *nemra* 'his bandage'.

labiovelar:

(59) a. /piɣ^{w}lua/ *piu͡rlua* ‘his poor thing; poor dear, go ahead!’
cf. /piuɣlua/ *piurlua* ‘I keeping on’.
b. /x^{w}ani/ *wani* ‘here’ – adverbial demonstrative |*u-a-*|
cf. /wani/(~ /uɣaani/) *uani* (~ *ugaani*) ‘toward exit’ – |*uɣ-a-*|.

3.2.1. Phonological alternations

i) Morpheme-final velars, both front and back, have regular phonological (morphophonemic) alternations of /q~χ~ɣ~Ø/ and /k~x~ɣ~Ø/ as amply illustrated in (P4) final velar adjustments, (P9) final velar deletion, (P10) intervocalic velar deletion, (P11) weak velar fricative deletion, (P13) devoicing, and (P17) word-final adjustments in § 7. The following serves as just one illustration:

(60) a. /qaya*q*/ ~/qaya*x*-pak/ ~ /qayaɣ-luni/ ~ /qaya-uɣuq/
‘kayak’ ‘big kayak’ ‘(he) using a kayak’ ‘it is a kayak’
b. /qaya*x*-pa*k*/ ~ /qaya*x*-pa*x*-tun/ ~ /qaya*x*-pa*ɣ*-mi/ ~ /qaya*x*-pa-i/
‘big kayak’ ‘like a big kayak’ ‘in the big kayak’ ‘his big kayaks’.

ii) A small number of inflectional (person) and derivational suffixes show stop vs. fricative alternations in their initials – /p~f~v/, /t~c~z/, and /k~x~ɣ/: see § 7.3 (Initial Fricativization – P2i-iii).

3.2.2. Dialect variations

i) Postconsonantal or geminated /y/ tends to be replaced with /z/ particularly in the Norton Sound area and the Lower Yukon villages (notably Kotlik, Mountain Village, and Pilot Station). These are therefore often referred to as the “Zee Dialect”.

(61) /aɣyaq/ *agyaq* ~ /aɣzaq/ *agsaq* ‘star’
/aŋyaq/ *angyaq* ~ /aŋzaq/ *agsaq* ‘boat’
/qayyaa/ *qayaa* ~ /qazzaa/ *qasaa* ‘his kayak’.

ii) Conversely, /z/ is replaced with /y/ in HBC (and less often in Scammon Bay) dialect:

(62) a. /mizvik/ *misvik* ~ /miyvik/ *miyvik* ‘landing place’
/quzyuituq/ *qusyuituq* ~ /quyyuituq/ *quyuituq* | *quy’yuituq*
‘he never coughs’
/qamzuuq/ *qamsuuq* ~ /qamyuuq/ *qamyuuq*
‘you (sg.) in there!’; § 12.2.1-iii

– see also e.g. (92).

b. /cazit/ *casit* ~ /cayit/ *cayit* ‘what are you (sg.) doing?’ (INT.2sg.)
/tuzɨk/ *tuseq* ~ /tuyɨq/ *tuyeq* ‘shoulder’
/ɨziq/ *esiq* ~ /ɨyiq/ *eyiq* ‘yolk of egg’ [latter may be heard also in K.BB].

iii) Word-initial /y/ is replaced with /c/ in some words in HBC:

(63) /yaquq/ *yaquq* ~ /caquq/ *caquq* ‘wing’
/yuppik/ *Yup’ik* ~ /cuppik/ *Cup’ik* ‘Eskimo’
– [NUN] /cuppix/ *Cup’ig*
cf. /suxtuuq/ *sugtuuq* ~ /cuxtuuq/ *cugtuuq* [NI.HBC.NUN] ‘he is tall’

iv) Word-initial /c/ is replaced with /s/ in many areas:

(64) /cuɣaq/ *curaq* ~ /suɣaq/ *suraq* ‘blueberry’
/cɨtuk/ *cetuk* ~ /sɨtuk/ *setuk* ‘nail’
/cuxtuuq/ *cegtuuq* ~ /suxtuuq/ *sugtuuq* ‘he is tall’.

This is often the case with Russian loanwords:

(65) /culu·naq/ *culunaq* ~ /sulu·naq/ *sulunaq* ‘salted fish/meat’
/caaχalaq/ *caarralaq* ~ /saaχalaq/ *saarralaq* ‘sugar’
/caayuq/ *caayuq* ~ /saayuq/ *saayuq* ‘tea’.

3.3. Voiceless vs. voiced

i) *Fricatives*: The greater functional load of voice is carried by the contrast in laterals (fricatives) (66) and in velars, front (68) and back (67).

(66) a. /tałiq/ *talliq* ‘arm’
/taliq/ *taliq* ‘group dance’
b. /iluɬiquq/ *ilulliquq* ‘he feels sad’
/iluliquq/ *iluliquq* ‘he has a stomach ache’
c. /quzɬian/ *qus’llian* ‘because he might have a cold’, cf. (77a) below
/quzlian/ *quslian* ‘because he has a lot of phlegm’
d. /atɬiχtuq/ *atlirtuq* ‘she is using a saucer’
/atliχtuq/ *at’lirtuq* ‘he has many names’
e. /qamfailɣan/ *qamvvailgan* ~ /qamvailɣan/ *qamvailgan* ‘before the fire is extinguished’.

(67) a. /nutxa/ *nutga* ‘his gun’
/nutɣa/ *nut’ga* ‘shoot repeatedly!’
b. /kɨvxauɣuq/ *kev’ggauguq* ‘it is easy to lift’
/kɨvɣauɣuq/ *kevgauguq* ‘he is a helper’
c. /pimɨxni/ *pimeggni* ‘in their own thing’
/pimɨɣni/ *pimegni* ‘in their (du.) own thing’
d. /ɨxnia/ ~ /ɨxn̥ia/ *eggnia* ‘she said she threw it’
/ɨɣnia/ *egnia* ‘she said it is rendering oil (or other liquid)’– cf. (126) and (127).

(68) a. /ɨx̣nɨq/ *errneq* ‘dawning’
/ɨɣnɨq/ *erneq* ‘day’
b. /akŋix̣nax̣quq/ *akngirrnarquq* ‘it is hurting, painful’
/akŋiɣnax̣quq/ *akngirnarquq* ‘it causes one to get hurt, it can hurt’.

Contrast in /f/ vs. /v/ and /s/ vs. /z/ are rare and minimal pairs have not been available (apart from dialect variations in consonant clusters – see § 3.3.5.1, etc.):

(69) /afú·tuk/ *avvutuk* ‘they(du.) separate’
/cavú·tɨt/ *cavutet* ‘oars’

(70) /asá·li/ *assali* ‘make pancake!’
/cazit/ *casit* ‘what are you doing?’

ii) *Nasals*: Voiced / voiceless distinction is attested only by some speakers.

(71) a. /azɨmn̥ia/ *asem n̄ia*
‘he says (s.o./he himself) broke it (s.t. long) in half’
/azɨmnia/ *asemnia* ‘he says it broke in half’
b. /nɨqn̥i/ *neqni*
‘[he is eating *ner-ai* IND.3sg.3pl.] his own fish/food (plural)’
/nɨqni/ *neq’ni*
‘[he is eating *ner-aa* IND.3sg.3sg.] his own fish/food (singular)’,[3] cf. § 8(24) for different derivations
c. /ełn̥ax̣quq/ *ellnarquq* ‘it (content) must be spilled out’
/ełnax̣quq/ *ell’narquq* ‘it (air) must be squeezed out’
– this last pair seems restricted to some Yukon speakers (= *eletnarquq*).

3. The contrast is made differently by some speakers – *neqni* ‘his own food’ vs. *neq’ni* ‘his own fish, in / among the fish’.

(72) /pistiᵩma (atχit)/*pistem̄a* (*atrit*) ‘my servants ([their] names)’
/pistima (atχa)/*pistema* (*atra*) ‘my servant’s ([his] name)’
– distinction limited to some speakers.

(73) a. /nutŋama/ *nutngama* ‘of my pulse’
/nutŋama/ *nut’ngama* ‘because I got a gun / began shooting’
b. /pistiŋŋua (kina)/ *pisten̄gua* (*kina*) ‘[who] is the servant?’
/pistiŋŋua/ *pistengua* ‘I acquired a servant’.

3.3.1. Phonological alternations

Fricative and nasal devoicing are regular mostly by (P13), although there is a certain type of morpheme-specific blocking, and postprosodic fricative devoicing specific to certain morphemes occurring in the Kuskokwim and Nunivak dialects, as given in (P21).

3.3.2. Dialectal variations

A voice contrast of fricatives in clusters may occur as dialect differences in some stems and suffixes, with fricatives devoiced due to an adjacent voiceless C, which is prevalent generally in the Kuskokwim / Bristol Bay area:

The voiceless vs. voiced fricative contrast often occurs before a voiceless C (stop or fricative), which is generally voiceless in the Kuskokwim / Bristol Bay area, while voiced elsewhere – see also § 3.3.5.1. The voiceless fricative in the former area is due to postprosodic devoicing (P21):

[Kuskokwim / Bristol Bay]
(74) /pałtuuk/ *paltuuk* ~ /paltuuk/ *pal’tuuk* [other]
‘coat (zippered or buttoned)’ – Russian *pal’tó*
/ałqaq/ *alqaq* [Y also] ~ /alqaq/ *al’qaq* [HBC] ‘elder sister’.

(75) a. /kiłxu/ *kellgu* ~ /kiłɣu/ *kell’gu* [Y.HBC]
‘invite him!’ – from |*kił*ɣ+*ɣu*|; but also *kel’ggu* /kilxu/
b. /takiłχia/ *takellria* ~ /takiłɣ̇ia/ *takelria* ‘long one’
– with VNrl |-*lɣ̇iaɣ̇*-|, not necessarily dialectal, however.

(76) a. /niχkina/ *nerkina* ~ /niɣ̇kina/ *ner’kina* [Y.HBC]
‘(you [sg.]) eat (soon, in future)!’
b. /ixtuuq/ *igtuuq* ~ /iɣtuuq/ *ig’tuuq* [Y.HBC]
‘he knows how to swallow’

c. /kufciquq/ *kuvciquq* ~ /kuvciquq/ *kuv'ciquq* [Y.HBC]
'it will spill' – |*kuvɨ-*| 'to spill'.

(77) a. /qusɬian/ *qusslian* ~ /quzɬian/ *qus'llian* [other]
'because he might have a cold' – |*qusɨ-*| 'to have a cold'
b. /niχɬinniuq/ *nerrliniuq* ~ /niɣɬinniuq/ *ner'lliniuq* [other]
'I see he ate' – |*niɣɨ-*| 'to eat'
c. /kɨfxauɣuq/*kevvgauguq* ~ /kɨvxauɣuq/ *kev'ggauguq* [other]
'it is easy to lift' – |*kɨvɨ-*| 'to lift'.

All this is distinct from the voiceless vs. voiced lateral contrast after a voiceless C, as in the following pair, which represents a dialectal contrast due to the difference specific to the VV suffix ('always') – the deleting type vs. retaining type of [K.BB] |*-laẏ-*| ~ [Y] |*+laẏ-*|. See phonological rules (P8ii, P13i) in § 7.

(78) /taqɬaχtuq/ *taqlartuq* [Y] ~ /taqlaxtuq/ *taq'lartuq* [K.BB]
'he finishes' – |*taqɨ-*| 'to finish'.

3.4. Single vs. geminate

Any consonant can occur as a geminate, but only medially. See § 3.6.2 for apostrophes in practical orthography and further examples and see (93) for more examples.

(79)	a.	/una/	*una*	'this one'
		/ùnna/	*un'a*	'one down there' – |*un-na*| (down.DEM-EX.ABS.sg.)
	b.	/uɣut/	*urut*	'tundra moss'
		/ùɣɣut/	*ur'ut*	'they became watery, melted'
	c.	/kɨxan/	*keggan*	'trunk of body'
		/kɨxxan/	*kegg'an*	'you (sg.) are biting it'.

The gemination of (b) /ùɣɣut/ and (c) /kɨxxan/ are phonologically determined from the |(C)VC-| stems (P8i, P11).

There are, however, a fair number of morphemes that have underlying gemination (marked by a regressive accent or an apostrophe):

(80)	a.	|*àka*|	/àkka/	*ak'a*	'already, a long time ago'
		|*qàŋa*|	/qàŋŋa/	*qang'a*	'no!'
		|*wałù*|	/x^{w}ałłu/	*wall'u*	'or, otherwise' – probably from |*wa*| (< |*u-a-*|) and |*=lu*|
	b.	|*ɨtù-*| as in	/ɨtùɬχuuq/	*et'ullruuq*	'it was deep'.

3.4.1. Names

A majority of disyllabic CAY person names have gemination in the first syllable with pattern of /(C)VCCVC/ and in the second syllable for trisyllabic ones with the pattern of /(C)VCVCCVVC(...)/. Compare i) below with common nouns:

i) *Disyllabic stems*:

(81) /àmmaq/ *Am'aq* vs. /amaq/ *amaq* 'something carried on one's back'
/nùkkaq/ *Nuk'aq* vs. /nukaq/ *nukaq* 'second-year beaver'
/sàkkaq/ *Sak'aq*
/màyyaq/ *May'aq*

ii) *Trisyllabic stems*:

(82) /akàxxaq/ *Akagg'aq,* /ciqìɬɬaq/ *Ciqill'aq,*
/tanùkkaq/ *Tanuk'aq* /naɣùɬɬaq/ *Narull'aq*
/nuqàqqaq/ *Nuqaq'aq,* /qulìccaq/ *Qulic'aq*
/panìŋŋaq/ *Paning'aq,* /qalùttaq/ *Qalut'aq*
/paŋàɬɬaq/ *Pangall'aq* < *Pangalgalria*
'fast runner' (a former warrior's name).

3.4.2. Loanwords

Many loanwords – from Russian (83), English (84), and Inupiaq (85) – have underlying (lexical) gemination. The inherent accent may or may not reflect a kind of accent in the source language. Note the syllable patterns that are the same as (81) and (82) above (with a couple of exceptions).

(83)	a.	/kàssaq/	*kass'aq*	'white person'
		/càssaq/	*cass'aq*	'clock'
		/sùnnaq/	*sun'aq*	'ship, barge'
		/sàppakiq/	*sap'akiq*	'shoe, manufactured boot'
		/sùxxaliq/	*sugg'aliq*	'pilot bread'
	b.	/malìssaat/	*maliss'aat*	'prayers'
		/pɨlìttaaq/ [Y]	*pelit'aaq*	'stove'
		cf. /pɨlá·tuuk/	*pelatuuk*	'scarf'
		/mulùkkuuq/	*muluk'uuq*	'milk'
		/kulùkkuunaq/	*kuluk'uunaq*	'bell'
		/malàxxaayaq/	*malagg'aayaq*	'fur hat with ear-flaps'

/mulùttuuk/ *mulut'uuk* ~ /mulùttuutaq/ *mulut'uutaq* 'hammer'
cf. /mulú·tuuk/ *mulutuuk* 'they (du.) take a long time arriving, don't come early'.

(84) /siłìppùssaaq/ *selip'ussaaq* [BB] 'slipper'
/alàppaq/ *alap'aq* [BB] 'shoepac; rubber boot' (*rubber*)
/ɨzìppa(a)q/ *esip'a*(*a*)*q* ~ /ɨzɨpaaq/ *esepaaq* 'zipper'.

(85) /alàppaa/ *alap'aa* [Y.NS] 'my, how cold!' – Iñupiaq *alappa*
/alàkkaa/ *alak'aa* 'is that so?' – Iñupiaq *alakka*
cf. /alá·kaa/ *alakaa* 'he comes upon it'.

See also (21), (83) and § 3.3.5.2 for Russian loanwords.

3.4.3. Intensification

i) There are a number of intensifying suffixes – e.g. VVa |*-qapiɣc-*| 'very much' (§ 41.3.1) and VVa |*+paɣ-*| 'intensely' (§ 41.3.2) – that may replace a rhythmical accent with a regressive one, thus causing gemination on the second syllable:

(86) /pinìqqapíxtuq/ *piniq'apigtuq* 'he is very strong'
cf. ≒/piní·qapíxtuq/ *piniqapigtuq* – both from |*piniẏ-qapiɣ+tuq*|.

(87) /ucìppaxtuq/ *ucip'agtuq* 'it is loaded down, has a great load' – from |*uciẏ+paɣ+tuq*|
cf. */ucí·paxtuq/.

ii) By contrast, there is at least one suffix – VVt |*-łàɣ-*| 'suddenly' (§ 42.2-ii) as contrasted with VVa |*-łaɣ-*| 'imitatively' (§ 41.1) – that regresses a rhythmical accent to the preceding syllable, thus causing gemination on the first syllable:

(88) a. /àttułáɣluni/ *at'ullagluni* '(he) suddenly singing' – from |*atuẏ-łáɣ+luni*|
b. /atú·łàɣluni/ *atullagluni* '(he) singing imitatively' – from |*atuẏ-łaɣ+luni*|.

3.5. Phonotactics

At the phonemic level, all single and geminated consonants occur word-medially, while there are restrictions in the word-initial and -final positions.

Consonant clusters (no more than two consonants) also occur word-medially only, except for a limited class of word-initial clusters in many (Russian) loanwords with /sC-/ – see (94) below..

See § 7.3 for vowel clusters (again of no more than two vowels) that may occur in any position.

3.5.1. Word-medial

As for consonant clusters, five major classes of consonants – stops, voiced and voiceless fricatives, and voiced and voiceless nasals – occur as the second element of consonant clusters, except for a voiced fricative before a voiceless nasal, and a voiceless nasal does not occur as the first element:

Table 4: Medial consonant clusters

second C / first C	stop	voiced fricative	voiceless fricative	voiced nasal	voiceless nasal
stop	○	○	○	○	○
vd. fricative	○	○	○	○	×
vl. fricative	○	○	○	○	○
vd. nasal	○	○	○	○	○
vl. nasal	×	×	×	×	×

The two shaded portions indicate that, in the Kuskokwim and Bristol Bay dialects, the voiced vs. voiceless contrast is lost before a voiceless (stop or fricative), with the voiced fricative being replaced by the corresponding voiceless fricative:

				[K.BB]
(89)	a.	/niɣqataχtuq/ *ner'qatartuq* 'she is about to eat'	~	/niχqataχtuq/ *nerqatartuq*
	b.	/niɣciɬaaq/ *ner'cetaaq* 'poison bait'.	~	/niχciɬaaq/ *nercetaaq*
(90)	a.	/navxu/ *nav'ggu* '(you[sg.]) break it!'	~	/nafxu/ *navvgu*
	b.	/qulsuχtuq/ *qul'ssurtuq* 'it costs ten dollars'.	~	/quɬsuχtuq/ *qullsurtuq*

The following example shows that the Kuskokwim / Bristol Bay dialects lost the cluster (b) voiced+voiceless or (d) voiceless+voiced by assimilating into the (c) voiceless+voiceless:

(91)	a.	/lɣ/ *kelgun*		‘invitation’
	b.	/lx/ *kel’ggu*	/ /łx/ *kellgu* [K.BB]	‘invite him!’ (INT.2sg.3sg.)
	c.	/łx/ *allganeq*		‘tear’
	d.	/łɣ/ *all’giuq*	/ /łx/ *allgiuq* [K.BB]	‘he tore (s.t.)’ (APS.INT.3sg.)

Eighteen word-medial *stop+stop* clusters of all twenty possible (excluding geminates) are attested, except for /ct/ and /tc/.

The very limited other types of clusters involve the labialized fricatives /x^{w}, ɣ^{w}, x̣^{w}, ɣ̣^{w}/ and the approximant /y/ (but not /w/).

The four labialized fricatives are attested with a limited number of stems and suffixes, as illustrated in § 3.3.6-vii through -ix and § 3.6.1-iv.

The approximant may follow a stop, a voiced or voiceless fricative, or a voiced nasal, while it does not follow other consonants except that, around Hooper Bay-Chevak, /y/ replaces the /z/ of the other areas: see also § 3.3.2.2-i, ii.

					[HBC]		
(92)	a.	/qazɣiq/	*qasgiq*	~	/qayɣiq/	*qaygiq*	‘community house, men’s house’
		/azmuq/	*asmuq*	~	/aymuq/	*aymuq*	‘it (e.g. stick) breaks’
	b.	/iŋzuuq/	*ingsuuq*	~	/iŋyuuq/	*ingyuuq*	‘(you[sg.]) over there!

Word-medial geminated consonants contrast phonemically with single ones. Like consonant clusters, geminates are bisegmental as is made clear by the presence of a syllable boundary (indicated by a period below) within the period of articulation maintained – cf. Catford (1977: 210). Geminates, however, are phonotactically not equivalent to clusters, only the latter of which may follow a vowel cluster or a double vowel.

(93)	a.	/taquq/	[ta.qoq]	*taquq*	‘braid’ vs.
		/tàqquq/	[tàq.qoq]	*taq’uq*	‘he finishes’
	b.	/ulúɣnia/	[u.lóɣ.niæ]	*ulurnia*	‘he says he / she looked away’ vs.
		/ùllùɣnia/	[ùl.lòɣ.niæ]	*ul’urnia*	‘he says it (e.g. water) is slowly rising’.

See (79) for more pairs with or without gemination, and § 8(38) for geminated consonants as contrasted with like-consonant clusters in the Hooper Bay and Chevak dialect.

Metathesis is attested in some word-medial clusters in most of which voiced fricatives are involved. See e.g. (50).

3.5.2. Word-initial

Single consonants occur in the word-initial position that include any stops, the approximant /y/, and voiced nasals except for /ŋ/,[4] as illustrated above. Of the fricatives, only two, /s/ and /l/, occur rather frequently, but conspicuously, in loanwords.

While no consonant clusters occur word-initially in native stems, Russian loanwords admit word-initial consonant clusters of /sC-/ (C = p, t, k):

(94) /stuuluq/ 'table'
/spi(i)ckaq/ 'match'
/skuuluq/ ~ /skuulaq/ [Y.HBC] 'school'.

In some areas, however, the CAY pattern avoids the word-initial cluster by adding a schwa (e /ɨ/) either at the beginning or as an insertion within the cluster:

(95)	/ɨstuuluq/	*estuuluq*	~	/sɨtuuluq/	*setuuluq*	'table'
	/ɨspickaq/	*espicaq*	~	/sɨpickaq/	*sepickaq*	'match'
	/ɨskuuluq/	*eskuuluq*	~	/sɨkuuluq/	*sekuluq*	'school'.

The schwa added forms (with *esC-*) are reportedly felt to be older by some speakers.

word-initial /c/ : Some words have it replaced with /s/ in many areas:

(96)	/cuɣaq/	*curaq*	~	/suɣaq/	*suraq*	'blueberry'
	/cayak/	*cayak*	~	/sayak/	*sayak*	'red salmon'
	/cituk/ ~ /cɨtuk/	*cituk* / *cetuk*	~	/sɨtuk/	*setuk*	'nail'

– see (P13.iv) for /i/ > /ɨ/ between /c/ and an apical.

A majority of stems with initial /s/ are from Russsian words beginning with *s-, z-, sh*(*y*)*-, zh-, ch-, or ts-*. Some of the rest are of Eskimo origin (with *s-* or *sh-*). A few are from other native languages of the region like Aleut or are of undetermined origin. Many (or most) instances of initial /s/ – whether loan or native – are conspicuous in varying with /c/. A few typical (Russian) examples are illustrated:

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4. The initial /ŋ/ occurs in one stem /ŋiłaɣ-/ (~ NS /niłaɣ-/) 'to stretch a skin to dry' YED (265). There are a number of stems that people tend to write with an initial *ng*, but most of them actually have an underlying initial sequence /iŋɨC-/ (where C is mostly /l/). This is because the second schwa is always accented, rendering the first schwa inaudible (§ 3.2.4-vi).

(97) /sappakiq/ *sap'akiq* ~ /cappakiq/ *cap'akiq*
'shoe, manufactured boot' (Russian *sapogí*)
/sa(a)ska(a)q/ *sa*(*a*)*ska*(*a*)*q* ~ /ca(a)skaq/ *ca*(*a*)*skaq*
'cup' (Russian *cháshka*).

word-initial /l/: Stems with initial /l/ include a number of loanwords from Russian beginning with *l-*, *r-, dr-* or *n-* (and a few from English or of undetermined origin) but also ones that are apparently native in origin, including some that are onomatopoeic. Also conspicuous is that many cases of an initial /l/ – whether loanwords or native – vary with /n/. See § 3.6.2-ii for initial apostrophe (*l'*).

(98) /luuskaaq/ *'luuskaq* 'spoon' (*lózhka*)
/laaɬkaaq/ *'laavkaaq* 'store, frame building' (*lávka*)
/lavisqaq/ *'lavisqaq* ~ /navisqaq/ *navisqaq* 'attic, loft' (*navés*)
/luma·x̣aq/ *'lumarraq* ~ /numa·x̣aq/ *numarraq* 'shirt, cloth' (*rubákha*)
– Some use *'lumarraq* with a voiceless /ɬ/ as if it were *lumarraq*.

(99) /lavvuq/ *'lav'uq* ~ /ɨla·vuq/ *elavuq*
'he/it lies flat on ground (hiding)'
cf. /lavu·mauq/ *'lavumauq*
'he/it is lying (hiding)' – with /*lavɨ-*/.[5]
/laɣiq/ *'lagiq* 'goose'
/lɨvvaax̣tuq/ *'levaartuq* 'it (outboard motor) is buzzing'
– onomatopoeic.

(100) /lɨqlɨq/ *'leqleq* ~ /nɨqnɨq/ *neq'neq*
'white-fronted goose' – possibly onomatopoeic
/lə́ɣləɣaaq/ *'lerleraaq* 'Chinese'.

word-initial /x^{w}/: The word-initial /x^{w}/ found in several stems (but /w/ in some Yukon areas) is presumably derived from the demonstrative root /u-/ 'this, here':

(101) /x^{w}ani/ *wani* < |*u-a-ni*| 'here'
cf. /wa·ni/ *uani*/ ~ *u͡gaa-ni* < |*uɣ-a-ni*| 'over there, toward the exit', with no /x^{w}/ version = (102a)
/x^{w}iiŋa/ *wiinga* 'I, me'
/x^{w}aɬɬu/ *wall'u* 'or' (perhaps with a conjunctive enclitic /=lu/ 'and').

5. Most of those stems with initial /l/ tend to be written *e* with initial *l* (with an apostrophe or not) like *lav'uq*, *lagiq* and *levaartuq*. Likewise *leg'utii* ~ *legutii* for (106).

word-initial /w/: This occurs very rarely:

(102) a. /waˑni/ *uani ~ u͡gaa-ni* < |*uɣ-a-ni*| ‘over there, toward the exit’
– has no /x^{w}/ version unlike (101) /x^{w}ani/ *wani*
b. /waziɨk/ *u͡gasik* ‘tundra hare’
/wàqaáχtuq/ *u͡gaqaartuq* ‘he is retching’.

a few exceptions with initial fricatives and nasal /ŋ/: They include onomatopoeia, loanwords, and a few apparently native words. Some initial consonants are restricted to certain dialects.

(103) /vɨɣuˑtii/ *’verutii* ‘the foreign object in his eye’ – with /vɨɣ-/
/viuq/ *’viuq* ‘gray-cheeked thrush’ YED (409) – imitative.

(104) /fɨlak/ (~ /pɨlak/) *vvelak* (~ *pelak*) ‘flag’ (English or Russian *flag*).

(105) /xuun/ *gguun* ‘through here’ – with initial truncation of the adverbial demonstrative *uuggun* (PRL; |*wa-*| ‘here’, cf. § 12.3.1).

In a limited number of words, word-initial /ɨ/ shows fluctuation before some fricatives and nasal /ŋ/: ɨC$_1$(ɨ)C$_2$.

(106) /lɨɣúˑtii/ ~ /ɨlíɣɣùttii/ *‘legutii ~ elegutii* ‘his lamp’.

(107) /vɨɣun/ ~ /víɣɣun/ ~ /ɨvɣun/ ‘*verun ~ everun ~ evrun*
‘foreign object in one’s eye’.

(108) /ɣilíχtuq/ ~ /ɨɣiˑliχtuq/ ~ /íɣliχtuq/ ‘*gilertuq ~ egilertuq* ~ [Y] *eglertuq*
‘he/it is moving, traveling’

(109) /ŋíllaχtuq/ ~ /ɨŋlaχtuq/ (*e*)*ngelartuq ~ englartuq* ‘he laughs’.[6]

6. The initial /ŋ/ occurs in one stem /ŋɨłaɣ-/ in NS (for /niłaɣ-/ elsewhere) ’to stretch a skin to dry by a wooden mold or by tying onto a flat piece’. There are a number of stems that people tend to write with initial *ng*, but most of them actually have the underlying initial /ɨŋɨC-/ (where C is mostly /l/). This is because the second schwa is always accented, rendering the first schwa inaudible (§ 3.2.4-vi).

3.5.3. Word-final

Except in cases of truncation (§ 3.3.5.4), there occur in word-final position only the stops /t/, /k/, /q/, the voiceless fricative /x̣/, and the nasals /m/, /n/, /ŋ/ that are or belong to inflections, though /ŋ/ is of limited occurrence (below). Final /x̣/ (absolutive singular) occurs as a result of /ɣ̇a/ deletion (P18v), which is common with a number of nominal elaborating suffixes – e.g.: |*-cua*(*ɣ̇a*)*ɣ̇**| 'small', |*-kɨɣtaa*(*ɣ̇a*)*ɣ̇**-| 'beautiful (physical and mental)', |*-ɬɨ*(*ɣ̇a*)*ɣ̇**-| 'darn, no good, funny':

(110) /túxkax̣/ *tu'gkar* (~ /tùxkaɣ̇aq/ *tugkaraq*) 'ivory'
– note the retained accent after /ɣ̇a/ deletion.

(111) /(ɨ)nɨ̀ccuax̣/ *enecuar* (~ /ɨnɨ̀ccuáɣ̇aq/ *enecuaraq*) 'small house'
– from |*ɨni-cua*(*ɣ̇a*)*ɣ̇**[+Ø| 'house-small', with (P18v).

(112) /qimúxtɨkɨ́xtaax̣/ *qimugtekegtaar* 'beautiful dog'
– from |*qimuɣt-kɨɣtaa*(*ɣ̇a*)*ɣ̇**[+Ø| 'dog-beautiful'.

(113) /atɬɨx̣/ *atler* 'funny name'
– from |*atɣ̇-ɬɨ*(*ɣ̇a*)*ɣ̇**[+Ø| 'name-funny'.

Final /ŋ/: This occurs in HBC only at the end of doubled vowels in vocatives (§ 31.1-ii) and in the ablative-modalis suffix (§ 25):

(114) a. /aataaŋ/ *aataang* (~ /aataa/ *aata*) 'father!'
– from |*aata*| 'father',with final vowel doubled
/aatammaaŋ/ *aatamaang* 'my father!'
– from |*aata-ma*| 'of my father' (REL.1sg.sg.) – see § 31.2-ii for the relative case.
b. /mɨɣ̇mɨŋ/ *mermeng* '(with) water'

3.5.4. Final truncation

Any consonant can occur word-finally, when the following sequence is truncated in vocative forms (§ 31.3). Truncation is indicated by a final apostrophe (§ 3.6.2-v):

(115) /aat/ *aat'* 'father!' – cf. /aata/.
/icix^{w}/ *iciw'* ~ /icux/ *icug'* 'you know, remember'
– cf. /ici·x^{w}a/ *iciwa*

/kaix/	*kaig'*	'hungry!' – cf. /kaix-paa/ *kaigpaa* (with EXC; § 52.3)
/us/	*us'*	'you (sg.), here!' – vocative /uzuuq/ *usuuq* of |*u*-| 'this' (DEM)
/aɣnauc/	*Arnauc'*	'little woman' (person name) – from *arnaucuaq*.

Personal names are very often truncated in vocatives:

(116)	/apac/	*Apac'*	'Apacaaq!'
	/ayap/	*Ayap'*	'Ayaprun!'
	/caiŋ/	*Caing'*	'Caingilnguq!'
	/kay/	*Kay'*	'Kayungiar!'
	/miis/	*Miis'*	'Miisaq!'

When a voiced fricative comes at the word-final position because of truncation, it is devoiced.

(117)	/aŋaɬ/	*Angal'*	'Angalgaq!' – cf. vocative /aŋalɣaaq/ with final vowel doubled
	/aŋif/	*Angiv'*	'Angivran!'
	/aɣnaχ/	*Arnar'*	'Arnariaq!'
	/cikix/	*Cikig'*	'Cikigaq!'
	/panix/	*Panig'*	'Paniguaq!'

However, /ɣ̇/ becomes the corresponding stop /q/:

(118) /anuq/ *Anuq'* ~ /anu·ɣ̇aɬ/ *Anurall'* 'Anuralria!' < /anuɣalɣ̇ia/.

The phonemic status of the consonants is illustrated below with minimal (or near-minimal) pairs that contrast in terms of position, manner, and voice:

3.6. Phonetic specifications

i) *Stops*: They are lenis with an unaspirated quality. There is no voicing contrast among the stops. Thus the /p/ of *pin* 'your (sg.) thing' is more like the *p* of English *spin* than that of *pin*.

The velar stops (front) /k/ and (back) /q/ (and their corresponding fricatives for that matter) are functionally distinct:

(119) /áŋyak/ *angyak* ‘two boats’ vs.
/áŋyaq/ *angyaq* ‘boat’.

Affricate /c/ is [č] but [c] (= [t͡s]) before /ɨ/:

(120) /ciun/ *ciun* [čiun] ‘ear’ vs.
/cɨtuk/ *cetuk* [cɨ̣tuk] ‘fingernail’.

ii) *Glottal stop*: This may occur optionally as mentioned above – e.g. (19), (42) within non-enclitic phrases and (34) word-initially.

iii) *Fricatives*: They have voicing contrast, though rather rare. The labial /v/ and /f/ are like English (as *vast* and *fast*):

(121) a. /qamvailɣan/ *qamvailgan* ‘before the fire goes out’ vs.
/qamfailɣan/ *qamvvailgan* ‘before it is extinguished’
b. /cavú·tɨt/ *cavutet* [čavú·tɨ̣t] ‘oars’ vs.
/afú·tuk/ *avvutuk* [afú·tuk] ‘they (du.) separate’
c. /aqvici/ *aq’vici* [àqfici] ‘run!’
/aqfaciki/ *aqvaciki* [àqfací·ki] ‘fetch them!’

iv) *Lateral* /l/: Though classified as a fricative, this is an approximant as it has no turbulence. The tongue blade is more evenly elevated than English *l* (pronounced with a “sagging” tongue). The corresponding voiceless /ɬ/ is a fricative with some turbulent flow:

(122) a. /taliq/ *taliq* [taleq] ‘group dance’ vs.
/taɬiq/ *talliq* [taɬeq] ‘arm’
b. /càlliuq/ *caliuq* [čàllioq] ‘he is working’ vs.
/càɬɬiuq/ *calliuq* [čàɬɬioq] ‘he may be doing something’.

(123) /nɨ́qlinɣáɣmɨk/ *neq’linrarmek* [nə́qlinɣáɣmɨk]
‘part or product of fish’ vs.
/nɨ́qɬinχáɣmɨk/ *neqlinrrarmek* [nə́qɬinχáɣmɨk]
‘from fish cut up just now’.

v) *Fricatives* /z/ and /s/: They may be contextually subject to slight labialization:

(124) /pizit/ *pisit* [pizit] ‘you (sg.) do?’ (INT.2sg.) vs.
/ciísiq/ *ciissiq* [čiíseq] ‘insect’.

(125) /íŋzuuq/ *ingsuuq* [íŋz^{w}ɔɔq] ‘you, over there!’
/tɬíŋsuun/ *tengssuun* [tɬíŋs^{w}uun] ‘airplane’.

vi) *Front velar* /ɣ/ and *back velar* /ɣ̇/: They are voiced fricatives with respectively corresponding voiceless /x/ and /x̣/ as illustrated:

(126) /íɣniq/ *egneq* [íɣnəq] ‘juice’ vs.
/íɣ̇niq/ *erneq* [əɣ̇nəq] ‘day’ – cf. (68).

(127) a. /íxn̥iq/ *eggneq* [íxn̥əq] vs.
/íxniq/ *egg’neq*[7] [íxnəq] ‘throwing away’
b. /íx̣n̥iq/ *errneq* [əx̣n̥əq] vs.
/íx̣niq/ *err’neq* [əx̣nəq] ‘dawning’.

After the voiceless velars as in (127), speakers may have the nasal voiceless or voiced, a distinction that could be represented by the use of an apostrophe in the orthography. The device is, however, usually not employed.

vii) The *front labiovelar fricative* /ɣ^{w}/ and its corresponding /x^{w}/ are /ɣ/ and /x/ with lip rounding:

(128) a. /áɣ^{w}na/ *au͡gna ~ augna* [áɣ^{w}na] ‘one over there’ – cf. (P12) vs.
/áx^{w}kut/ *au͡gkut ~ augkut* [áx^{w}kut] ‘ones over there’
b. /qáɣ^{w}yaq/ *qau͡gyaq* [qáɣ^{w}yaq] ‘sand’.

The ligature may not be used by many writers.

viii) The *back labiovelar fricatives* /ɣ̇^{w}/ and /x̣^{w}/ are marginal sounds. The former is specific to the attitudinal NNh suffix |-*ɣ̇uɣ̇luɣ̇*-| (§ 43.1):

(129) /píɣ̇^{w}lua/ *piu͡rua* [péɣ̇^{w}lɔa]
‘his poor thing; you (sg.) poor dear, go ahead!’

See the following for the voiceless counterpart.

ix) The *voiceless labiovelar* /x̣^{w}/, represented by ligatured *u͡r* after a stop, is a marginal phoneme like the preceding voiced /ɣ̇^{w}/. It occurs in derivatives with VN |-*quɣ̇*-| ‘(body or plant) part’ (§ 19.2) inflected for the third-person singular possessor:

7. This orthographical distinction is possible to make, but the second variant is usually written without the apostrophe.

(130) /uyáqx̣^{w}a/ *uyaqu͡rra* [uyáqx̣^{w}a] ‘his neck’ = (158)
– as a very rare variant of:
/uyá·qux̣a/ *uyaqurra* [uyá·qɔ^{x}a] ~ /uyá·qua/ *uyaqua* [uyá·qɔa]
– the latter of which may sound childish to some speakers.

The corresponding front labiovelar /x^{w}/ is attested in an optional pronunciation by some speakers of the word *atku-a* (parka-ABS.3sg.sg.) from the stem |*atkuɣ̇*-|, again with the third-person singular possessor:

(131) /átkuxa/ *atkugga* [átku^{x}a] ~ /átkua/ *atkua* [átkua] ‘his parka’.[8]

xi) Besides the four labiovelar fricatives, there are other *labialized consonants* that occur, though very marginal but still used like (b) by some [according to SS, SK], as a result of vowel cluster (/au/, /iu/) contraction by (P18viii). Note the minimal pair of (a) /ɬ/ vs. (b) /ɬ^{w}/, the latter of which, being a variant of (c), has no established orthography:

(132) a. /nałúx̣|łùx|tua/ *nallurrlugtua* ‘I don’t know much’ vs.
b. /nał^{w}úx̣|łùx|tua/ ‘I am sort of ill’
c. /naú|łuúx̣|łùx|tua/ *naulluurrlugtua* ‘I am sort of ill’ – with the bar (|) indicating foot division.

xii) The *semivowels* /w/ and /y/ are momentary consonants that correspond with approximants at the tongue positions of /u/ and /i/:

(133) /awá·ni/ *avani* [awá·ni] ‘over there’ – (P16).

(134) /qayá·ni/ *qayani* [qayá·ni] ‘in the kayaks’.

xiii) The *nasals* have voicing contrast: /m/, /n/, and /ŋ/ are voiced, while /m̥/, /n̥/, and /ŋ̥/ are their voiceless counterparts. Unpredictably voiceless nasals are represented by the bar on top like *m̄, n̄,* and *n̄g̅* in the practical orthography:

(135) /azɨ́mnia/ *asemnia* [azɨ́mniæ] ‘he says it cracked in half’ vs.
/azɨ́mn̥ia/ *asemn̄ia* [azɨ́mn̥iæ] ‘he says (he) cracked it in half’.

(136) /piá·ni/ *piani* [piǽ·ni] ‘up there’ vs.
/pia·n̥aku/ *pian̄aku* [piǽ·n̥aku] ‘having it back there’.

8. Note also a front labiovelar stop, which very marginally occurs at least in the person name /aki^{w}kaq/ (written by some people as *Akiuk’aq*) ~ /aki^{w}k/ Akiuk’ < *Akiugalria*.

(137)	/pakma/	*pak'ma*	[pákma]	'pile of things heavily loaded (on boat, sled)' vs.
	/pakm̥a/	*pakma*	[pákm̥a]	'up there!'
(138)	/qupnɨq/	*qup'neq*	[qúpnəq]	'splitting' (nominalization) vs.
	/qupn̥ɨq/	*qupneq*	[qúpn̥əq]	'crack' (deverbal noun of result).

xiv) Nasal neutralization (say in English *bank* [bæŋk]) does not occur in CAY (more like Russian *bánk* 'bank' with dental [n]):

(139) /áŋyanka/ *angyanka* [áŋyanka] 'my boats'.

4. Phonological units

As stated concerning bound phrases (§ 2.3.1), a phonological unit as an articulus at the expression plane (as contrasted with content plane) is characterized by flanking pauses and constitutes a domain for phonological processes (§ 7 through § 9). Three kinds of units serve to fortify three different morphological units – 1) words, 2) enclitic bound-word phrases, and 3) non-enclitic bound phrases. A word behaves differently from an enclitic phrase, which in turn behaves differently from a non-enclitic (which includes two or more words). An enclitic phrase is internally marked by the equal (=), that is, the left boundary of an enclitic is marked by the equal sign. A non-enclitic phrase is internally marked by a non-equal sign (≠), while the external boundaries (with pauses) of either articuli may be indicated by a space or the number sign (#). Distinct from a suffix boundary (- or +) inside a word, each of these (=, ≠, and #) is called a "major boundary" as below.

It is a very common phenomenon in actual speech that two or more adjacent words, which can be uttered as separate articuli to form a (free) phrase, are uttered together with no intervening silence to form a non-enclitic bound phrase such as the following.

Enclitic phrases are first illustrated:

(140) /ała·=xuq/ *alla=gguq* 'they say (it is) different'
different.ABS.sg.=RPR
– with the lengthened vowel as compared with (142) *alla ≠ yuk*.

(141) /nuná·ka=łú·=xuq/ *nunaka=llu=gguq* 'also my land, they say'.
|*nuna-ka=lu=ɣuẏ*|
land-ABS.1sg.sg.=and=RPR

Two (or more) words that are syntactically connected, such as an appositive phrase (§ 16.1) and an attributive phrase (a possessor with the possessed noun – § 16.4) tend to form a non-enclitic bound phrase.

(142) /ałà(y)≠yuk/[9] *alla ≠ yuk* 'a (very) different person'
'different.ABS.sg. ≠ person.ABS.sg.
cf. /ała yuk/ *alla yuk*.

(143) /nuná·kà(t)≠tàmá·na/ *nunaka ≠ tamana*
|*nuna-ka ≠ tama-na*|
land-ABS.1sg.sg.≠that-EX.ABS.sg.
'that (extended) land of mine'
cf. /nuná·ka tamá·na/ *nunaka tamana*
– compare also with:
/nuná·kàt≠tamá·kut/ *nunakat ≠ tamakut*
|*nuna-ka-t ≠ tama-ku-t*|
land-FUT-ABS.pl.≠that-EX-ABS.pl.
'those future (extended) lands'

Note the non-enclitic pre-boundary gemination (P18iv.a) on /y/ and /t/ above (albeit feeble in general), while it does not occur on /x/ or /ɬ/ next to the enclitic boundary in (140) and (141).

No gemination in the following but still the pre-boundary regressive accent on /yam/:

(144) /áŋyàm≠qaa ìlluá·ni/ *angyam ≠ qaa iluani* 'inside the boat?'
|*aŋyaɣ+m qaa ilu-a-ni*|
boat-REL.sg. QST interior-LOC.3sg.sg.
– note that the rhetorical question particle *qaa* splits the attributive phrase.

Compare with the following two:

(145) a. /áŋyàm≠(m)ìlluá·ni/ *angyam ≠ iluani* 'inside the boat'
|*aŋyaɣ-m ≠ ilu-ŋani*|
boat-REL.sg.≠interior-LOC.3sg.
b. /áŋyàmtua/ *angyamtua* 'I am in the boat' (locative verb; § 27.8)
|*aŋyaɣ+m-*(*i*)*t-ua*| – with regressive accent (P18ii.a)
boat-REL.sg.-be.at-IND.1sg.

9. Note in passing the word *allayuk* /ała·yuk/ 'a very strange thing', which is commonly pronounced by children as /ałàyyuk/ (to be written *allay'uk*), possibly yielding a homophony with the non-enclitic bound phrase as pronounced with marked gemination in certain areas.

There is at least one morpheme that occurs like a proclitic in a bound phrase (marked by = at the right boundary):

(146) a. /ám=nɨɣi/ *am=ner-i!* ‘(you [sg.] hurry up and) eat!’
hurry.up=eat-OPT.2sg. =
b. /nɨɣí·=am/ *ner-i=am*
eat-OPT.2sg.=hurry.up’ .

The |*am*| is a truncated form of the particle |*ampi*| or |*amci*| (§ 54.1-iii)

(147) /ámpì(n)≠nɨɣi/ *Ampi ≠ neri!* ~ /ámcì(n)≠nɨɣi/ *Amci ≠ neri!*
– the pre-boundary accent may show up as /ámpí·≠neri/.

5. Prosody

As stated in § 3.1, an accent or a phonetic realization of a prosodic pattern, combining stress (loudness), pitch (tone and intonation), and duration (tempo), adds prominence to a syllable (although its allocation may well vary as it is a function of expressive, pragmatic, and other factors): § 8 for details. An accented vowel carries greater prominence than an unaccented one.

Accent is generally predictable, but in some marginal (lexically determined) cases it shows a surface contrast, as in the following (with | foot division), which is the result of (P18v) syllable contraction:

(148) a. /ii|ŋixtuq/ *iingirtuq* ‘he is snow-blind’ vs.
/ii|ŋíx|tuq/ *iingi’rtuq* ‘he suddenly lost an eye / he got hit in the eye’
b. /alíŋ|qɨxtuq/ *alingqertuq* ‘it has a sleeve’ vs.
/alíŋ|qɨ́x|tuq/ *alingqe’rtuq* ‘he suddenly got scared’
c. /aŋíx|tuxtuq/ *angerturtuq* ‘he is chewing gum’ vs.
/aŋíx|túx|tuq/ *angertu’rtuq* ‘he keeps saying yes’ – cf. (169).

As far as a neutral utterance of an articulus (as in citation) is concerned, the prime-accented syllable therein tends to carry the “greatest prominence”. The pitch is lowest at the end of the first accented syllable, before rising steadily toward the end. It falls most markedly at the end of the last accented syllable (boldface) of a whole articulus. The end of an articulus may also be signaled by a slowing tempo.

Compare the following three kinds of articuli – (a) single word, (b) enclitic bound phrase (=), and (c) non-enclitic bound phrase (≠):

(149) a. /qayáx̣|pàɣ|mini/ *qayar**pag**mini* ‘in his own big kayak’ – cf. 8(17)
b. /qayáx̣|paɣmí·|=mi/ *qayarpag**mi**=mi* ‘how about in the big kayak?’
c. /qayáx̣|pàɣ|minì|≠uí|taɬí·|nilú·|ni/ *qayarpagmi**ni*** ≠ *uitalliniluni*
‘(I found) he is in his (own) big boat’.

Note the difference in the last accented syllable of the following pair (both single words):

(150) /áŋ|yàx̣|palí·|yùɣ|ŋayúɣ|nàx̣|qua/ *angyarpaliyugngayug**nar**qua*
‘I seem able to make a big boat’
/áŋ|yàx̣|palí·|yùɣ|ŋayúɣ|nax̣quq/ *angyarpaliyugnga**yug**narquq*
‘he seems able to make a big boat’ cf. § 8(15).

In the following, two phonological units (both non-clitic bound phrases) occur in a stretch with a pause (#) in between:

(151) /imú·|mì(q)|≠qáz|ɣìŋ|qɨtúɬ|x̣atni qáz|ɣimì|≠uí|taú|ɣatúɬ|x̣uú|ŋa/
imumi ≠ *qasgingqe**tull**ratni* # *qasgimi* ≠ *uitaura**tull**ruunga*
‘in the old days when they had men’s houses, I used to stay in one (men’s house)’.

The degree of the pitch fall is assumedly correlated with the syntactic constituency of the words involved and pragmatic factors.

A difference in intonation contour may indicate whether the speaker has more to say (continuations, additions, supplements, or afterthoughts) and may characterize different phonological phrasings, that is, phonological articulations (often according to affective values and illocutionary factors). See Woodbury (1987b: 185, 189) for intonational complexities with numerous modifications of canonical contour and for sophisticated and insightful treatments of CAY tonology in general. There remains much work to be done on CAY prosody especially concerning the complex interaction among duration, stress, pitch, intonation, and pausing, which yield different phonological articulations largely triggered by expressive and pragmatic factors.

6. Practical orthography

The orthography employed in the following is a (new) practical orthography (§ 1.4-iii). As stated, its older version was basically completed by 1969 after intensive research on the phonology of the language at the Department of Linguistics of the University of Alaska Fairbanks, and was used until around 1972, especially in productions at the newly established Eskimo Language Workshop,

when it was revised into the new version. The old version is still used by those who learned it at the first period, native and non-native, with resultant confusion still encountered among the users (see fn. 10).

The research at the initial stage was accompanied by some discussion about such a basic problem as what kind of writing systems to adopt, eventually settling upon the Roman alphabet (instead of Cyrillic and syllabic ones as Canadian Inuits) as it is (the most) familiar to the native people concerned.

Adopted for the bilingual education program inaugurated in 1970, the practical orthography has since been used not only in native writings of various sorts but also for pedagogical, religious, and official / public materials in the area, enjoying an increasing acceptance from the Yupik people of the area, as literacy in it has spread with reading materials in different genres steadily proliferating (cf. *Sources,* pp. 1600–1601), though this is most true among the generations that went to school after 1970. The Alaska government has had a Yup'ik language assistance for public service (e.g. elections) since 2008.

Due to the differences in the English and CAY phonological systems, the uses of the alphabet are necessarily different to some extent, and attempts were made to be consistent as much as possible.

The orthography is fundamentally based on the level in which the prosody/accentuation rule (§ 8; P18) is to apply. As such it does not indicate vowel lengthening and consonant gemination of the predictable type. It is a systematic or phonological writing system rather than phonemic, but as a practical orthography it admits some compromise with a few inconsistencies. Certainly it has advantages over the earlier systems devised by the missionaries – Russian Orthodox, Roman Catholic, and Moravian (§ 1.4-i).

The use of some letters differs from that of the symbols for academic (phonological or phonemic) representations, hence the rules provided in § 3.6.1.

The vowel and consonant letters (with digraphs) employed in the new version of the practical orthography[10] are given below in parallel with Table 2 (§ 3.2) and Table 3 (§ 3.3):

10. As stated in § 1.4-iii the original "practical orthography" established in the late 1960s was revised into the new orthography around 1973. See e.g. KPLT (1973 vs. 1972). The resultant confusion unfortunately still prevails among the users, native or non-native. The most common types of confusion with the old and of difficulty with new system concern 1) use of *e* next to a voiced fricative, e.g. **arenaq* for *arnaq* /ɣn/ 'woman', 2) writing of voicelss fricatives e.g. **nerelruuq* for *nerellruuq* /ɬχ/ 'he ate', **tangerrtuq* for *tangertuq* /χt/ 'he saw', 3) use of apostrophe, e.g. **ner'luni* for *nerluni* /ɣl/ 'he eating', 4) single vs. double vowel in relation with consonant doubling, e.g. **ataata* for *atata* /atáˑta/ 'later', **attaata* for *ataata* /àttaá(ˑ)ta/ '(paternal) uncle'. This last difficulty may perhaps suggest that the orthography based on the systematic or phonological level may be somewhat too deep. See also § 3.6.4 with fn. 14 and 15 about word-initial *e*.

Table 5: Practical orthography

vowels	high	i		e		u				§ 3.2.1, § 3.6.1-vii
	low			a						
consonants	stops	p		t		c	k	q		§ 3.3.1-i
	voiceless fricatives	vv		ll		ss	gg	rr	w͡	urr͡ § 3.6.1.-iii,iv
	voiced frivatives	v		l		s	g	r	ug͡	ur͡ § 3.3.1-iii, § 3.6.1-i, iv
	(voiceless next to a voiceless consonant)									§ 3.3.1-ii; § 3.6.1-ii
	approximants	w		y						§ 3.6.1-iv
	voiceless nasals	m̄		n̄		ng̅				§ 3.6.1.-v
	voiced nasals	m		n		ng				§ 3.6.1-iv,
	(voiceless after stop consonant)									§ 3.6.1-vi

There are (apparent) inconsistencies that are involved in *v* as compared with *w*, though not in the HBC dialect – see § 3.6.1-iv.

The punctuation chiefly follows the general English system of the present day. Capital letters at the beginning of a sentence and proper names, question marks, exclamation marks, and periods/full stops are in general use. The apostrophe and the hyphen are assigned various functions (§ 3.6) and can be an additional source of confusion at times.[11]

In the orthographical rules below, there are a few cases in which alternative methods of writing (§ 3.6.4) are possible, that do not lead to misinterpretations as long as consistency is maintained, but there are also some cases for which unorthodox uses are not recommended.

6.1. Use of alphabets

Differences between phonemic representations and orthographical writings are illustrated below. Voiceless fricatives and nasals are represented contextually in two different ways ii) ~ iii) and v) ~ vi).

i) The orthographically single fricatives *v, l, s, g,* and *r* represent voiced /v/, /l/, /z/, /ɣ/, /ɣ̇/, but only between voiced sounds – cf. ii) below:

(152)	*avek*	/avɨk/	‘half’
	ivsuk	/ivzuk/	‘drizzle’
	casit	/cazit/	‘what are you (sg.) doing?’
	agi	/aɣi/	‘(you [sg.]) go over!’
	taliq [Y]	/taliq/	‘group dance’

11. Commas, exclamations, double quotations are now very much employed in native writings, but colons, semicolons, and dashes are still very rarely (if ever).

cf.	*talliq*	/tałiq/	‘arm’ – see iii) below
	curaq	/cuɣaq/	‘blueberry’
cf.	*carraq*	/caχaq/	‘a little bit’.

ii) The single fricatives *v, l, s, g,* and *r* represent voiceless /f/, /ɬ/, /s/, /x/, and /χ̣/ next to a stop, after a double fricative, or next to a word boundary (i.e., at the beginning or end of a word) – cf. i) above:

(153)	*nutegyugtut*	/nutɬɣyuxtut/	‘they want to shoot’
	qemaggvik	/qɨmáxfik/	‘bag, tote (packing variety of hunting items, tools, etc.)’
	kuicuar	/kuícuaχ̣/	‘small river, rivulet’
	arvinlegen	/áɣvìnlɨɣɨn/ ~ *arvinelgen* /áɣviníłɣɨn/	‘six’
	nerellruuq	/nɨɣɬɨχ̣uuq/	‘he ate (something)’
cf.	*ner’llinia*	/nɨɣɬɨnnia/	‘(so I see) he has eaten it’ – see § 3.6.2-ii for the apostrophe.

iii) The orthographically double fricatives, i.e., *vv, ll, ss, gg,* and *rr,* are voiceless (cf. the English *easy* [z] vs. *essay* [s]):

(154)	*avvutuk*	/afú·tuk/	‘they(du.) got divorced’
	tussilluni	/tusí·łuni/	‘he limping’
	amarru	/amá·χ̣u/	‘you (sg.) backpack it!’
	ayaggluku	/ayáxłuku/	‘shoving it away’ – voiceless /ɬ/ because of the preceding double fricative *gg*.

iv) Orthographic *w* represents /x^{w}/, but only in specific words, while *v* represents both /v/ and /w/, though this is not the case with HBC:[12]

(155)	*w*	/x^{w}/	*wani* ‘here’, *wiinga* ‘I, me’; *atawauguq* ‘it’s a blessing’, *akwaugaq* ‘yesterday’, *iciwa* ‘you know’, *nauwa* ‘where’, and the enclitic *=wa* as in *aanaka=wa* /áanaká·x^{w}a/ (~ *aanaka≠wa* /áanakà(x)x^{w}a/) ‘well, my mother’ (a response), etc.

12. Cup’ik has no back labiovelar fricatives (like GCAY /χ̣^{w}/) fricatives, so its writing system (Woodbury 1997) uses *w* for the voiced approximant /w/ and *ww* for its voiceless counterpart, yielding a more systematic pattern, hence *wani*, *pawani* vs. *atawwauguq*, and no need for back labiovelar (like GCAY *urr ur*). For HBC, where the voiced /z/ in the other dialects is replaced by /y/ (§ 3.3.2.2-ii), it is to be noted that the voiceless /s/ is intact, hence the use of *s* and *ss* as in *aqsiunga* ‘I am full’ and *issran* ‘woven basket’.

v /w/ *cavik, cavi-a* ‘(his) metal’, *calivik* ‘place to work’, *pavani* ‘back there’ (cf. *paugna*), etc. – note the *v* between too single full vowels

/v/ *avek, avg-a* ‘(its) half’, *cav-un* ‘oar’, *cav-luni* ‘rowing’ (stem |*cavi-*| ‘to row’), *kaviaq* ‘fox’, etc.

All this lack of consistency may certainly be taken as a shortcoming of the practical orthography, although the sounds concerned occur in a very limited number of morphemes:

Ligatured *ug* represents /ɣ^{w}/ and non-word-initial /x^{w}/ as well as word-initial /w/ (which is very sporadic):

(156) *augkut ~ awkut* /áx^{w}kut/ ‘those ones over there’
augna /áɣ^{w}na/ ‘that one over there, going away’
augani ~ avani /awá·ni/ ‘over there’
cf. *augani* /auɣani/ ‘in his blood’
taugaam /tàɣ^{w}ɣ^{w}aam/ ‘but’
aug’arru /àɣ^{w}ɣ^{w}aχu/ ‘(you [sg.]) remove it!’
ugasqinarquq [K] /wásqináχquq/ ‘it is slippery’
~ *qurrasqi*(*t*)*narquq* [HBC] /quχásqi(t)náχquq/.

Ligatured *ur* represents a back labiovelar /ɣ̇^{w}/, which is a marginal phoneme specific to the attitudinal suffix NN (‘poor, sorry’) only:

(157) *piurlua* /píɣ̇^{w}lua/ ‘his poor belonging; you (sg.) poor dear, go ahead!’
cf. *piurlua* /piúɣ̇lua/ ‘I keeping on’.

Ligatured *ur* after a stop represents the voiceless back labiovelar /χ̇^{w}/, which is marginal like the voiced /ɣ̇^{w}/:

(158) *uyaqura* /uyáqχ̇^{w}a/ (rare) ~ *uyaqurra* /uyá·quχ̇^{w}a/ ~ *uyaqua* /uyá·qua/ ‘his neck’; cf. (130). – the last may sound a baby talk.

v) Barred nasals *m̄, n̄,* and *ng̅* are voiceless /m̥/, /n̥/, and /ŋ̊/:

(159) *maan̄ani* (rare) /maán̥ani/ ‘he being here’ – |*maanc-*| ‘to be here’; for *maanlluni*
cf. *manani* /maná·ni/ ‘his own fishing lure’
asemn̄ia /azímn̥ia/ ‘he said (someone / he himself) broke it’
cf. *asemnia* /azímnia/ ‘he said it broke’.

vi) Nasals in the orthography are also voiceless after a stop and optionally so after a double fricative, while otherwise voiced:

(160)		*ukna*	/úkn̥a/	‘that one coming’
		errneq	/íx̥n̥iq/ ~ /íx̥niq/	‘dawn’
	cf.	*erneq*	/íɣniq/	‘day’ – cf. § 18.3.1.

vii) Orthographic *e* and *ng* correspond to phonemic /ɨ/ and /ŋ/ respectively:

(161)	*tengmiaq*	/tɨ́ŋmiaq/	‘goose, bird’.

6.2. Use of apostrophes

The orthography employs an apostrophe in the following five cases:

i) to indicate, in the environment of C_V, the gemination of (phonemically) unpredictable types by placing it after the consonant – cf. (P1), (P18vi), etc. See (P1, P18vii) and § 3.3.4, etc. for more examples:

(162)		*ak’a*	/àkka/	‘already’
		mill’uni	/mìɬɬuni/	‘it (bird, airplane) landing’
		may’uqertuq	/màyyuqɨ́x̥tuq/	‘he is going up suddenly’
	cf.	*mayuqertuq*	/mayú·qɨx̥tuq/	‘he is going up a while, went up quickly’.

Frequently in personal names and loanwords: more examples in § 3.3.4.1 and § 3.3.4.2

(163)	*May’aq*	/màyyaq/	
	Narull’aq	/naɣùɬɬaq/.	

(164)	a.	*kass’aq*	/kàssaq/	‘white person, priest’
		sap’akiq	/sàppakiq/	‘manufactured boot’
	b.	*malagg’aayaq*	/malàxxaáyaq/	‘fur hat’
		pelit’aaq [Y]	/pɨlìtaáq/	‘stove’

– would represent */maláxaáyaq/ and */pɨlí·taáq/, if without the apostrophe.

ii) to show, in the environment of C_C, #_, or _#, that a fricative or a nasal is *not devoiced* in spite of its environment, i.e. next to a voiceless or a word boundary:

(165)	a.	*at'lirtuq*	/átliχtuq/	'he has many names'
		atlirtuq	/átɬiχtuq/	'he is using a saucer'
	b.	*kuv'ciquq* [Y]	/kúvciquq/	'it will spill'
		kuvciquq [K]	/kúfciquq/	'it will spill'.

Clusters of a voiced nasal preceded by a voiceless are rare:

(166)	a.	*neq'ni*	/nɬqni/	'his own fish/food'
		neqni	/nɬqn̥i/	'in the fish'
	b.	*angyall'ni*	/aŋyałni/	'his former boat'.

(167)	*'lagiq*	/laɣiq/	'goose'
	'lerleraaq	/liɣliɣɣaaq/	'Chinese'
	'verun	/vɨɣun/	'foreign object in an eye'.

iii) to indicate deviation from the general accentuation pattern in the environments of V_V and V_C concerning (P18v) postprosodic syllable contraction in§ 8, as well as in the phonologically idiosyncratic suffixes NNh |-*ẏuẏluẏ*-| (§ 20.3), CNNth |-$_1$*ŋẏaẏ*-| (§ 50.5), and in some loanwords:

(168)	a.	*ugi'irtuq*	/uɣíˑχtuq/	'it (boat) beached suddenly' = § 8(75b)
		ugirtuq	/uɣíχtuq/	'it (boat) beaches' (1a)
	b.	*qulngunrita'ar*	/qúlŋùnɣitaˑχ/	'nine' = § 8 (77)

(169)	a.	*angertu'rtuq*	/aŋíχtúχtuq/	'he keeps saying yes' = § 8(73)
		angerturtuq	/aŋíχtuχtuq/	'he is chewing gum'
	b.	*angya'rpak*	/áŋyáχpak/	'big boat' (emphasis on bigness)
		angyarpak	/áŋyaχpak/	'big boat'.

(170)	a.	*ama'urluq*	/amaúɣluq/	'poor guy carried on back'
		amaurluq	/àmmaúɣluq/	'great grandmother'
		aamaurluq	/aámáɣ^{w}luq/	'(poor) breast'
	b.	*angya'urluq*	/áŋyáɣ^{w}luq/	'(poor) boat'
		qaya'urluq	/qayáˑuɣluq/	'(poor) kayak' = § 20(217)
	c.	*enekeurlu'rqa*	/nɨkkɨɣ^{w}luχqa/	'(poor me,) it is my house';
ini-ẏuẏluẏ-ki[+*ɣaqa*	, cf. § 46.1-iv for /ɣa/ deletion.

(171) *tangenge'rmegteggu*[13] /taŋíŋŋɨɣmíxtɨxu/ 'even if they see him'.

(172) a. *kela'askaq* [Y.BB] /kɨlá·skaq/ 'paint'
navi'iskaaq /naví·skaaq/ 'attic, loft'
pula'avkaaq /pulá·fkaaq/ ~ *kula'avkaaq* /kulá·fkaaq/ 'safety pin' (cf. Russian *bulávka*)
b. *qaku'urtaq* /qakú·χtaq/ 'hawk owl, goshawk'.

iv) to distinguish the consonant sequence /nɣ/ (*n'g*) from the velar nasal /ŋ/ (*ng*). Compare the pairs:

(173) a. *un'gani* /únɣani/ 'down there, down river, toward the exit'
ungani /uŋá·ni/ 'his (own) beard'
b. *tan'gercetuq* /tánɣáχcɨtuq/ 'it is dark'
tangercetuq /taŋíχcɨtuq/ 'he lets himself be seen'
tan'gerpak /tánɣɨχpak/ 'crowberry'
tangerpak [Y] /taŋíχpak/ 'big seal blubber'
c. *min'guuq* /minɣuuq/ 'it is the wake (something moving through water)'
minguun /mìŋŋuun/ 'paint, color, ointment'.

Compare /nx/ (*n'gg*) and /ŋɣ/ (*ng'g*) also:

(174) a. *can'ggaq* /canxaq/ 'small grass'
min'ggaq /minxaq/ 'small wake'
b. *peng'gartuq* /piŋɣaχtuq/ 'he is worried'
– No cluster /ŋx/ is attested but, if it were to arise, it would have to be written as *ng'gg*.

v) to indicate *word-final truncation* (§ 3.3.5.4):

(175) *am'* /am/ 'hurry up!' – for *ampi*[*i*]
May' /may/ 'Mayaq!' – for *May'aq* /màyyaq/
call' /cał/ 'more, next' – for *cali* /*cali*/

A final voiceless fricative for truncated words is written either as a single or double letter by the people:

(176) *qail*(*l*)*'* /qaiɬ/ 'how?' – for *qaillun* /qáiɬun/
us(*s*)*'* /us/ 'you (sg.), here!'

13. The accents (with gemination) on the second and fourth syllables (*e*) are predictable, respectively, by syncopation blocking (§ 8.2.3.1-i) and (P18ii.b), hence no apostrophe, unlike the third one specific to CNNth marker.

– vocative form of |*u-*| ‘this’ (DEM) – for /ùzzuuq/ *usuuq*

Angal(*l*)*’* /aŋaɬ/ ‘Angalgaaq!’ – /aŋálɣaaq/ (with final vowel doubled; § 9.7, § 31.1, § 31.3)

icug(*g*)*’* /icux/ ‘you know, remember’

~ iciw’ /icix^{w}/ (cf. *iciwa* /ici·x^{w}a/)

kaig(*g*)*’* /kaix/ ‘how hungry?’ – for /kaíxpaa/ *kaigpaa*.

(177) *Tua=i=ll’* *ca-u-cii-nak*(*u*) *elliin* *ta-u-m*
and what-be-not.know-APP.3sg. 3sg.REL that-EX-REL.sg.
arna-m.
woman-REL.sg.
‘And that woman didn’t know what it was.’
– tua=i=ll’ < tua=i=llu, *cauciinak’ < cauciinaku*.

6.3. Use of hyphens

A hyphen is employed in the following two cases, but the equal sign = is used in this grammar, in which a hyphen marks morpheme boundaries.

i) to mark an enclitic (§ 54):

	orthography / *this grammar*	*phonemic*	*gloss*
(178) a.	*aana-mi* / *aana=mi*	/aá(·)na=mi/	Mo.ABS.sg.=ENC
	‘how about mother?’		
	cf. *aanami* / *aana-mi* (homonymous)		Mo-REL.3Rsg.sg.
	‘of his own mother’		
b.	*tuntu-tuq* / *tuntu=tuq*	/túntu=tuq/	caribou.ABS.sg.=ENC
	‘hopefully a caribou’		
	cf. *tuntutuq* / *tuntu-t-uq* (homonymous)		caribou-catch-IND.3sg.
	‘he catches a caribou’		
c.	*una-llu-gguq* / *u-na=llu=gguq*	/uná·=łu=xuq/	this-EX.ABS.sg.=ENC=ENC
	‘this one also, they say’.		

A hyphen (but equal sign in this grammar) is also used in (179) interjective demonstrative particles (cf. § 12.3.2.2) and (180) lexicalized particles (though analyzable):

(179) a. *ama-i* / *am-a=i* /amá·=i/ there-EX=INJ
‘over there’

	cf. *amai* / *ama-i*		/àmmai/	backpack-ABS.3sg.pl.
		‘his backpacks’		
	b. *ala-i* / *ala=i*		/alá˙=i/	EXC
		‘oh, my!’		
	cf. *ilai* / *ila-i*		/ìllai/	part-ABS.3sg.pl.
		‘his relatives’.		
(180)	a. *tua-i* / *tua=i*		/tuá˙=i/	(particle)
		‘then, there’		
	b. *ta-ima* / *ta=ima*		/ta=í˙ma/	(particle)
		‘there (not in sight)’		
	cf. *tauna* / *tau-na*		/táuna/	that-EX.ABS.sg.
		‘that one’		
	b. *aa-ang* / *aa=ang*		/áa=aŋ/	(particle)
		‘yes’		
	ii-i / *ii=i*		/íi=i/	(particle)
		‘yes’		
	c. *maa-irpak* / *maa=irpak*		/máa=irpak/	(particle)
		‘nowadays’.		

In the practical orthography the question marker |*qaa*| is generally written with a hyphen, as it has commonly been considered an enclitic. It in fact behaves like an enclitic in being dependently attached to its head word at the beginning of a sentence. Prosodically speaking, however, it is more of a non-enclitic particle than an enclitic. Its prosody or accentuation pattern does not show an enclitic bound phrase but a non-enclitic bound phrase and can occur independently by itself (‘is it so/right?’) – cf. § 43 and § 53.3. In this grammar the unequal sign (≠), instead of the equal sign, is employed to indicate the dependently used particle:

(181)	*Aana-qaa* / *Aana≠qaa*	/aánà(q) ≠ qaa/	‘(is it, do you mean) mother?’
	cf. *aana-mi* / *aana=mi*	/aána=mi/	‘how about mother?’ = (178) above

– Note the regressive accent with gemination on /q/ by (P18iv.a – but not P18ii) before ≠*qaa* but its absence before =*mi* in the compared.

ii) to distinguish a non-native stem. There are a considerable number of words incorporated into (and established as part of) Yupik lexical stock from Russian and some neighboring native languages such as Inupiaq, Aleut, and the Athabaskan languages. English has also contributed loanwords, but far fewer than Russian.

Although bilingual Yupik speakers are beginning to mix their speech with an increasing number of English words, most of them have not been incorporated as Yupik stems but clearly remain and are perceived as non-native elements. Such un-incorporated non-native words, whether nouns or verbs, have to be separated by the linker |+(V~VV)ẏ-| (LNK – § 52.5.2) from its following native suffix, derivational or inflectional, and a hyphen has to be inserted between the non-native stem and the linker.

(182) a.	*líbràry-q*	~	*library-mi*	'library' (ABS.sg. ~ LOC.sg.)
	nícknàme -aq	~	*nícknàme -ami*	'nickname' (ABS.sg. ~ LOC.sg.)
	éngland-áaq	~	*éngland -aámi*	'England' (ABS.sg. ~ LOC.sg.)
b.	*busy-rtuq* /bizíχtuq/			'he is busy' (IND.3sg.).

6.4. Different manners of writing

CAY writing is not necessarily uniform in its use. Yupik speakers often write in ways somewhat different from the basic orthographical rules, with regard to a few specific types and words. The variations pose no problem as long as consistency is maintained and confusion does not arise. Major cases of variation that have been observed are mentioned here.

A word-initial *e* is, more often than not, dropped in writing as the vowel is rarely if ever uttered when it is followed by a single (non-geminated) consonant. Most common stems are illustrated:

(183) a.	*emeq ~ meq*	/(i)mɬq/	'water'
	emelleq ~ mell'eq	/(i)mɬɬɨq/	'drinking'
	emera ~ mer'a	/(i)mɨẏẏa/	'drink!', cf.§ 8.2.3.1-ii
b.	*ena ~ na*	/(i)na/	'house'
	eneka ~ nek'a	/(i)nɬkka/	'my house'
	cf. *enii*	/ɨnnii/	'his house'
c.	*engelartuq ~ ngel'artuq*	/(i)ŋɬllaχtuq/	'he is laughing'.

As mentioned in § 3.2.4-vi, word-initial shwa /ɨ/ is hardly audible when followed by CV (a single consonant plus a single vowel), so that many people are inclined to write it without the *e*.[14]

(184) a.	*elituq*	/(i)li·tuq/	'he is learning'
	elisgu	/(i)lisẏu/	'(you [sg.]) learn it!'

14. To write the above as (a) *meqa* 'my water', (b) *neka* 'my house' and *nii* 'her/his house', and (c) *ngelartuq* is not recommended because they do not reflect the gemination and lack consistency.

b.	*elagaa*	/$^{(i)}$la·ɣaa/	‘he is digging it’
	elii	/ɨllii/	‘(you [sg.]) dig it!’[15]
c.	*elliraat*	/$^{(i)}$ɬi·ɣaat/	‘orphans’.

A word-initial voiced /l/ is written with or without the apostrophe, which causes no confusion as no words begin with a voiceless /ɬ/:

(185) *‘lagiq ~ lagiq* /laɣiq/ ‘goose’.

A few specific words vary in actual writing, which is largely a matter of preference if not due to differences in actual pronunciation:

(186) *ta-ima ~ tayima* / *ta=ima* /taí·ma/ ‘somewhere (else)’
– *taima* is reasonably unrecommendable (cf. *taiguq* /táiɣuq/ ‘he has come’).

(187) *tua-i-llu ~ tua-i-ll’* / *tua=i=llu* /tua·i=ɬ(u)/ ‘(and) then’
tua-llu ~ tuallu / *tuall*(*u*) /tua·ɬ(u)/ ‘ready!, what’s up?’

See Miyaoka and Mather (1979) for more details on the orthography and examples.

15. Oft-used spelling such as (a) *lituq* and (b) *lagaa*, which cannot reflect the lengthened vowel, and (a) *liituq* and *lisgu* and (b) *laagaa* and *lii*, which lack consistency, are not recommended either, as this would result in inconsistencies (*lii* does not reflect the gemination either). We are aware that this is one of the difficulties people have in learning the practical orthography. To write a single (or a double) vowel as in *elituq* and *elisgu* (/ɨlic-/) is confusing, as is the case with the double vowel of *niituq* ‘he is listening’ and *niisgu* ‘(you [sg.]) listen to it!’ (/niic-/).

Chapter 4
Morphological preliminaries

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This chapter is twofold in that it is meant to cover both basic morphological matters (including basic morphophonology, with minimum illustrations but full references to later chapters) and some topics at length (with full illustrations) that will not be treated in later chapters.

1. General characteristics

Words, as the minimal content "forms", are articulated upon or constructed of the morphemes (§ 2.2.1), and the way they are constructed is the main concern of morphology – in contrast with syntax which deals with larger units constructed of two or more words. Bound phrases (§ 2.3) belong to the interface between morphology and syntax, thereby leaving their demarcation more ambiguous.

As a polysynthetic language (§ 2.1-i), CAY achieves through its morphology what many other languages do through syntactic operations on phrases and clauses. Grammatical relations (e.g. case, person), verbal categories (e.g. tense-aspect, modality, negation), valency modifications, (clausal) "transcategorial" operations (nominalization and verbalization) as well as many semantic modifications (nominal and verbal) are taken care of by suffixes – derivational as well as inflectional. CAY's causative verbs, for instance, are only morphological and never "analytical" (Comrie 1985b: 331–332) – see § 34.5 and § 39.1. The language has no causative verb stem meaning 'to cause, make'. Hence the remarkable importance of CAY's "internal syntax" (Swadesh 1939), which has a greater functional load than with many other languages and much overlapping between morphology and syntax.

As such, CAY has a remarkably productive morphology, which constitutes the most complex part of its grammar. It has a strong tendency to elaborately pack a large amount of content (grammatical and semantic) into a single word – mostly a verb but also a nominal – as the minimal form of articulation (i.e. "articulus"; § 2.1) at the content level.

CAY may chiefly be characterized, in view of its morphology, as a language that is:

i) almost exclusively suffixal in terms of the morphological process of word construction; § 4.1.1 (predominant suffixation)

ii) highly agglutinative in view of its mechanical cohesiveness and one-to-one correspondence; § 4.1.2 (agglutination)

iii) polysynthetic in terms of its dynamic or "non-templatic" morphological productivity, which by necessity involves a rich internal syntax that packs rich content into a single word; § 4.1.3 (non-templatic polysynthesis)

iv) notable for morphological ergativity, albeit with splits; § 4.1.4.1

v) notable for double-marking; § 4.1.4.2

Other minor characteristics will be mentioned in relevant chapters.

1.1. Predominant suffixation

CAY is endowed with a great quantity and variety of highly productive suffixes that provide supple means for the complex inflection and derivation of both verbs and nominals other than non-inflecting words (§ 52 through § 54).

A CAY inflecting word – verb or nominal – is made up of a single stem that can optionally be followed by a potentially long series of derivational suffixes (or "postbases" called by some Eskimo linguists), which are in turn obligatorily followed by final inflection (or "ending" by some), as schematized:

(1) STEM^{1} + DERIVATIONAL SUFFIX$^{0\sim}$ + INFLECTIONAL SUFFIX$^{1\text{-}3}$
(i.e. INFLECTION^{1})

where the superscript ^{1} for the word-initial stem implies a single stem, namely, that there is no stem compounding (below) nor prefixation (with the caveat in § 4.3-i), the $^{0\sim}$ for derivational suffixes means a zero or (theoretically) an indefinitely large number of them, that is, they are optional, and the $^{1\text{-}3}$ for inflectional suffixes consist of one, two, or three (depending upon the kinds of words; superscript for inflection). These are frequently fused and are called an inflection, being generally given as a single unit without analysis in representations. While derivational suffixes are optional, a stem and an inflection (with superscript ^{1}) are obligatory.

A stem, followed by derivational suffixes (§ 4.2.5), is called an "expanded stem".

Even though the following example has suffixes which are concrete in content, it is a single and completed word, i.e. a (derived or denominal) verb as a minimum form or articulus:

(2) *qayar-pa-ngqer-tuq* 'he has a big kayak'
kayak-big-have-IND.3sg.

which consists of one stem *qayar-* and one inflection *-tuq*, with two derivational suffixes *-pa-ngqer-* intervening. The *qayar-pa-* as well as *qayar-pa-ngqer-* are expanded stems. But deprived of the stem and/or the inflection, the remaining portion can never be a word, so that there cannot be any such "forms" in CAY as **pa-ngqer-tuq* (devoid of a stem) and **qayar-pa-ngqer* (devoid of an inflection).

More complex examples are shown by the following (a) nominal (nominalization; § 18) and (b) verb (complex verb; § 40):

(3) a. *qayar-pa-li-**yara**-qa*
kayak-big-make-VNnm-ABS.1sg.sg.
'the way I make a big kayak'

b. *qayar-pa-li-qa-a-**sqe**-ssaaqe-llru-aqa.*
kayak-big-make-POL-EV-A'.ask-but-PST-IND.1sg.3sg.
'I asked him to make a big kayak (but actually he has not made it yet)'
– both of which will be shown with more detailed analysis respectively in (1) and (10).

Derivation and inflection cover a wide range of grammatical and semantic/pragmatic functions. In CAY the distinction between inflection and derivation is clear-cut (though with very slight blurring) – the final *-qa* in (a) and *-aqa* in (b) are inflections.

Inflection, as an obligatory constituent for inflecting words, is paradigmatic, while the derivation of optional constituents is syntagmatic. The inflection completes a word morphologically, i.e. as a minimal form or articulus. The derivation that optionally occurs between a stem and an inflection is both lexical and grammatical, though the demarcation is not so clear. This takes the place of many syntactic, i.e. word-external, operations made in other languages, including relative clauses and nominalizations (§ 17 and § 18), etc.

i) *Morphological homogenity:* Most of the important grammatical strategies in CAY (or any Eskimo language for that matter) rely very much upon the morphological process of suffixation to the almost complete exclusion of other processes, a remarkable contrast with many languages in the world that use two or more mixtures of morphological processes side by side. Other processes than suffixation are very much limited, only including, to a very small extent, reduplication, suppletion, and a few other anomalies, some of which may be arguable (§ 4.3).

Stem compounding (either N+V, V+N, N+N, or V+V) is entirely alien to the language, apart from a few kinds of "phrasal compounds" (§ 4.3-v) which are single words. As a corollary, the language is completely free of incorporation as a morphological process (as a kind of N+V or V+N type compounding) of the Sapir-Mithun tradition (§ 2.1-i), which is an important process in many so-called polysynthetic languages (including Ainu and Chukchi-Koryak languages in northeastern Asia and numerous Native American languages). Suffixation is thus fully or resourcefully exploited by the language, producing incomparably intricate words rich in functional diversity.

ii) *Pure and simple suffixes*: Many derivational suffixes appear to be lexical with a concreteness of content that would characterize stems or roots in many other languages. They are highly productive in creating new lexical items.

However, CAY suffixes are clearly distinct from the so-called "lexical" or "nominal" suffixes of the controversial "Mosan" languages (Sapir 1929) – Salish, Wakashan, and Chimakuan – in the Northwest Coast, which are commonly counted as polysynthetic. They too may express content such as 'he is hunting

rabbits' in a single word with the same constituent order of stem-derivation-inflection. But the fundamental difference between GCAY and those languages may be illustrated with a regular process of forming words schematically, to follow Matthews (1997: 173), along the lines of:

GCAY:	rabbit-hunt-IND.3sg.	vs.
Mosan:	hunt-rabbit-PRG.3sg.	

with the nominal element 'rabbit' (underlined) is the stem in GCAY but is the derivational suffix in Mosan where it is literally a "nominal suffix". The verb 'to hunt' is a derivational suffix in the former, but is a stem in the latter. Despite the difference, the words in either languages are far from a fixed or ready-made unit established prior to a speaker and stored as a single concept (§ 2.2).

While most derivational suffixes are highly lexical or concrete in terms of content, some of the stem-elaborating suffixes (§ 4.2.5.1) may merely add an "associative" elaboration or slight modification on the content of the stem, and what is added may not be clearly differentiated and thus hard to conceptualize. Rather than distinctly modifying or subcategorizing what is denoted by the stem, those suffixes may have a general, diffuse or elusive meaning or may be just an expression of a speaker's some psychological or mental attitude toward it or an emotional reaction – cf. Mithun (1998).

iii) CAY suffixes, either derivational or inflectional, are pure and simple (or canonical) suffixes in the sense that they are etymologically unrelated to any stems in the language with which they may seem logically connected and that none of them are all grammaticalizations of free (independent) or bound words.[1] The language has no explicit evidence either of enclitics having come from free words or of suffixes from enclitics. None of the person suffixes for nominals (marking possessors), for instance, are either enclitics or reduced forms of (synchronic) free pronouns, as is also the case with verbal persons (for subject and object), though, historically, some of Eskimo inflectional suffixes seem to have

1. However, there may be cases of disagreement among Eskimologists. While some suggest a rapproachment of, for example, the stem |*atuɣ*-| 'something useful; to use, wear, sing' with the NV suffix |+*tuɣ*-| 'to eat, wear', others seem not to connect (e.g. Mithun 2009: 13 vs. Fortescue et al. 1994: 53, 429). See (15) and (91). Very intriguing it seems, others may not be prepared to commit themselves to either, given our substantial lack of knowledge about Eskimo(-Aleut) historical morphology (e.g. basic root/stem construction) and the relatively simple syllable structure of (C)V(C) with relatively small inventories of vowels and consonants.
An uncontestable exception would be the suffix NV |-*klaaɣ*-| 'clock' (in referring to hours) which is borrowed from the English *clock* as a suffix, but not as a stem (illustrated in § 11.3.6).

cognates in Aleut as Bergsland has argued (1951, etc.). That is, CAY is a language for which suffixes, clitics, and free-standing words are clearly distinct (even though free words may very often be articulated as part of bound phrases; § 2.3).

There are a fair number of suffixes, however, which are composed of two or more suffixes to be more or less fixed markers for grammatical categories – see 4.1.3.1-ii for "composite suffixes".

iv) Although the predominant morphological process is suffixation, there a few morphological anomalies (prefixation, root increment, suppletion, reduplication, and phrasal compounds) specific to certain morphemes (§ 4.3-i through v) as well as "symbolistic" (Sapir 1921: 133–134, etc.) processes which have grammatical significance, i.e. prosodic (disturbances of the regular pattern; consonant gemination, vowel doubling) and phonemic (phonetic symbolism by vowel height). Woodbury (1981b) supplies a fair amount of information of symbolic processes from the Chevak dialect (HBC).

1.2. Agglutination

CAY is an agglutinative language in that:

i) Morphemes within a word have a mechanical cohesiveness, with more or less transparent or clear-cut boundaries (segmentability) – as in (4a) below. To a very limited extent, however, segmental adjustments at morpheme boundaries may have blurred morpheme division due to a certain amount of fusion (§ 7). This is more often the case within inflections (consisting of not more than three word-final morphemes – out of case, number, person, and mood), thus no morpheme-for-morpheme division generally given in interlinear glosses for inflections. Different degrees of cohesiveness may be shown by example (4), starting from a) clear-cut segmentability to b) partial fusion (between possessor and possessum numbers) and c) complete fusion (of three morphemes):

(4)	a.	*angya-**ge-m-ni***	du.-1sg.-LOC	'in my two boats' – |*aŋyaɣ̇-*| 'boat'
	b.	*angya-**a-ni***	3sg.sg.-LOC	'in his boat'
		*angya-**m-ni***	1sg.sg./pl.-LOC	'in my boat/boats'
	c.	*angya-**a***	ABS.3sg.sg.	'his boat'.

ii) There exists a high degree of one-to-one correspondence between expression and content since morphemes are generally isomorphic or monofunctional

(with a few exceptions) – as plural marker |+*t*-| (with no variants) in both nominals and verbs.[2]

Suppletive variants, both in derivational and inflectional suffixes, constitute just a handful of exceptions (§ 4.3-iii).

iii) Except for a very limited amount of peculiarity specific to certain suffixes as well as some inflectional fusion, the CAY phonology or the segmental adjustments as given in § 7 is fairly regular, even though deeply layered (ordered) in many instances.

1.3. Non-templatic polysynthesis

As stated, CAY, like other Eskimo languages, has a remarkably high degree of synthesis owing to the availability, and recursive occurrence, of a great number of highly productive derivational suffixes (including transcategorial ones). These occur in sequence with semantic compatibility, with possible different suffix orderings as a reflection of different scopes. The flow of a word is thus characterized by a 'method of pruning afterthoughts' (Sapir 1921: 135, fn. 10). The remarkably high degree of polysynthesis, as will be amply illustrated (§ 4.2.5.3 and § 4.2.5.4), is obviously attained by the "non-templatic" nature of its derivational suffixation (Mithun 1999: 43).

In this respect, CAY polysynthesis is remarkably contrasted with many other polysyntetic languages of the North Pacific Rim. The language, for instance, flatly precludes a slot-and-filler template analysis as first employed by Sapir and Hoijer (1967) for Athabaskan verbs, in which a good number of rigid pre-root slots (or morphological "positions") and a few post-root ones are paradigmatically filled. In contrast, CAY suffixation is semantically conditioned in general, with a suffix having its immediately preceding morpheme (or sequence) as its scope, and it is semantic compatibility rather than "position" class that is the guiding structural principle, with the result that different suffix orders are possible. Even in Eskimo languages, however, it is necessary to

2. This is in stark contrast to plurality in some Northwest Coast languages south of Alaskan Yupik, for instance, in Sliammon (Salish), where it is covered morphologically by three different suffixes, ablaut, and two types of reduplication, while the other nine types of reduplication are employed for other grammatical functions (such as aspect and forming diminutives) (Watanabe 2003). In Coast Tshimshian (Tsimshianic), it is usually characterized by reduplication, prefixation (two prefixes), suppletion, suffixation (three suffixes), their combinations (prefix + reduplication, reduplication + suffix, prefix + suffix, and suppletion + reduplication), and, sporadically, by unchanged plurals and a few other unclassifiable processes (Sasama 2001).

acknowledge the tendency toward some extent of templatic ordering among certain verb-elaborating derivational suffixes (VV; § 4.2.5.1), most notably, in suffix compositions (§ 4.1.3.1-ii) which are "semi-lexicalized" (Fortescue 1980, and its discussions in Woodbury 1981: 318–331 for the Chevak dialect of CAY), and in derivational vs. inflectional ordering in itself. See § 4.2.5.2 and § 4.2.5.3.

CAY does not have noun incorporation either (as stated; § 2.1-i), which is an important morphological device for many polysynthetic languages in the North Pacific Rim, such as Chukchi-Koryak (T. Kurebito 2001a, M. Kurebito 2001). Furthermore, CAY not only lacks the "nominal suffixes" as noted just above in Mosan languages, but also such "instrumental" or "locational" affixes (prefixes) widely employed in North American languages, though these are often taken as one necessary characteristic of polysynthesis (Mattissen 2003, writing on Nivkh in Sakhalin). CAY instrumental or locational suffixes are of a totally different kind.

In § 4.2.5.1, derivational suffixes are classified, but a few features responsible for polysynthesis are mentioned beforehand:

1.3.1. Derivational suffixes in advance

i) CAY derivational suffixes, standing between a stem and an inflection, are recursive and a word may repeatedly switch back and forth between nominals and verbs by means of transcategorial, i.e. nominalizing and verbalizing, suffixes as illustrated in § 4.2.5.1. Because of the transcategorial conversions in particular (fully illustrated in § 4.2.5.4.1, § 20.4, § 37.5.3.2, etc.), it is hard to define an upper limit in polysynthesis of CAY words.

ii) In addition to an abundance of primary suffixes, there are many secondary or "composite" suffixes consisting of two (or more) suffixes, which, more or less fixed and lexicalized/grammaticalized. Many of them are (very) productive and responsible for transcategorial conversions as illustrated in § 4.2.5.3. Some composite suffixes, however, can be deceptive unless precise analysis based on proper phonological adjustments is applied. In addition to being a primary suffix, the causative suffix *-cir-* (§ 39.1.3), for instance, may reflect different morphological sources; see i), iii), iv) under the verbalizing |*-liɣ-*| (§ 38.3).

Many composite suffixes show what may be called "cyclical expansion" (though not necessarily a felicitous term) by a pair of suffixes, that is, N→V→N (starting from a nominal and back to a nominal) and V→N→V (starting from a verb and back to a verb). And such cyclical derivation may also be recursive, with one followed by another, as V→N→V→N→V→N…, as exemplified in (44) by a nominal clause with successive derivations.

This kind of recursive cyclical expansion may involve a nominalization (a nominal or a relative clause), which can further be subject to verbalization, with each process recursive, as will be illustrated in § 17 and § 18. Verbalization of nominalized clauses is referred to as "reverbalization" and nominalization of verbalized clauses as "renominalization".

The recursive transcategorial conversion is a productive process retained more or less by CAY speakers (to different extents). Through cyclical expansion, the process is a resourceful device for a language endowed only with suffixation, though it is one of the features of the language that is markedly on the wane among younger speakers. It is not merely a synchronic process, however. Cyclical expansion itself has been an important diachronic process as well, one that is deep-rooted in the language's history. As a matter of fact, a fair number of basic and productive grammatical markers – such as (clausal) negation, past tense, complex verb, comparative clause, and valency modification (increase and rearrangement) – are fixed cyclical expansions of VN+NV type. See § 4.2.5.3 below for illustrations.

iii) The non-templatic polysynthetic morphology is also explored by "multivalent verbs" (VVsm; § 39) and in the multi-layered morphological embedding of a clause into an upper clause by means of "complex transitive" suffixes (VVcm; § 40)[3] – as illustrated by 'he *thinks* that she came here', 'he *asked* someone to let her come here', in which 'he' is the transitive subject and 'she/her' is the transitive object. A complex verb is in contrast to a "simplex" verb, while the latter may or may not be extended by VVcm suffixe(s) or not.

An upper clause (complex verb) may be further expanded by its own elaborating suffixes including nominalization and its reverbalization, the result of the former being a "concatenated relative clause" like 'the one who *I thought* is a man' (Otto Jespersen – cf. § 4.2.5.4.1, § 17.7, § 40.4.1). The language can also have a "concatenated comparative clause" like 'he is smaller than *I thought* you are' (§ 45.1.3), a "concatenated interrogative clause" like 'who *do you think* has arrived?' (§ 48.2.1), and a "concatenated adverbial clause" like 'he made it as *I assumed* he would' (§ 40.4.2).

3. Complex transitives correspond with the "compound-verbal" class used by Reed et al. (1977: 232–237), Woodbury (1985), and Jacobson (1994: 322–324; 1995) for CAY and the "double transitives" referred to by Fortescue (1984: 84–85) for Greenlandic. They may not only be double, but actually be triple (or more) in CAY, hence the term "complex" is preferred here to "compound" or "double". They are, incidentally, neither "serial verbs" nor "compound verbs" (as stem compounding) in other languages nor "complex transitives" in English (Quirk et al. 1985).

iv) Accordingly, the dynamic polysynthesis of CAY is colored by an exuberant internal syntax in which morphology may merge into the (external) syntax and is characterized by its great width of morphosyntactic function in addition to semantic richness. While at one extreme a CAY word may contain no more than a single morpheme (as is generally the case with typical isolating languages), at the other it may be the functional equivalent of a complicated sentence, embodying not only a good number of concepts of a more or less concrete order, but also various grammatical functions, thereby yielding a very 'heavy' word that in most languages would be rendered by a long succession of independent words.

In sum, the richness of the CAY internal syntax most strongly reflects:

a. recursive suffixations
b. transcategorial conversions
c. cumulative multi-layered complex verbs.

v) Finally it is to be noted, as a matter of fact, that fluent speakers, typically elders, are generally quite capable of using a variety of internally complicated long words besides derivational elaborations, and this is done for stylistic or aesthetic effects as well as for additions of grammatical/semantic and modal/attitudinal subtleties. The capability to use many suffixes is likely to be taken as a source of eloquence or verbal artistry (as manifested in speeches and in reciting narratives and tales) for which a Yupik person is traditionally respected. Speakers who are talented at polysynthetic word formation may sometimes have fun competing with each other in creating very long words that are grammatically acceptable though rarely if ever used.

Younger speakers in general, on the other hand, have much less of this polysynthetic capability. This is not surprising given the rapidly increasing influence of English with its analytical morphology and its consequently weakened command of the traditionally rich and productive suffixes. The speakers make particularly limited use of modal and attitudinal suffixes (§ 43), thereby rendering their speech short and straightforward, without cushions, and sounding childish to elder speakers.

1.3.2. Postinflectional derivation

Despite the very general pattern of inflecting word constitution as shown by (1), CAY has a certain amount of divergences. "Postinflectional" derivation, following de Reuse (1994: 170–230) describing CSY with theoretical implications, is to be observed in some types of CAY words (though much less common than CSY): They are a number of composite suffixes which contain an inflectional element as in (a-c) below, but there are also a number of suffixes which may

stand after particles as in (d-f). The stems may be subject to inflection as well as further derivation, except for (f) which are derived particles:

(5) a. NN |+*miu*-| (§ 20.1)
'dweller of' – probably from locative |+*mi*| with uncertain |-*u*-|

b. NV |+*m*(*i*)*t*-|~|+[*person*]*n*(*i*)*t*-| (§ 4.3.5, § 27.8)
'to be at/in' – "locative verbs" as phrasal compounds from locative element with obsolete existential stem |*it*-|

c. NV |+*viɣc*-| (§ 38.5)
'to go toward' – adverbial demonstrative allative |+*vit*|
|+*xuiɣ*-| (§ 38.5)
'to go through, by way of' – adverbial demonstrative perlative |+*xun*|

d. VV |-*qapic*-|, |-*qapia*(*ɣa*)*ɣ*-| (§ 41.3.1)
'just, intently', after some ignoratives and particles
|+$_1$*paɣ*-| (§ 41.3.2)
'to say loudly', after particles as in § 41(111)

e. NV |+*ŋu*-| (§ 37.1)
'to be' (relational verb) – e.g. *tua=i-ngu-nrit-uq,* § 42(78) *uumi-u-*

f. NN |-*ku*| (§ 11.3.3)
'coming, later', after some time words – e.g. *uumi-ku, yaalia-ku*

g. PV |+(V+VV)*ɣ*-| (§ 52.5)
'to say' – linking suffix (LNK).

1.4. Ergativity and case-marking

A predicate verb (§ 5.1.1) in CAY marks only one or two core arguments (subject and object), hence an intransitive or transitive verb, whether externally expressed by NPs or not: An NP or noun phrase as an argument may be a single nominal, a nominal phrase – including appositive, coordinate, juxtaposed, adjunctional as well as attributive or genitive (§ 16) – or a nominalization, that is: a nominal or relative clause (§ 17, § 18). In CAY the basic grammatical relations in phrase and clause level are marked both in the head and its dependent with its own inflection, hence the "double-marking" system (below). Cases for nominals are one of the inflectional, i.e. obligatory, categories to be marked (§ 4.2.4).

Eskimo languages are well known for being ergative languages in terms of morphology. This ergativity, however, manifests itself in a few other aspects.

1.4.1. Morphological ergativity

In CAY the absolutive case (ABS) is marked (or "flagged") on a core argument NP in S and P function and the relative (REL, as commonly used in Eskimo linguistics) on an NP in A function, following the ergative alignment pattern (S=P≠A). The relative case is bifunctional and strong affinity of A function with G (genitive) at the clause and (attributive) phrase level is observed (§ 16.4, § 24, § 30.1.3).

i) Morphological distinction in unpossessed nominals between the absolutive and the relative, however, is made only with singular ones (like ABS |+Ø| vs. REL |+*m*|) but does not with dual and plural ones (like ABS/REL.du. |+*ɣ*| and ABS/REL.pl. |+*t*|); see Table 20.

ii) Free personal pronouns (§ 13.1), which are not obligatory in general (but are more or less emphatic if they occur), make a distinction between the absolutive and the relative only in the third person, but not in a non-third person, i.e. first, second, reflexive third, which have a "common case". A third person pronoun is always used for humans, as, e.g., in Ainu (Bugaeva 2004: 24–25), while a nominal demonstrative is employed for both humans and non-humans (§ 12.2.1).

iii) The CAY ergative pattern, moreover, comes with a caveat, though not documented in other Eskimo languages, that, while the absolutive-ergative pattern is rigorously followed by NPs that refer to an (inflectionally coded) third person argument, an NP (either a common or proper name, a nominal phrase, or a relativization) referring to the first or the second person is not marked with the absolutive or the relative case,[4] but is instead marked neutrally with the locative case (§ 27.4 and Miyaoka 1985b, 1994a), despite the number agreement with the verb or the head NP, hence a "split" (§ 4.1.4.4) between a non-third person and a third person referent.

This can be schematically illustrated as '(I) *a woman* $_{\text{LOC}}$, do not understand $_{\text{1SG}}$'; 'you do not understand (me) $_{\text{2SG-1SG}}$, *a woman* $_{\text{LOC}}$'; '(you) a woman $_{\text{LOC}}$, do not understand me $_{\text{2SG-1SG}}$'; '(my) gun $_{\text{1SG-SG}}$ (*of/for*) *a woman* $_{\text{LOC}}$' (see § 27.4, § 30.5), showing that the NP referring to the first or the second person occurs neutrally in the locative case, typically (but not obligatorily) accompanied by a free personal pronoun in the "common case" (above).

4. I have encountered, however, a few exceptional speakers in this respect, using the absolutive or the relative.

These (ii and iii) are two kinds of NPs that are relevant to "animacy hierarchy" by showing lack of morphological distinction between the absolutive and the relative case.[5]

iv) Verb inflections (for subject and object) employ both possessed nominal person makers (absolutive and relative; § 20 and § 21) and verbal person markers (§ 32) in different combinations depending upon the moods. See also § 4.2.4-i and § 46.1 for partial identity of verbal and nominal inflections.

The inflections of each mood show that the verbal person markers (listed in Table 30) occur in the ergative pattern, e.g. first person singular |+*ŋa*| for S and P arguments, as in *pi-u-nga* (do-IND-1sg.) 'I am doing' and *pi-a-v-nga* (do-IND-2sg.-1sg.) 'you (sg.) are doing to me', where *-v-* for A argument reflects the nominal person marker in the relative case (cf. REL.2sg.sg. |+*vit*/+*pit*|).

v) By contrast, an NP in S or A function agrees in number with the subject of the predicate but one in P, T or R with the object (§ 16, § 51, etc.), and the reflexive third person (distinct from the third – see § 22.2, § 32.2) refers to the subject, i.e. S or A argument of a main clause (§ 50-ii, § 51.1.4.2). Thus, syntactically, CAY follows the nominative-accusative pattern.

vi) Lexical ergativity (Comrie 1978: 392) has to be mentioned in reference to bivalent or monotransitive verb stems, a little more than a half of which are "agentive", with the rest being "patientive".[6] The former are intrinsically agentive (A=S; e.g. 'he ate it' vs. 'he ate [something]'), while the latter are patientive (P=A; e.g. 'he broke it' vs. 'it broke / was broken') and require suffixal antipassivization (traditionally called "half-transitive" in Eskimo linguistics, though sometimes viewed as accusative; Kalmár 1979: 54) to be an agentive intransitive; e.g. he broke-APS 'he broke [something]') – see § 4.2.1-ii below and § 34.2 The latter "patientives" are ergative verbs.

This fundamental bipartite feature of CAY bivalent stems permeates a number of important morphological and syntactical phenomena of the language (e.g. topicalization, nominalization, relativization, nominal derivations, etc.).

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5. There is another kind of noun, that is, a teknonymy (which is morphologically a phrasal compound from an original 'X's *woman*'), which has no distinction between the absolutive and the relative case (both ending in *-an*), as opposed to a male teknonymy (bound phrase from 'X's *father*') with reduced distinction between the absolutive *-(i)i* and the relative *-(i)in* (the former may occur for S/P functions) – § 2.4-v, vi, § 4.3-v, § 11.6.2.
6. T. Nagai (2006: 256) compared the number of 100 verb stems (agentive and patientive bivalent as well as monovalent) in CAY, North Alaskan Iñupiaq (Upper Kobuk), Japanese and English, giving the ratio of agentive vs. patientive in that language order: 56/35, 58/42, 63/26, 81/16.

1.4.2. Double marking

At the clause level, an absolutive-case NP agrees with the intransitive subject or the transitive object, and a relative-case NP with the transitive subject, as inflectionally marked. At the phrase level, a relative-case NP is the dependent of an attributive (genitive) phrase (§ 16.4), agreeing with the third-person possessor of its head NP (possessum). Thus, both the head and the dependent show "double marking" at both the clause and the phase level.

Correlated with this double-marking of the basic grammatical relationships, the constituent order (word order) in clauses and nominal phrases does not play a central role in the syntax of CAY but is generally very flexible (§ 5.4), and "detached articulation" (§ 2.3.3) may be far from a rarity.

The double marking also permits a very high frequency of sentences consisting of only a single (predicate) verb, as a head, with the core argument coded only in its inflection, thereby yielding practically no ambiguity. By the same token, attributive constructions may often consist only of the head for the possessum, with no external NP in G function but with the person (possessor) marked in the head NP.

CAY belongs to the type of languages where a heavier grammatical weight is placed on VP than NP(s), though both are intimately correlated.

1.4.3. Case marking

"Primary" (i.e. non-extended) verb stems have primary arguments, that is, S for monovalent (intransitive), P and A for bivalent (monotransitive), and T, R, and A for ditransitive (§ 4.2.1, § 4.2.3.1). S includes impersonal subject (S_{IMP}). "Extended" (i.e. non-primary or secondary) stems have valency modification, i.e. increase (and rearrangement) or decrease, as derivational process. Increase includes causative A (only on monovalent stems or roots, § 4.2.2-iv), applicative and adversative E (standing for extension of "experiencer" E; E_{APL} and E_{ADV}, § 39.4, § 39.4), impersonal agent (A_{IMP}), and complex transitive agent A', A", … Decrease includes antipassive and pseudo-passive. See § 30.1.2 for the list of primary and extended arguments.

All these arguments are candidates for core arguments. These, with various combinations occurring in a single verb, are subject to case-marking, if externally expressed by a free NP (except S_{IMP} and A_{IMP} which can never be explicit, thus irrelevant to case marking, though they are coded as intransitive or transitive subject in verb inflection). A single verb is actually attested to have up to six or seven arguments involved (though theoretically with no upper limit). Every one of the arguments may be promoted to the absolutive-case status and all, except for P argument, may occur in the relative-case status. Corresponding-

ly, all of them can also be subject to "argument reduction" (by way of demotion, deletion, and coreference; § 30.3). Given all this, no static case alignment pattern may be feasible in CAY, but a dynamic process of case assignment should be considered that rigidly follows "argument hierarchy" in § 30.2 (where the whole pattern of case assignment is summarized).

The language has no active-inactive [active-stative] split (Sapir 1917, Klimov 1974) in its case marking, that is: there is no split intransitivity,[7] although the active verbs are only relevant to one kind of relativizer (§ 17.5.1) and imperatives in the optative mood (§ 49). S_A argument only pertains to the agentive/active relativizer |+*st*-| 'one who' (§ 17.5).

An adjunct NP is assigned one of the five oblique cases – ablative-modalis, allative, locative, perlative, or equalis – aside from a vocative form (§ 31). Details of the seven cases and their assignments are provided in § 23 through § 29.

Chapter 30 of case assignments is at the midpoint of the whole description where many things from the previous nominal chapters (e.g. nominal derivation and inflection) get explained and looks ahead to issues that will be handled in the following verb chapters (e.g. verb valency and inflection), as their integrative treatment.

2. Word and its constructions

As stated in connection with non-templatic polysynthesis (§ 4.1.3), a CAY word as defined in § 2 can easily be seen as an functional equivalent of a sentence with a complex syntactic structure at one extreme, while at the other extreme it may be coterminous with a single morpheme (as is in typical isolating languages). CAY words as such are structurally diverse, functionally versatile, and deviate considerably from the common view of words that is based on well-known European languages.

Accordingly, a CAY word may be a very long sequence of syllables. However long it may be, a CAY word is a form that is characteristically patterned by certain morphological features and underscored by phonological ones that include (basically iambic) accentuation, a (potential) intonation contour, and, most fundamentally, potential pausing. These two "conspire" to unify a word as a form (§ 2.2.2).

Yupik words are in fact not merely 'static' constructs but may approach the 'dynamism' of a sentence in a microcosm, as speakers creatively articulate a word, to a considerable extent, on each occasion or on the spur of the moment. A word can be made up, though necessarily within certain limitations, by using

7. Thus, the language contrasts with the active-inactive languages as represented by Haida, one of the languages geographically nearest to CAY (Hori 2000, 2003; Enrico 2003: 93).

many productive suffixes with much the same ease as a sentence is articulated with nearly as many words in other languages. Yupik speakers are indeed excellent 'daily neologists' in some way.

2.1. Three word classes – nominals, verbs, non-inflecting words

CAY words can reasonably be separated into three classes primarily in terms of their construction, that is, inflection or its lack: "nominals", "verbs", and "non-inflecting words" (further divided into "particles" and "enclitics", § 53, § 54). The term nominal is used to subsume "nouns", "demonstratives", "personal pronouns", "numerals", and (part of) "ignoratives" (§ 11 through § 15), though the last (Wierzbicka 1980) may not be now felicitous.

Inflecting and non-inflecting words are distinguished according to whether a word is completed by its inflection at the end or not. Inflecting word, nominals and verb, are distinguished by different type of inflection.

Of the three classes, the verb is naturally of central importance. It is a "verbum", i.e. the word of words in CAY grammar as well. A predicate verb is the obligatory element of a clause, while a nominal (whether in the core or an oblique or a peripheral function) and a particle are optional. Internally, nominals may be less elaborate than verbs.

CAY has no word classes like articles, adpositionals (prepositions, postpositions), articles, conjunctions, cf. iii) below.

i) *Nominals* – are characterized by the inflectional categories of number (singular, dual, plural; § 21), person (possessor – first, second, third, reflexive third; § 22), and case (absolutive, relative; ablative-modalis, allative, locative, perlative, equalis; § 23 through § 29). Single nominals may be subclassified into:

a. nouns – common, appositive, location, time, kinship, color, proper, and onomatopoeia; § 11
b. demonstratives – nominal and adverbial; § 12
c. personal pronouns; § 13
d. numerals/quantifiers (including verbal ones); § 14
e. some ignoratives (others being particles or verbs); § 15.

Nominal phrases, relativizations (relative clauses) and nominalizations (nominal clauses), which may take the place of single nominals in a syntactic slot, are discussed in § 16 through § 18.

A CAY participle, as a "participium", participates in the character of nominals and verbs. Characterized by the same markers (intransitive and transitive), a nominal participle is nothing but one kind of relativization (§ 17.2), and a verbal participle is a verb in the participial mood (§ 4.2.4-i, § 47).

ii) *Verbs* – are characterized by the inflectional categories of person (subject and object; § 32) and mood (§ 46 through § 51). There are three kinds of primary stems in terms of valency, primary in the sense of being without valency modification:

a.	intransitive[8]	monovalent	with S (§ 33); 'to die', 'to be small'
b.	monotransitive	bivalent	with P and A (§ 34)
	agentive type		'to eat' [S=A]
	patientive type		'to break' [S=P]
	impersonal patientive type		'to freeze' [S=P, with A_{IMP} 'it']
c.	ditransitive	trivalent	with T [theme], R [recipient], and A (§ 35)
	secundative type		'to give someone (something)'
	indirective type		'to give something (to someone)'.

These different types of verb stems are minimally illustrated in § 5(3) and (4).

Impersonal A (A_{IMP}) is coded in transitive inflection (as the third person singular subject), forming a "transimpersonal" construction (Haas 1940; Malchukov 2008), but it cannot be externally expressed by a free NP (§ 34.3).

Primary stems may be subject to valency modification by means of valency-modifying suffixes (VVsm and VVcm; § 4.2.5.1, § 39, § 40), thereby increasing, decreasing, or rearranging one argument.

When stems (primary or modified) are inflected, they can be either of the following (§ 32.1.2):

a.	intransitive verbs	with subject marked
b.	transitive verbs	with subject and object marked

Transitive verbs may be detransitivized into antipassive, medio-passive, reflexive or reciprocal, e.g. § 5(4), depending upon how the argument reduction is made – see § 5.1.1.1-i and § 34.1 through § 34.4 for details.[9]

CAY is considered not to have the so-called "copula". Copula-like or equational verbs (like *A is* [*his*]*B*) in CAY, which are not necessarily intransitive but may indeed be transitive, are referred to as "relational verbs"[10] – see § 5.1.1.3-i and § 37. A parallel distinction between intransitive and transitive is also made for "comparative verbs" (like *A is bigger than* [*his*] *B*) – § 5.1.1.3-ii, § 45.1, § 45.2. Besides intransitive vs. transitive, CAY relational and comparative verbs manifest contrast between stative and inchoative (§ 37.3, § 37.4).

iii) *Non-inflecting words* – consist of multisyllabic particles and monosyllabic enclitics, prosodically distinguished from each other (though some dialects

8. Intransitives include predicative "adjectives".
9. CAY antipassivizers, it will be found, are originally a function of "adversative" (and "benefactive") suffixes as a kind of applicative verbs. – § 39.5.2.
10. Distinct from what has been called "relational" verb construction in the Algonquian literature since Bloomfield (1928), cf. also Junker (2003).

have one exception in this distinction) (§ 52 through § 54). They are devoid of inflection by definition and of productive derivation, though some show traces of obsolete derivation and inflection. While these words may be semantically/functionally vague, many of them serve as 'lubricants' in utterances and have no formal cues to classify them. A tentative grouping may, however, include:

a. interjective/exclamative
b. sentence word
c. sentence-adverbial (modal, expressive)
d. adverbial
e. conjunctional (coordinating)
f. discoursive
d. sentence fillers (expletive).

While particles are a semi-closed class, enclitics are a small closed class (with a membership of about a dozen). Enclitics are words that always 'lean' phonologically upon the preceding host word, forming an enclitic bound phrase together with it. They are clearly distinct from suffixes, which can only be (articulated as) a part of a word. An enclitic as a word can attach to any kind of word (verb, nominal, non-inflecting), while suffixes attach only to a specific type of (expanded) stem, forming nothing but a part of a word.

Most CAY enclitics are attached to a clause-initial word, i.e. as a second-position enclitic (Wackernagel's Law) – cf. § 54. An enclitic may be followed by another, though three (or four) enclitics in succession would seem to be the limit.

No enclitics are known to have derived from free words. Personal pronouns, which may form bound phrases with another word, are not enclitics, however.

Particles have no inflection and are not stems but complete words by themselves. Nevertheless, as mention in § 4.1.3.2, some suffixes can be added, as if postinflectionally, to some kinds of particles.

iv) *Three word classes, each with wide functional coverage* – As the demarcation between enclitics and suffixes (whether derivational or inflectional) is rigid, so is that between nominals, verbs, and non-inflecting words. There are a few kinds of verbs, namely "connective" mood verbs (§ 50), however, which may be considered a transitional stage from nominals in view of case marking, although some speakers prefer corresponding nominal phrases to the connective mood verbs used by some speakers.

As a consequence of the (only) three word classes, each covers a wider functional range than, say, each of the traditionally held "eight parts of speech". CAY has no morphologically distinct word classes such as 'adjectives' or 'adverbs' per se, although appositive nouns (§ 11.1) are adjectival in function and many particles are adverbial. (Another choice for "appositive nouns" would be 'adjectives', but the term "appositive", which is used for phrases as well [§ 4.1.4, § 16.1], is preferred to.) A considerable portion of (monovalent) verb

stems would function as 'predicative adjectives' in other languages. One cannot identify adjectives in CAY by such a property as being a parameter of comparison.[11]

Adjective-like and adverb-like functions are also served by a large number of productive suffixes besides three particular word class types. The function of 'attributive adjectives' is served by nominal-elaborating suffixes (NN type; § 20.1) as well, of which the language has a rather large stock, attributive nominals in G function within attributive nominal phrases (§ 16.4), and relative clauses (§ 17). On the other hand, the function of the so-called 'adverbs' is served by many verb-elaborating suffixes (VVa; § 41), various particles (§ 53.4), and connective mood verbs (§ 50).

"Adpositional" function (prepositions or postpositions) is largely performed by person-inflected location noun (§ 11.2.2), with the dependent noun designating the relative position (spatial and temporal).

There are, moreover, a number of non-inflecting words of conjunctional nature (§ 53.5), which are, however, generally coordinating conjunctions. CAY seems to have poor development of subordinating conjunctions, which is clearly correlated with the fact that the clausal dependency is largely handled by an abundance of subordinate clauses (with connective-mood verbs) and "cosubordinate clauses" (terminology used by Van Valin and LaPolla 1997; with "appositional" mood verbs; § 51-i) and by two kinds of "converbs" (§ 47.6).

In CAY, which has no 'articles' as a separate class, the rich system of nominal demonstratives (§ 12.2) functions like definite articles, and the definite-indefinite distinction of P/T/R argument is negatively implied by the assigned case marking of the absolutive case vs. oblique ("demoted") cases (i.e. ablative-modalis or allative – § 25.2.1, § 26.2).

2.2. Constituents of inflecting words – stem, derivation, and inflection

As stated, inflecting words, either verbs or nominals, morphologically consist of two obligatory constituents, a "stem" (called a "base" by some Eskimologists), which always comes word-initially, and an "inflection", which stands finally to morphologically complete an inflecting word as a form, signaling its end.

It is the inflection that determines the word class, but *not* a word-initial stem (or root). A stem can be indefinite or ambivalent (nominal and verbal) and can change the class repeatedly by transcategorial suffixes within a word (§ 4.2.5.1). A stem may have a sequence of recursive transcategorial suffixes, finally becoming either a noun or a verb depending upon the functional kinds of the suf-

11. The index of comparison |-*nɣu*-| can also occur with a denominal relational verb (e.g. 'to be an old woman') or with the verb 'to choose, prefer' – cf. § 45.1.4.

fixes involved. A good number of apparently ambivalent stems in CAY (listed in § 10.4) may not be a problem to be dealt with using the so-called zero-derived transcategorial conversions.

i) *Stem and inflection* – Only one stem occurs in each word (as stated). The single-stem principle is very strict in CAY word formation, implying the complete avoidance of stem compounding apart from a few cases of phrasal compounds (single words, as stated) as morphological anomalies (§ 2.3, § 4.3.6) and of noun incorporation as a means of compounding noun and verb stems.

Inflection, which consists of one, two, or three inflectional suffixes that are often fused, encodes the obligatory categories of:

a. mood and person (subject and object) for verbs – § 32
b. case, number, and person (possessor) for nominals – § 21 through § 29.

ii) *Derivation* – Between the stem and the inflection there may optionally occur another constituent, i.e. one or more "derivational suffixes". The order of the three constituents cannot be permutated.

Thus the structure of inflecting words – nominals (N) and verbs (V) – is represented by example (1) above and exemplified by (2) and (3), etc.

In CAY, tense-aspect is optionally provided by verbal derivation (verb-elaborating VVt suffixes; § 42) or lexically by some particles. Modality and evidentiality are likewise provided optionally by verb elaborating suffixes (modal VVm; § 43) or by some particles but also partly an inflectional category (for illocutionary force; declaratives, interrogatives, imperatives, and optatives, see § 46 through § 49). Polarity or verbal negation (VVn) is expressed by negative suffixes (§ 44).

iii) *Two kinds of suffixes* – derivational and inflectional, the former of which forms a semi-closed class and the latter a closed class, are morphologically distinct. While derivational suffixes are a lexical means of creating new words, they also have extensive syntactic relevance. The notion that derivational suffixes are unproductive while inflectional ones are productive is totally alien to CAY. Concerning the distinction between the two, Mithun (1983: 238) once suggested that expressions which speakers of the language may have thought to be more important at one stage have been morphologized into (derivational) suffixes while the most important ones that they determined to be obligatory have been morphologized into inflections.

iv) *Roots* – A good number of stems cannot be followed directly by inflections unless immediately expanded by one of a limited number of (derivational) suffixes. They are referred to as "roots" (§ 10.5) and the expanding suffixes as "root expanders" (EX), some of which are specific to roots while others are not. A root followed by a root expander functions as a stem ("root-derived stem";

§ 36), which then can be followed by inflections with or without intervening derivational suffix(es).

It is to be noted that many roots are more or less indeterminate as to being either nominal or verbal – see § 10.5. Verbal roots have no valency, i.e. "a-valent". All demonstratives (§ 12) and some ignoratives (§ 15.2) begin with roots. Demonstrative roots are expanded into nominal, adverbial, and verbal demonstrative stems by their particular expanders (§ 12.2, § 12.3, § 12.4).

2.2.1. Morpheme shapes and suffix types

Stems and suffixes end either in a vowel (V, /ɨ/, VV), an apical stop (/t, c/), or a velar (/ɣ, ɣ̇, x, x̣/), while demonstrative roots end in /m, n, ŋ, k, ɣ, w, t/ as well as /u/ – see § 3.2 for vowel inventory and § 3.3 for consonant.

Stem-final segments as well as suffix-initial and -final segments trigger different segmental adjustments (§ 7).

i) *Morpheme-initial/final segments*

i.a) *velars*: Some suffix-initial velars /k/, /ɣ/, /ɣ̇/, /ŋ/ and some morpheme-final /ɣ̇/, which behave differently from others, are called "strong". The suffix-initial "strong velars" are marked with an asterisk (*) after the velar in phonological representations, e.g. NNh |-*k**ayaɣ̇*-| 'darn, mean', VVm |+$_1$*ŋ**at*-| 'maybe' – see iii.a) below for the plus + (retaining) and the minus – (deleting) and iii-b for subscript $_1$.

The morpheme-final distinction between "strong" and "weak" /ɣ̇/ occurs only in nominal stems or suffixes and only after single full vowels, while all the other final /ɣ̇/ are strong. So the asterisk marking is only made for a strong /ɣ̇/ following a single full vowel (V), e.g. |*tanɣux̣aɣ̇**-| 'boy', participial |+$_1$*ŋuɣ̇**-| (vs. |*qayaɣ̇*-| 'kayak'). The other morpheme-final strong /ɣ̇/ is not so marked.

The morpheme-final distinction of the back velar /ɣ̇/ fluctuates somewhat, as some speakers use a strong (or weak) velar in place of the more general weak (or strong) one – e.g. *ciir-e-t* ~ *cii-t* 'sheefish (inconnu)', the latter of which, reflecting a weak velar, may sound like baby talk.

All the nominal-final front velar /ɣ/ are strong, hence no asterisk marking for them.

i.b) *apicals*: The final /t/ occurs only in a number of adjectival verb stems (e.g. |*mikɨt*-| ~ |*miki*-| 'to be small', |*asiit*-| 'to be bad') and privative and negative suffixes (e.g. NV |+*ŋit*-| 'to have no' and VVn |-*nɣ̇it*-| 'not'), while the final /c/ occurs only in verbal stems and suffixes (e.g. |*kic*-| 'to sink', |+*kic*-| 'to give s.o.'). The apical /t/ and /c/ are fricativized into /l/ and /z/ respectively before certain suffixes marked by subscript $_1$ (like |-$_1$*ki*-|; P5i.a).

ii) *Morpheme boundaries* – When cited in isolation, stems and derivational suffixes end with a hyphen, and suffixes begin with a "plus" (+) or "minus" (-) sign depending upon their phonological behavior – e.g. (6), (7), (8) below. Either sign can serve as a morpheme boundary in underlying representations – with a sign at the end of a stem, both at the beginning and end of derivational suffixes, and at the beginning of inflectional suffixes. The subscripts $_{N}$ and $_{V}$ may be used to indicate the nominal or verbal stems – thence their combinations for suffixes, i.e. nominal-elaborating $_{NN}$, verb-elaborating $_{VV}$, verbalizing $_{NV}$, nominalizing $_{VN}$ as in (7):

Stems marked with final hyphen (-):

(6)

|*utaqa*-|$_{V}$ 'to wait', |*atuɣ̇*-|$_{V}$ 'to use'	– verb
|*cila*-| ~ |(*c*)*iɬa*-|$_{N}$ 'weather' (see below)	– nominal
|*qayaɣ̇*-|$_{N/V}$ 'kayak / to use a kayak'	– ambivalent; see also (14) below and § 10.4.

Suffixes start with initial + or – below:

derivational suffixes: see § 4.2.5.1 for the subclasses and notations:

(7)

|-*li*-|$_{NV}$	'to make (for someone)' – denominalizing
|+*li*-|$_{VN}$	'one who/that (is/does)' – deverbalizing
|+*paɣ*-|$_{NN}$	'big' – nominal-elaboraing
|-*lŋu*-|$_{VV}$	'to be tired of -ing' – verb-elaborating.

inflections end with no boundary: given in the respective table

(8)

|-*ka*|$_{N}$	ABS.1sg.sg. ('my') – nominal
|+*ɣ*/*tuɣ̇*| < |+*ɣ*/*tuɣ̇*(+Ø)|$_{V}$	IND.3sg. ('he/it') – verbal.

iii) *Phonological adjustments* – Suffixation of a derivational suffix or of an inflection to its immediately preceding morpheme requires a variety of adjustments in the phonological segments at the morpheme boundary that are brought into contact in the articulation process – phonological rules (P1) through (P17) in § 7. They are mostly regular and predictable as such, hence the general characteristic of agglutination above. However, there are adjustments idiosyncratic to certain morphemes, and some adjustments are deep-layered and not directly or completely predictable from the phonological shape of the elements involved. Thus at least a few types of suffixes are distinguished according to the pattern of phonological adjustments that they induce.[12] Some conventions (as

12. Reed et al. (1977) and Jacobson (1984, 1995) distinguish a good number of "suffix types" indicated by different symbols, most of which Miyaoka and Afcan (1969) were initially responsible for. But, except for the retaining (+) and the deleting (-),

marked by plus or minus +/-, subscript$_1$, asterisk *) are employed to show these somewhat specific adjustments.

iii.a) The most important distinction is that between "retaining" and "deleting" suffixes. The suffix-initial plus and minus mean that any preceding stem- or suffix-final velar is either retained (+) or deleted (-): While the final velar fricative, if any, is retained before, e.g. |+*put*| ABS.1pl.sg. (more exactly |+$_1$*put*|), it is deleted before, e.g. |-*put*| ABS.1pl.pl., as exemplified in final velar deletion (P9). See (P2) and (P8ii) which are also sensitive to this type of distinction.

iii.b) One type of suffix has the "subscript" $_1$ (one) after the boundary, as in the foregoing |+$_1$*put*| or the desiderative suffix |+$_1$*cuɣ*-| (§ 43), which means that a preceding stem-final apical, if any, is adjusted in some way or another, undergoing deletion, fusion, or fricativization, as exemplified in the Final Apical Adjustments (P5i.a,b), with or without a specific arrangement in addition. The subscript is given in phonological representations only in those contexts that are relevant, that is, only when the preceding (derived) stem has a final apical stop. A number of suffixes, without the subscript, show the same adjustments (P5i.c).

iii.c) Several suffixes have the initial velar marked with an asterisk as a "strong velar", including the intensifier VVa |-*k*ac*(*a*)(*ɣ*)*aẏ*-| (§ 41.3.5), modal VVm |+$_1$*ŋ*at*-| (§ 43), and the verbal person marker |+*ɣ*u*-| '3sg.' (Table 30; § 32.2.1), and they behave in several respects differently from non-asterisked or "weak" velars: see (P3i, P3ii.a), (P6), and (P11) for details. The morpheme-final distinction between strong and weak /ẏ/ is relevant to (P4i).

In addition to these conventions, some suffix-initial (or medial) segments /l, (u)c, s(t), (ɣ)/ require specific phonological adjustments, as listed just before § 7.1 (a through d).

iv) Inflectional suffixes behave somewhat differently from derivational suffixes in their phonological adjustments. In the underlying phonological representations, a square bracket ([) is employed to signal the start of the inflection:

(9) |*qayaẏ*+*paɣ*-*li*[+*ɣuẏ*| /qayáχpàlliuq/ *qayarpaliuq*
kayak-big-make-IND.3sg.
'he is making a big kayak'.

– where the stem-final /ẏ/ is retained before the plus-signed NN suffix |+$_1$*paɣ*-| 'big' whose final /ɣ/ is deleted before the minus-signed NV suffix |-*li*-| 'to

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iii.a) above, they are found basically predictable, among them, 'half-retaining' ÷, ~ 'final *e* deleting' ~, 'assimilative' (underlined k, q, etc.), 'intervocalic voiced velar continuant dropping': It will be seen that they are dissolved in this description by combined applications of phonological rules in § 7.

make'. The inflection-initial /ɣ/ is deleted by the very general rule of Intervocalic Velar Deletion (P10). The stem-final /ɣ̇/ becomes /x̣/ by the Devoicing Rule (P13), and the word-final /ɣ̇/ becomes /q/ by (P13) and Word-Final Adjustment (P17i). Prosodic rules (§ 8) assign Rhythmical Accent (P18i) on /á/ and Regressive Accent (P18ii) on /à/ (realizing in the gemination of /l/) to provide the final surface, i.e. phonemic, form.

Full inflectional paradigms, for either nominals or verbs, are not exemplified as long as they are predictable from the Tables concerned by general rules, while the sporadic particularities or complications are explained in the text or footnotes.

2.2.2. Morpheme sequence illustrated

Suffix types (§ 4.2.2.1) and classification of derivational suffixes (§ 4.2.5) imply that a stem or an expanded stem selects the type of a following suffix. By definition a verb stem (V) or a verbal suffix (NV or VV) can only be followed by VN or VV and a nominal stem (N) or a nominal suffix (VN or NN) can only be followed by NV or NN.

Accordingly the rightmost suffix of the category-converting type (if ever), rather than the stem, is the categorial head of the word. Thus what determines the class, whether nominal or verb, of the whole word is the function of the rightmost suffix of the category-converting type (NV or VN), or, if there is no such suffix, the stem itself.

A verb stem (with no suffix of the category-converting type), or an expanded stem in which the rightmost suffix of the category-converting type is verbal, combines with a verb inflection to indicate inflectional categories such as mood and person (subject and object), thus constituting the following example repeated from (3b):

(10) |*qayaɣ̇*$_{N}$+*paɣ*$_{NN}$-*li*$_{NV}$-*qaɣ̇*$_{VV}$+*sqi*$_{VV}$+*caaqi*$_{VV}$-*łɣ̇u*$_{VV}$[+*ɣaqa*|$_{V}$ >
kayak-big-make-ITS-A'.ask-but-PST-IND.1sg.3sg.
/qayáx̣palí·qaásqìssaáqìłx̣uá·qa/ *qayarpaliqaasqessaaqellruaqa*
'I asked him to make a big kayak (but actually he has not made it yet)'.

In this word, which is a "directive" complex transitive with upper A'.ask (§ 40.2.2), the noun stem |*qayaɣ̇*-|$_{N}$ is expanded by six derivational suffixes (with two-letter subscript; $_{NN,\ NV,\ VV}$) of different functional classes. The completely expanded stem is verbal (since the rightmost transcategorial suffix NV |-*li*-| is verbal and thus followed by the verbal inflection |+*ɣaqa*| (from two morphemes |+*ɣaɣ̇*-| and |-*ka*|: see Table 46; § 46.1). Note that the two class symbols

(N or V) should be identical across morpheme boundaries (+ or -), i.e. N±N or V±V.

Likewise, a nominal stem (with no expansion by category-converting type) and expanded stems, in which the rightmost transcategorial suffix (like VNnm |+*caẏaẏ*-| below) is nominal, combine with nominal inflections (like |-*ka*|: see Table 21; § 23) to index inflectional categories such as case, number, and person (possessor), as in the following repeated from (3a):

(11) |*qayaẏ*$_{N}$+*paɣ*$_{NN}$-*li*$_{NV}$+*caẏaẏ*$_{VN}$[-*ka*|$_{N}$ >
kayak-AUG-make-VNnm.way.of-ABS.1sg.sg.
/qayáx̣palí·yaɣá·qa/ *qayarpaliyaraqa*
'the way I make a big kayak'.

which is a nominal clause with three suffixes (NN, NV, VN), thus completed by the nominal inflection.

2.3. Stems

2.3.1. Classification

The stem carries the 'basic meaning' of the word (except for two bivalent stems that are the most neutral or sometimes even "empty" in meaning – |*pi*-| 'to do; thing' and |*ca*-| '[to do] what/something'; § 10.3). Apart from particles (without inflection), stems (but not roots) are classed as either nominal or verbal:

(12) *Nominal*: end in a vowel, a velar /ẏ/ or /ɣ/, or an apical /t/ – e.g.:
a. |*nuna*-| 'land', |*niqi*| 'fish', |*ciu*-| 'front part'
b. |*qayaẏ*-| 'kayak', |*kuiɣ*-| 'river'
c. |*ciut*-| 'ear'.

(13) *Verbal*: end in a vowel, a velar /ẏ/ or /ɣ/, or an apical /t/ and /c/ – e.g.:
a. |*tai*-| 'to come over', |*uita*-| 'to stay', |*aqumi*-| 'to sit'
b. |*atuẏ*-| 'to use', |*kaiɣ*-| 'to be hungry'
c. |*asiit*-| 'to be bad'; |*tikic*-| 'to arrive', |*tanɣẏ-cic*-| 'to be dark'.

Final /t/ in (c), preceded by /i/ (except for one suffix |-*at*-|), is restricted to negative VVn suffixes (§ 44), and a fair number of stems with final /(ci)c/ occur in 'adjectival' stems. The group (c) has the peculiarity of selecting the negative apposition marker (characterized by |-$_{1}$*na*-|; § 51.1.3-i).

However, a good number of stems that are part of the basic lexicon are ambivalent, possibly functioning either as nominal or verbal:

(14) *Ambivalent*: |*atkuɣ*-|$_{N/V}$ ‘parka; to put on a parka’, |*qanẏ*-|$_{N/V}$ ‘mouth; to speak’; more in § 10.4.

Some stems may be very broad in their semantic content (besides the more or less expletive stems |*pi*-| and |*ca*-| below), while others are very specific. For example, the gloss of the nominal |*cila*-|~|(*c*)*ɨła*-| ‘weather’ in (6) can also be ‘outdoors, universe, weather, awareness, etc.’ (see § 12-fn. 5 for more). The verbal stem |*atuɣ*-| in (15) cannot only be ‘to use’ but may also mean ‘to sing, wear/don, go through, follow, experience, etc.’ as illustrated:

(15) a. [*Tumyaraq* *ma-n’a*]$_P$ ***atu****-llru-a.*
trail.ABS.sg. this-EX.ABS.sg. use-PST-IND.3sg.3sg.
‘He *followed* this trail here.’

b. [*quinag-na-mek* *assiil-ngur-mek*]$_{(P)}$ ***atur****-pailegma*
ugly-cause-ABM.sg. bad-VNrl-ABM.sg. use-CNNbf.1sg.
‘before I *experienced* ugly/bad/disgusting things (e.g. attained carnal knowledge)’ [AKKL 228]

c. *Kuingir-ngail-ucirka-qa*$_P$ ***atu****-nrit-aqa.*
smoke-will.not-VNnm.FUT-ABS.1sg.sg. use-NEG-IND.1sg.3sg.
‘I am not *following* my promise / instruction not to smoke.’
– VVn |+$_1$*ŋ*ait*-| ‘will not’

d. *Iga-**neq***$_P$ ***atur****-aa.*
write-VNnm.ABS.sg. use-IND.3sg.3sg.
‘He always writes / has become a writer (lit. uses writing).’

The distinction between nominal and verb stems is blurred in particular for:

i. some time words (§ 11.3

ii. some quantifiers (§ 14.10) – verbal only in the stative-connective mood (§ 50.10)

iii. emotional roots that seem generally verbal but somewhat nominal in derivation (§ 36.1)

iv. a limited number of (derived) verb stems that can be directly followed by the relative-case marker |+*m*| as if they were nominal (§ 24.3).

Nominal stems are subclassified in terms of morphological and syntactical properties:

i. nouns (§ 11)
ii. demonstratives (§ 12)
iii. personal pronouns (§ 13)
iv. numerals (§ 14)
v. ignoratives (§ 15) .

Verb stems are subclassified primarily according to their valency, i.e. the number and the kind of the nominal argument(s) inherently involved in each stem:

i. monovalent (intransitive) stems (§ 33)
ii. bivalent (monotransitive) (§ 34)
iii. trivalent (ditransitive) stems (§ 35)
iv. root-derived stems (§ 36).

As stated, stems and expanded roots (just below) can be directly followed by an inflection to make up a morphologically complete word, but stems easily may be subject to expansion by one or more derivational suffixes. Suffixes responsible for "expanded stems" are of various types:

i. stem-elaborating type (NN in § 20 and VV in § 41 through § 45)
ii. valency-modifying type (VVsm and VVcm in § 39 and § 40)
iii. transcategorial type (VNrl, VNnm, VN in § 17 through § 19 as well as NVrv and NV in § 37 and § 38).

Roots, of which there are a considerable number (§ 10.5), including demonstrative roots (§ 12), have to be expanded by one of the root expanders (EX) in order to function as stems and take an inflection, as illustrated:

(16) a. |*kamɣ-**uɣ**-*|$_{N}$ 'knee-high boot', |*qɨɣ-**tu**-*|$_{V}$ 'to be high'
b. |*u-**ku**-t*|$_{N}$ 'these ones' (*-t* ABS/REL.pl.).

Many of the expanders are non-productive suffixes specific to roots, but some general and productive suffixes are also employed for root expansion.

2.3.2. Shape of stems

Phonologically the shortest stem is monosyllabic, having the shape (C)V(C)-. Monosyllabic stems of open syllable CV- are limited to those given in (17).

i) Monosyllabic:

CV-: includes only three stems (a) and two roots (b), e.g.:

(17) a. |*pi-*|$_{N/V}$ 'thing; to do', |*ca-*|$_{N/V}$ '(to do) what/something', |*na-*|$_{N}$ 'where'
b. |*ki-*|$_{N}$ 'who', |*u-*|$_{N}$ 'this (one)'; which require an expander.

(*C*)*VC-*: stems (a) and roots (b)

(18) a. |*yuɣ-*|$_{N}$ 'person', |*ac-*|$_{V}$ 'to don', |*mic-*|$_{V}$ 'to land', |*kic-*|$_{V}$ 'to sink, fall into water', |*tuc-*|$_{V}$ 'to step on, come across, arrive, occur', |*pi*(+)*c-*|$_{V}$ 'to hunt'.

b. |*uk*-|$_{N}$ ‘ one approaching’, |*man*-|$_{N}$ ‘that one’, |*mil*-|$_{V}$ ‘throwing’.
– see (P1; § 7.1) for the (C)VC stem strengthening (through gemination).

There are a number of stems that have final consonant clusters – CVCC or CVCCC – though three-consonant clusters are not permissible (and are broken by /ɨ/ insertion; P7) at the phonemic level:

(*C*)*VCC*-:

(19) |*akm*-|$_{N}$ ‘one across’(root), |*atẏ*-|$_{N}$ ‘name’, |*taŋẋ*-|$_{V}$ ‘to see’, |*nɨyẏ*-|$_{N}$ ‘north, northerly wind’, |*tɨkẏ*-|$_{N}$ ‘index finger’, |*nutɣ*-|$_{N/V}$ ‘(to shoot) a gun’, |*kamɣ*-|$_{N}$ ‘(skin) boot’ (root).

(*C*)*VCCC*-:

(20) |*azvẏ*-|$_{N}$ ‘walrus’, |*tɨɣlɣ*-|$_{V}$ ‘to steal’.

ii) Bisyllabic – which is the canonical form of stems:

(*C*)*VV*(*C*)-:

(21) a. |*ui*-|$_{N}$ ‘husband’, |*ciu*-|$_{N}$ ‘front’, |*kiu*-|$_{V}$ ‘to answer’, |*naa*-|$_{V}$ ‘to become complete (in number)’
b. |*auɣ*-|$_{N}$ ‘blood’, |*cii*(*ẏ*)-|$_{N}$ ‘sheefish’.

(*C*)*VVCC*-:

(22) |*kaalɣ*-|$_{V}$ ‘to rummage through’, |*paaŋẏ*-|$_{V}$ ‘to paddle (double-bladed)’.

(*C*)*VCV*(*C*)-:

(23) a. |*aẏu*-|$_{V}$ ‘to ripen’, |*mikɨ*-|$_{V}$ ‘to be small’, |*ɨnɨ*-|$_{N}$ ‘house’, |*ciku*-|$_{N}$ ‘ice’
b. |*acaɣ*-|$_{N}$ ‘paternal aunt’, |*nacaẏ*-|$_{N/V}$ ‘(to put on) a hat’, |*tɨkic*-|$_{V}$ ‘to arrive’.

(*C*)*VCVCC*-:

(24) |*inaẏc*-|$_{V}$ ‘to lie down’, |*naquɣc*-|$_{V}$ ‘to put a belt on’.

(*C*)*VCCV*(*C*)-:

(25) a. |*kumla*-| ‘coldness’
b. |*całmaɣ*-|$_{N/V}$ ‘(to) patch on clothing’, |*alŋaẏ*- |$_{V}$ ‘to write’.

iii) Trisyllabic or longer stems, of which there are a fair number:

(*C*)*VCVCV*(*C*)-:

(26) a. |*aqumi*-|$_{V}$ ‘to sit’; |*atata*| ‘later’ (particle)
b. |*ikayuɣ*-|$_{V}$ ‘to help’, |*piŋayut*-|$_{N}$ ‘three’.

(*C*)*VVCV* (*C*)-:

(27) a. |*aata*-|$_{N}$ ‘father’
b. |*iitaɣ*-|$_{N}$ ‘tall cotton grass’, |*quumiɣ*-|$_{V}$ ‘to hold, grasp‘.

(*C*)*VCVCV*(*C*)-:

(28) a. |*aqumi*-|$_{V}$ ‘to sit’,
b. |*ikayuɣ*-|$_{V}$ ‘to help’, |*piŋayut*-|$_{N}$ ‘three’.

(*C*)*VCVCVC*-:

(29) |*iluŋaɣ**-|$_{N}$ ‘female cross-cousin of a female’.

(*C*)*VCVCV*(*C*)-:

(30) |*nutaɣaɣ*-|$_{N}$ ‘new one‘.

(*C*)*VCVVCV*-:

(31) |*ataata*-|$_{N}$ ‘paternal uncle‘.

CVVCCVC-:

(32) |*ciisquɣ*-|$_{N}$ ‘knee’, |*caaχłuɣ*-|$_{N}$ ‘dust’.

CVCVCVC-:

(33) |*nutaɣaɣ*-|$_{N}$ ‘new (thing)’, |*caɣumiɣ*|$_{N}$ ‘left hand’, |*kamayuɣ*-|$_{V}$ ‘to think’.

(*C*)*VVCVCCV* (*C*)-:

(34) |*quuyuɣni*-| ‘to smile’.

Most of longer (above quadrisyllabic) lexicalized stems may turn out to be historically polymorphemic, i.e. secondarily derived stems:

(35) |*quzŋiɣŋalŋuɣ**-|$_{N}$ ‘goat’ – from |*quzŋiɣ*+*ŋat*+$_{1}$*ŋuɣ**-| (reindeer-seem.like-VNrl)
|*nałuyaɣuc*-|$_{V}$ ‘to forget’ – from |*nału*+$_{1}$*caɣ*[u?]+(*u*)*c*-| (not.to.know-VVsm[?]-E_{APL})

Particles (listed in § 53) are basically excluded from above, a few of which may be quadri- or penta-syllabic, e.g. *naamikika* ‘I don’t know’.

2.3.3. Lexical stock in trade: native and loan

The number of primary (non-derived and unanalyzable) stems in the CAY stock is presumably relatively small (perhaps not much exceeding 2,000 in the final analysis) and suffixes are even more limited in number than stems (perhaps not much exceeding 500), while for the analysis the new edition of Central Yup'ik Dictionary with 10,114 entries (see § 1.4-ii) is long awaited for. This relatively limited native stock is fully utilized to create descriptive words for newly necessitated or introduced concepts, i.e. non-native ones, given the high derivational capability of the language. CAY is more apt to draw out of native lexical stock or to extend the meaning of native words than to borrow words.[13]

By contrast, CAY suffixes seem to be all native with at least one exception (see fn. 1).

Nevertheless, after European contact there has been a considerable influx of non-native elements (almost exclusively as noun stems), especially of Russian words, and, more recently, English words occur ever-increasingly in daily speech.

i) *Russian loans* – now generally incorporated into the native lexical stock: CAY has nearly 200 Russian loans attested (Krauss 1996a) – see the list in Jacobson (1984: 681–687), despite the relatively short rule of Alaska by the Russians (1840s through 1867 in the CAY area). They were introduced through the Russian Orthodox Church and the Russian-American Company in particular, which were in fact the Yupik people's first Western contact. Jacobson (1984: 678–680) provides a good survey of Russian loans at some length. See also Hammerich (1954) for the pioneer work on this topic.

Semantically the loan words include imported food items, domesticated animals, material culture (incl. clothing, household, transportation), religion, etc. The Russian term for 'Cossacks' was established as the Yupik term *kass'aq* for 'white person (now including Americans), priest'. See (37) and (38) for borrowed nouns.

Borrowed verbs are very few, though some are attested:

13. Parenthetically speaking, although simplistic rapprochement is far from being my taste, this lexical tendency of the language, together with its one-sidedness of morphological process (§ 4.1.1), i.e. suffixation, cannot but bring to mind the unique and well-developed material culture that the Eskimo people built up through their resourceful and ingenious use of the very limited material available (snow, animal fur and bone, fish skin, stone, drift wood, etc.) in the most forbidding natural environment on earth.

(36) |*asali*-| ‘to make pancakes, fry’ (< *zharit’* ‘to fry’)
– cf. *assali-aq* ‘pancake’ whose *-aq* is distinct from the linker for loanwords in ii) below but the passive relativizer |*-ɣaẏ-*| (§ 17.4.2)
|*payaẏi*-| ‘to weld, solder’(< *payát’* ‘to solder’).

ii) *Morphological adjustments of loanwords*: Loanwords as foreign elements, particularly ones from English, cannot generally take Yupik derivation and/or inflections directly. Aside from the segmental adjustment and/or replacements in accordance with the different systems (as in any other language), the most conspicuous adjustment is the addition of the “linker” or linking suffix (LNK) |+(*V*/*VV*)*ẏ*| (V = mainly /a/ but also /i/ or /u/) to make Yupik suffixes attachable (§ 52.5-ii). The linker is marked by a hyphen placed after the loanword in the practical orthography:

(37) *kelip-**aq*** ‘bread’ (< *khleb*), *c*/*sass’-**aq*** ‘clock’ (< *chasý*), *Alussistu-**aq*** ‘Christmas’ (< *rozhdestvó*), *kuun-**iq*** ‘horse’ (< *kon*’) – the vowel *i* perhaps due to palatalized *n*
(*e*)*stuul-**uq*** ‘table’ (< *stol*) – the vowel *u* (phonetically [o]) as copied vowel.

No linker is added if the Russian originals already have Yupik-like finals:

(38) *cainik* ‘kettle’ (< *cháynik*) – as opposed to *c*/*saay-**uq*** ‘tea’ (< *chay*) with linker *-uq*.

See § 3.3.5.2 for plenty of cases with adjustments of word-initial consonant clusters, together with vowel cluster fluctuations and gemination addition (closely connected with Russian *udal’ene*), etc.

iii) *English loans*: This second wave of loanwords, again including more nouns than verbs, are being increasingly interspersed into Yupik these days when there are actually no Yupik monolinguals remaining. They have not yet been incorporated as inflectable stems, but remain a kind of particle. They are therefore generally used with the linker |+(*V*/*VV*)*ẏ*-| for expansion with derivation and inflection, just like when CAY interactive particles are placed within inflected verbs of ‘to say’ (e.g. he said ‘let me see’); cf. § 52.5. As the linker-final consonant is weak, it may be deleted by (P4i) as *nampa-* in (40).

(39) a. |*sain-aẏ*-| ‘to sign’: ***sain**-a-llru-uq* ‘he signed’
– written as *sain-allruuq*
|*kaal-aẏ*-| ’to call’: ***call**-a-llru-uq* /ká·łaɬχuuq/ ‘he called’
cf. *calla-llru-uq* /całáɬχuuq/ ‘it opened’
– with |*cała*-| ‘to be open’

b. |*selippussaaẏ-*| [BB]: ***selip'u-****ssaaq* ‘slipper’
– with unidentified linker (?).

(40) *Qayagau-qi-a* [*u-ku-ni* ***nampa****-ni*]
call-FUT-OPT.2sg. this-EX-LOC.pl. number-LOC.pl.
‘You (sg.) call (phone) this number.’

While loanwords from Russian have now been totally incorporated into Yupik and inflect as part of the native lexical stock (a) below, this is not yet the case for English loans, which thus generally take a linker (b), unless (c) the English word has already been adjusted to Yupik phonologically:

(41) a. *muluk'uu-mek* (ABM.sg.) ‘milk’
b. ***milk-aa****-mek* (with LNK *-a-*)
c. ***mileg****-mek*.

2.4. Inflectional suffixes (inflections)

Together with stems, inflections are obligatory elements in inflecting words (except for the optional category of person [possessor] for nominals).[14] An inflection consists of no less than three inflectional suffixes encoding such grammatical categories as number, person (possessor), and case for nominals, and person (subject and object) and mood for verbs, which are often phonologically fused. Tense-aspect and modality are not inflectional categories of the language but are derivational and not obligatory – cf. § 42, § 43. Gender and nominal classification play little role in CAY, and its grammar focuses little on sex distinctions. Glosses for the third person are thus given for convenience as ‘it, its’ (for non-humans) or ‘he, his, him’ (for humans), unless it is pragmatically adequate to use ‘she, her’.

i) CAY distinguishes three numbers, i.e. singular (sg.), dual (du.), and plural (pl.), and four persons, i.e. first (1), second (2), third (3), and reflexive-third (3R), each in all of the three numbers. Use of duality is rapidly declining among young speakers, which is one of the most obvious and remarkable decays in the inflectional system of the language.

The reflexive-third person, which occurs with possessed nominals and with participial, connective, and appositional mood verbs (below), is triggered by the third person subject (S/A) as the syntactic pivot of the main clause.

14. Even though person (possessor) is not necessarily an obligatory category for nominals, it is fused with number and case and has to be considered as part of inflection.

As stated (§ 4.1.4), CAY nominals distinguish two syntactic cases – absolutive (ABS) and relative (REL; covering ergative and genitive) – and five oblique cases for "demoted" and peripheral arguments, three of which – ablative-modalis (ABM; 'with'), allative (ALL; 'to'), locative ('at/in') – are for marking demoted core arguments, while the other two – perlative (PRL; 'through') and equalis (EQL; 'as/like') – are used only for peripherals (adverbials). ABS may have a peripheral (temporal) function as well. In addition, some kinds of nominals have vocative (VOC) forms.

For verbs, the language has six moods – four "independent moods": indicative (IND), participial (PTP), interrogative (INT), and optative (OPT); one "subordinate mood", i.e. the connective (CNN) [15]; and one "cosubordinate mood" (terminology by Van Valin and LaPolla 1997), i.e. the appositional (APP).[16]

The interrogative mood is closely connected with an "ignorative" word (§ 4.2.1, § 15) (but not with interrogative question particle |≠*qaa*|; § 5.3.1, § 53.2)

Connective-mood clauses, responsible for subordinate clauses (§ 50.2 through § 50.11), modify the main clause adverbially in ten different ways, mostly for temporal and logical settings.

The appositional mood is responsible for cosubordinate clauses, but may also function as a main clause prediate, like any of the four independent moods.

Unlike English participles, the participial is a main clause predicate, typically co-occurring with a modal particle or enclitic, but, true to the original nomenclature, the same marker functions as a relativizer (VNrl; § 17.2) as well.

Verbs index the person(s) for their core argument(s) – subject and object, while the appositional verb has the morphological idiosyncracy of being monopersonal (§ 51-ii.c).

The inflections are listed in Tables 20 through 23 (for nominals) and Tables 46 through 50 (for verbs).

The formal identity of verbal and nominal inflections, namely, third person object transitives in the indicative/participial mood (Table 46) and possessed nouns in the absolutive case (Table 21) led Thalbitzer (1911: 1057-1059) to think that Eskimo verbs have a nominal nature – see § 46(1), (2), for instance.

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15. Variously called in Eskimology: subjunctive-conjunctive (Kleinschmidt 1851), relative (Schultz-Lorentzen 1945; Bergsland 1955), oblique (Woodbury 1981), causative/conditional (Fortescue 1984), besides *connective* (Reed et al.1977; Jacobson 1995; Miyaoka 1996).
16. This is given various terms in Eskimology: infinitive (Kleinschmidt 1851; Woodbury 1977b), subordinative (Reed et al. 1977; Jacobson 1995; Miyaoka 1996; Mithun 2008), contemporative (Bergsland 1955; Fortescue 1984), and *appositional* (Schultz-Lorentzen 1927, 1945; Woodbury 1981, 1983; Miyaoka in this description).

ii) The three (nominal) and the two (verb) grammatical categories as above are encoded in inflection. Not all kinds of nominals, however, are fully inflected. Some nominals never inflect for person, and adverbial demonstratives (§ 12.3.1) inflect only for case, but not for number and person.

As stated, most of the morphemes that constitute an inflection are more or less transparently segmentable, while some are phonologically fused together (polysemous). Either segmentable or not, an inflection is generally given as a single unit in underlying representations with the left boundary indicated by square bracket [(as in |*qayaɣ*[-*put*| 'our boats'; kayak-ABS.1pl.pl.), but without indicating the internal morpheme boundary (+ or -), except for the sections where this information is necessary for correct phonological derivation. The singular marker |[+Ø| (ABS/REL.sg.) is not indicated in phonological representations (except in rare cases where its indication is useful or necessary.

2.5. Derivational suffixes

CAY derivational suffixes generally elaborate the lexical meaning or change the grammatical function of the preceding stem, composing together with it a secondarily derived stem. Owing to their multifarious functions, morphological derivation may be richly varied and highly elaborate. As such, CAY derivational suffixes, when recursively occurring within a word, may turn out to weave a wide variety of figures of speech as well as grammatical complication.

Derivational suffixes are typically mono- or bi-syllabic. Tri-syllabic (or more) suffixes are rare, apart from composite ones (§ 4.2.5.3).

A great majority of derivational suffixes – both grammatical and lexical – are sensitive to the inflecting word classes (either nominals or verbs), so they can be classified primarily in line with the syntactic category (nominal, verbal) of the (expanded) stem to which they are suffixed and of the resulting expanded stem, as in the following:

(42) a. transcategorial – (43a)
b. stem-elaborating – (43b)
c. root-expanding – (43c), below.

Except for (c), derivational suffixes of one and the same category may occur successively or recursively.

The transcategorial (a) includes a few particlizers that convert a verb into a non-inflecting exclamative particle (§ 52.4), and there is one linker ('to utter', linking suffix) which is relevant to non-inflecting words or to non-native (English) words (§ 52.5).

2.5.1. Classification: transcategorial vs. stem-elaborating

Derivational suffixes have the three major types above, each of which may be subgrouped, with the chapter numbers followed by the (sub)groups of suffixes and abbreviations:

(43) a. *transcategorial*:

1. VN	nominalizing (V→N)			
	lexical derivation:	VN		§ 19
	clausal conversion:	VNnm (nominal clauses)		§ 18
		VNrl (relative clauses)		§ 17
2. NV	verbalizing (N→V)			
	lexical derivation:	NV		§ 38
	clausal conversion:	NVrv (relational verbs)		§ 37
3. VPc	verb particlizer (V→Pc)	VPc (exclamative)		§ 52.4

b. *stem-elaborating* – semantic/grammatical modification:

1. NN	nominal-elaborating (N→N)			
	adjectival	NN	§ 20.1,	§ 20.2
	(dis)honorific/attitudinal	NNh		§ 20.3
	locational	NNl		§ 11.2.3
2. VV	verb-elaborating (V→V)			
	valency-modification			
	simplex verbs	VVsm		§ 39
	complex verbs	VVcm		§ 40
	non-valency modification			
	adverbial	VVa		§ 41
	tense-aspect	VVt		§ 42
	modality	VVm		§ 43
	negation	VVn		§ 44
	comparison	VVc		§ 45

c. *root-expanding* (EX), which yield:

nominal or mono-/bi-valent stems	§ 10.5,	§ 36
demonstrative stems		§ 12

Apart from (c), VN (a-1) and NN (b-1) are "nominal suffixes" (cf. § 4.1.1-ii) in that their derived stems are nominal, while NV (a-2) and VV(b-2) are "verbal suffixes" in that their derived stems are verbal.

Elaboration by means of the elaborating-type suffixes – NN (b-1) and a part of VV (b-2) – are semantic and lexical, while elaboration by means of most VV suffixes are grammatical. The semantic elaborations on a preceding (expanded) stem of a word may indeed be nothing but subtle associative elaborations (e.g. § 20.2). Some suffixes are much more than merely (or strictly) nominal or ver-

bal elaborations but are expressive, (dis)honorifics (§ 20.3, § 43.1) and intensifying or emphatic adverbials (§ 41.3) in particular.

Many suffixes, however, are ambivalent, belonging to two (or more) classes, e.g. NN/VVa |+*ŋuaẏ-*| 'imitation of; to pretend to', VVt/VN |-*niχaẏ-*| 'to have just -ed; one which has just -ed', or NNh/VVh |-*cuŋaẏ*-*| 'cute, dear'. Some of them are listed in each section, while others are listed only once in the section where the more productive (or primary) type belongs.

Illustrations: Transcategorial derivations (lexical) and conversions (clausal) of (a-1, a-2) are illustrated by the following, starting with the verb stem 'to learn':

(44)	*elic-* (|*ɨlic-*|$_V$)	'to learn'
	*elit-**naur**-aa*	'he is *teaching* her' (VVm-IND.3sg.3sg.)
	*elit-naur-**vik***	'school, place for teaching'; relativization (VNrl.ABS.sg.)
	*elit-naur-vi-**li**-uq*	'he is building a school'; (re-)verbalization (NV-IND.3sg.)
	*elit-naur-vi-li-**sta***	'school builder'; relativization/(re-)nominalization (VNrl.ABS.sg.)
	*elit-naur-vi-li-ste-**ngu**-uq*	'he is a school builder'; (re-)verbalization (NVrv-IND.3sg.)
	*elit-naur-vi-li-ste-ngu-**ciq***	'being a school builder'; (re-)nominalization (VNnm.ABS.sg.)
	*elit-naur-vi-li-ste-ngu-**ci-a***	'that/if he is a school builder'; (re-)nominalization (VNnm.ABS.3sg.sg.).

This amount of derivation and conversion may not be particularly complex. Characteristically in CAY, however, it is not only the case that deverbal nouns (such as 'school' and 'school-builder') can be verbalized (as in 'to build a school' or 'to be a school-builder'), but that a nominalization – a nominal clause and a relative clause – can be further "reverbalized" (e.g. 'I do not know that/if he is a school-builder', etc.) and this, in turn, can even be "renominalized" (e.g. 'my not knowing that/if he is a school-builder', etc.). This could certainly be seen as a hallmark of Eskimo-type (non-templatic type) polysynthesis, and as the source of the rich and subtle expressiveness in CAY. Undoubtedly it is due to the productive, cumulative, and recursive (though rather restricted) uses of these multifarious suffixes that CAY has attained its perhaps unsurpassed degree of polysynthesis among the languages of the world. More examples are given particularly in § 17 and § 18 as well as in § 4.2.5.4.1 below.

Transcategorial expansion is very productive, like syntactic expansion, but not only synchronically. Diachronically, it also has been responsible for a fair

number of (fixed) grammatical markers (including verbal tense-aspect, negation markers, indices of comparison, etc.) – see also "cyclical expansion" in § 4.2.5.3 below as well as § 20.4 (nominal) and § 37.5.3.2 (verbal).

Productive vs. obsolete suffixes: The majority of derivational suffixes (listed in this grammar; see *Suffix list*, pp. 1565–1575) are productive enough in derivation to combine with most (or virtually any) semantically compatible stems. Their productivity varies, however. At the other end of the scale there are suffixes which, having restrictions on their productivity, can combine only with a limited number of stems (even if they are semantically compatible with other stems), with some of them being almost obsolete (or even fossilized with stems). As such, some derived words have acquired, to varying degrees, an established special meaning, being semantically 'frozen' or lexicalized, while others are responsible for words that are made up anew on each occasion (like phrases or sentences in more analytical languages).

Derived (expanded) stems that are lexicalized or (more or less) grammaticalized may not be perceived as secondary derivatives, particularly when phonological syncopation is involved, like weather impersonal monovalent stems (§ 33.3) and two pseudo-passive markers (§ 34.1.2.2).

Some suffixes are closely related to a particular semantic category, for instance, VN |-$_1$*quẏ*-| (§ 19.2), which, though now obsolete, has left the noteworthy abundance of body-part and part-to-whole relation terms.

The unlimitedness of suffix accumulation is, however, merely theoretical. In the case of Central Siberian Yupik (CSY), de Reuse (1994) remarked that, in natural speech, the number of suffixes that occur in a word rarely exceeds half a dozen. Though no statistical data is available for CAY in any category of utterance, this tendency may not be remarkably different between the two languages.

It seems at least the case, nevertheless, that elder speakers in general tend to have greater competence of producing highly synthetic words than do younger speakers. It is to be mentioned that, in actual utterances, polysynthetic words may carry modesty with the utterance on the part of the speaker. See § 41.3.1-v.

The more common and relatively productive suffixes of each type of derivational suffix are given in the relevant sections, but the list is far from exhaustive – see Jacobson (1984a, i.e. YED) for fuller coverage.

Some examples of each type are given here to provide some idea with minimal illustration – see each referred chapter for glossed analyses:

i) *Nominalizing sufffixes* – nominalize a preceding verb stem.

relative clauses (§ 17):

(45) (*yuarun*) *atu-**qi**-i* '(the song) the one he is singing'
– final *-i* marks ABS.3sg.sg.

(*angun*) *aya-**lleq*** ‘(the man) the one who left’ [past]
– the suffix *-lleq* is multifunctional, serving also as nominalizer in (46) below but with person inflection.

nominal clauses (§ 18):

(46) a. *aya-**llr**-a* ‘that he left, her/his leaving (as experienced)’
– final *-a* marks ABS.3sg.sg.
*aya-**uci**-a* ‘that/whether he leaves (not yet experienced, uncertain)’
*ayag-**yara**-a* ‘his (usual way) of leaving’
– contrast with the following which has never person inflection:
b. *aya-**neq*** ‘leaving (in general)’, with |*-nẏ-*|; cf. (49) *ayag-neq*.

The above are from the monovalent |*ayaɣ-*| ‘to go, leave’, while a nominalization of an agentive bivalent |*nɨẏɨ-*| ‘to eat’ may be ambivalent if possessed:

(47) *ner’-lleq* ‘eating’
(*neqe-m*) *nere-**llr**-a* i. ‘eating of (fish), (fish) eating’
ii. ‘(fish’s) eating something’
– the relative-case *neqe-m* in G function reflects a) P or b) S(=A) argument, with its head marked by final *-a* REL.3sg.sg.

lexicalized:

(48) *el-**uciq*** ‘shape’ – obsolete |*ɨc-*| ‘to be’
*ca-**yaraq*** ‘custom’ – |*ca-*| ‘to do’.

deverbal nouns (VN; § 19):

(49) *ayag-**neq*** ‘beginning, start’, with |+$_1$*nẏ-*|; cf. (46b) *aya-neq* ‘leaving’
*cav-**un*** ‘oar’ – |*cavɨ-* | ‘to row’.

ii) *Nominal-elaborating suffixes* (NN; § 20) – added to a nominal stem to form an expanded nominal stem (not converting the word class). Viewed semantically, they mainly perform ‘adjectival’ modifications (§ 20.1):

(50) *angyar-**pak*** ‘big kayak’ – |+$_1$*paɣ-*| ‘big’
*angyar-**kaq*** ‘future kayak, material for a kayak’ – |+*kaẏ-*|.

iii) *Verbalizing suffixes* (NV) – turn a preceding nominal stem into a verb, thereby deriving a denominal verb stem. This includes relational verbs (NVrv, § 37; ‘to be/become [someone’s] N–’), and non-relational ones (§ 38) like existential/privative (e.g. ‘to have [no] N, there be [no] N’), action verb (e.g. ‘to make/build for, eat, use N’), etc.